

Geology & Exploration

CANFORD & TOMMY LAKE PROPERTIES

Nicola Mining Division, B.C.

CONSOLIDATED SKEENA MINES LTD. (N.P.L.)

W.M. Sharp, P.Eng.

April 28, 1967

MS file 6/4

801604

WILLIAM M. SHARP, P. ENG.
CONSULTING GEOLOGICAL ENGINEER

STE. 808, 900 WEST HASTINGS ST.
VANCOUVER 1, B. C.

April 28, 1967

President and Directors,
Consolidated Skeena Mines Ltd. (N.P.L.),
716 - 602 West Hastings Street,
Vancouver 2, B.C.

Attention: Mr. F. A. McGonigle, President

Dear Sirs:

With this the writer transmits his report, "GEOLOGY & EXPLORATION of the CANFORD AND TOMMY LAKE PROPERTIES, NICOLA MINING DIVISION, B.C." in response to your preliminary request and authorization.

A considerable part of the total report preparation time was taken up on preliminary compilations and evaluations of data contained in reports of the 1961-62 exploration, and in the translation of data embodied in random maps, sketches, and notes accruing from preliminary surveys of the Tommy Lake properties during the early part of the 1966 season.

Respectfully submitted,

W. M. Sharp

W.M. Sharp, P.Eng.

Encls.

Report

GEOLOGY AND EXPLORATION

of the

CANFORD & TOMMY LAKE PROPERTIES

NICOLA MINING DIVISION, B. C.

for

CONSOLIDATED SKEENA MINES LTD. (N. P. L.) .

by

W. M. Sharp, P. Eng.

April, 1967.

INDEX

	<u>Page</u>
SUMMARY & RECOMMENDATIONS	1
ESTIMATED COSTS	2
INTRODUCTION	4
<u>PART A - CANFORD GROUP</u>	
PROPERTY	7
LOCATION & ACCESS	8
GENERAL FEATURES	8
HISTORY	9
GEOLOGY & MINERALIZATION	
(a) Regional	10
(b) Local	10
CURRENT EXPLORATION	11
<u>PART B - TOMMY LAKE GROUPS</u>	
PROPERTY	14
LOCATION & ACCESS	16
GENERAL FEATURES	16
HISTORY	16
GEOLOGY AND MINERALIZATION	
(a) Regional	19
(b) Local	19
RECENT EXPLORATION	20
CERTIFICATE	

continued:-

INDEX, continued:

REPORT ILLUSTRATIONS

Fig. 1-2; Index Maps, Canford and Tommy L. properties

Fig. 3; To and Crow Claims, Canford; 1" = 1000'

Fig. 4; Properties, General Geology, Guilchena-Pennask Area; 1"=2 mi.

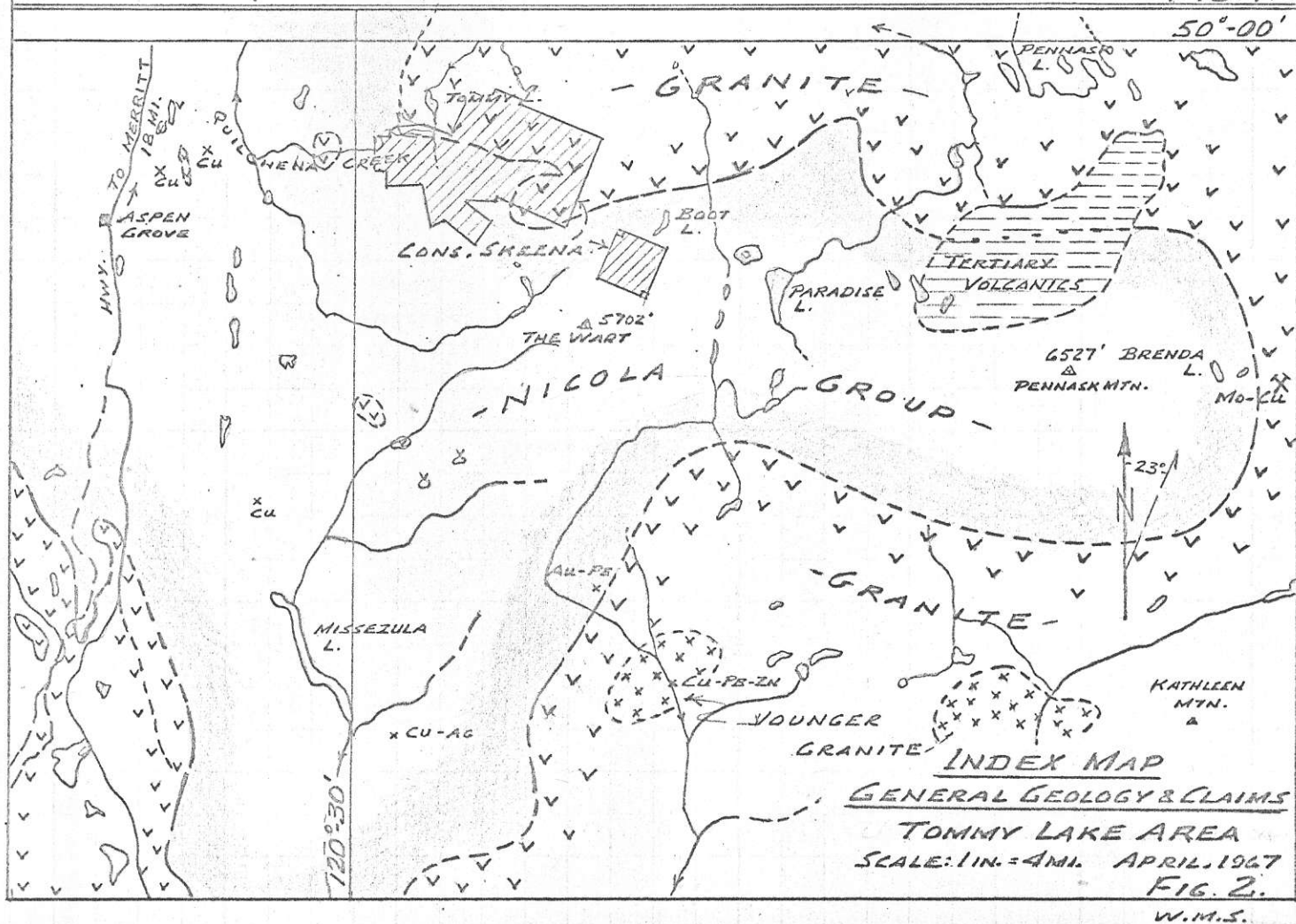
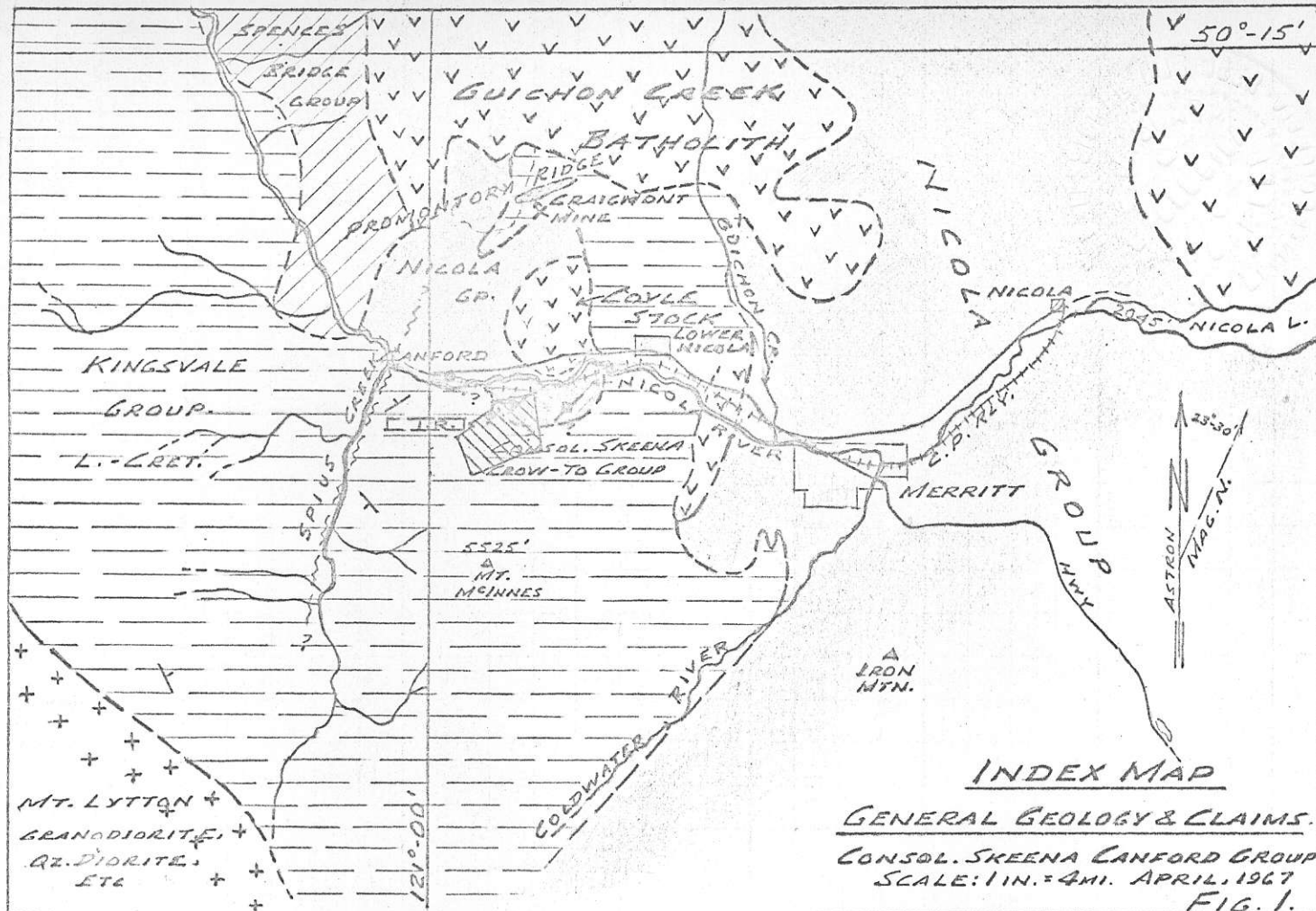
Fig. 5; Boot Lake Claim Group & Preliminary Geochemical Survey; 1"=1000'

Drawing

No. 1 ; To & Crow Group, Geochem. Survey; 1" = 200'

Drawing

No. 2; To & Crow Group, Magnetic Survey; 1" = 200'



SUMMARY & RECOMMENDATIONS

A. CANFORD CLAIM GROUP:

Consolidated Skeena Mines' 38-claim property southwest of Canford, B.C. is situated within the same broad lithologic-structural panel as the Craigmont Mine, situated six miles northward and adjacent to the main Guichon intrusive body. In addition, the principal chalcopyrite-magnetite mineralized zone at the Canford group appears closely associated, spatially and structurally, with an outlying stock of similar composition as the parent Guichon batholith.

Within the northwesterly part of the Crow-To group, a wide, steeply-dipping band of basic Nicola tuffs is appreciably mineralized by magnetite and veining and disseminated chalcopyrite and related copper minerals. Recent geochemical and magnetic surveys have delineated a 3200 foot gross strike extent of mineralization. Numerous outcrops of copper mineralization have been noted within the less heavily overburdened sections of the zone.

General and detailed exploration of this zone, and its apparent continuations to the northeast and southwest, is recommended. It is proposed that this be accomplished by bulldozer stripping and trenching, geological mapping, sampling, with follow-up diamond drilling. Supplementary, or extended geophysical and geochemical exploration should be undertaken as indicated.

B. TOMMY LAKE GROUPS

The company holds two geologically well-located properties, totalling 153 claims, situated to the south and east of Tommy Lake. These are located within the westerly part of the Nicola group re-entrant - the major geological feature of the region, and which also includes the developing Brenda Mo-Cu deposit 16 miles to the east.

Exploration of Consolidated Skeena Mines' upper Quilchena Creek properties commenced in July, 1966. To date, this has been principally concerned with claim staking and reconnaissance soil-sampling. Early December snow falls permitted only localized follow-up geochemical investigations and supplementary bulldozer stripping - the bulk of the latter work being directed to annual assessment work on the original HN-WEN group.

The preliminary geochemical surveys succeeded in delineating significant copper soil anomalies on both the Echo and Toe groups, the principal one extending for some 5000 feet along an apparent controlling structural lineament near the main volcanic-quartz diorite contact. The initial 1967 field work will be directed to the further exploration of these anomalous zones by airborne geophysical, and follow-up ground exploration.

The principal recommendation is for further reconnaissance geochemical exploration and corollary airborne geophysical surveys within, and beyond the actual boundaries of the property; this to be followed by detailed ground-based exploration.

ESTIMATED COSTS

A. CANFORD GROUP EXPLORATION:

1. Provision for laboratory checks, geochemical survey extensions	\$ 1,500.00
2. Provision for extended magnetic surveys	500.00
3. Bulldozer stripping and trenching	3,000.00
4. Provision for trench sampling; 100 @ \$5.	500.00
5. Diamond drilling:-	
Access roads and drill sites	500.00
Drilling - estimate 2500 l.f. @ \$8. 10 ⁰⁰	25,000.00
Core sampling and assays	500.00
Core handling facilities, boxes, etc.	1,000.00
6. Supervision, engineering - 2 months	2,500.00
7. Provision for omissions and contingencies	3,500.00
<u>Sub-total, Canford -</u>	<u>\$38,500.00</u>

N.M.S.


B. TOMMY LAKE PROPERTY EXPLORATION:

1. Airborne geophysical surveys		\$ 3,700.00
2. Geophysical-geochemical survey, grid preparation:		
Base-lines; 20 mi. @ \$100.	2,000.00	
Reconn. cross-lines; 60 mi. @ \$50.	3,000.00	
Detailed grid, 30 lines, 50 mi.	<u>2,500.00</u>	7,500.00
3. Reconnaissance magnetic survey		1,500.00
4. Recon. soil-sampling, 2 men/1 mo.	1,500.00	
Laboratory Hg analyses - 800 @ 2.25	1,800.00	
Laboratory Cu-Mo analyses 3000 @ 1.75	<u>5,250.00</u>	8,550.00
5. Bulldozer trenching, 20 days @ \$225.		4,500.00
6. Provision for diamond drilling 3000 l.f. @ \$10.		30,000.00
7. Field camp & supply, 3/months	1,500.00	
Vehicle operation, 100 days @ \$5.	<u>500.00</u>	2,000.00
8. General engineering- supervision		2,000.00
9. Trench & core sampling and assaying		1,000.00
10. Provision, omissions and contingencies		<u>5,300.00</u>

Sub-total Tommy Lake - \$ 66,050.00

TOTAL, Canford and Tommy Lake - \$ 104,550.00

Respectfully submitted,


W.M. Sharp, P. Eng.

INTRODUCTION

The preliminary 16-claim Crow group was submitted to Mr. McGonigle for his initial appraisal and examination arrangements during the fall of 1966. Following this, the writer made a preliminary geological examination of the property, guided and assisted by locator-vendor Mr. W. T. Curnow, on October 30, 1966. Mr. Curnow also provided local transportation to, and background information regarding the property.

The above examination consisted of a general reconnaissance examination of the lithology and structure, and more detailed inspections of the local occurrences of copper mineralization. Because of the highly-undeveloped nature of the showings and the general cover of overburden over the major zone of interest, mineral sampling was not attempted at this time.

On the recommendation of the writer, the Company negotiated an option for the CROW group and westerly-adjointing to claims. Additional claims, to cover suspected extensions of the main "bluff zone" were subsequently staked by Mr. J. E. White.

Since early December, 1966, Mr. White, Consolidated Skeenas field engineer, has carried out claim surveys, soil sampling, magnetic surveys, and general prospecting of the property. He has kept the writer well informed on exploration progress via by-weekly progress reports and supplementary detailed maps.

The writer acknowledges his use of this progress information, and expresses his appreciation of both Mr. McGonigle's and Mr. White's cooperation in transmitting full details to the writer.

With reference to the current exploration program, the writer notes that his 1961-63 experience on the detailed exploration of several Promontory Ridge properties to the north has permitted him to make some close comparisons of general geological and mineralogical features of the two areas. In fact, he believes that they belong, essentially, within the same broad structural-lithological panel. This is quite significant in that the Craigmont mineralization

was concentrated within a similar geological environment as that of the Canford group mineralization.

Field exploration of the Company's Tommy Lake properties recommenced in the summer of 1966. The initial program of staking and reconnaissance soil-sampling of the ECHO and TOMMY groups was performed by A. Boettger, prospector. He was succeeded by Mr. White during the fall and winter months. Mr. White very competently evaluated and re-ran much of A. Boettger's preliminary field work and, in addition, carried out more closely controlled general and detailed exploration. From this, and the writer's suggestions, he has extended the claim groups along certain indicated zones of mineralization.

The writer has made several examination visits to both the Canford and Tommy Lake properties since the current exploration programs were initiated. His geological direction of the Company's Tommy Lake exploration program is largely based on several years' personal geological experience on mapping and property examination within the general Highland Valley - Princeton - Hedley area. This includes his participation in the original (G.S.C.) mapping of the "Princeton Map Area".

The writer's principal geological references, basic to this report are listed:

1. G.S.C. Memoir 243 - Geology and Mineral Deposits of the Princeton Map Area.
2. G.S.C. Memoir 249 - Geology and Mineral Deposits of the Nicola Map Area.
3. W.M. Sirola, P.Eng. - Electrical, Geochemical, and Magnetometer Surveys of the Chalcocite-Malachite Group, December, 1962.
4. A.C. Skerl, maps of Aspen Grove property, Skeena Silver Mines Ltd., 1962.

5. J. E. White; detailed maps and progress reports, October, 1966 - April, 1967.

The writer points out that the report separately discusses the Canford and Tommy Lake groups under the respective general headings, Part A and Part B.

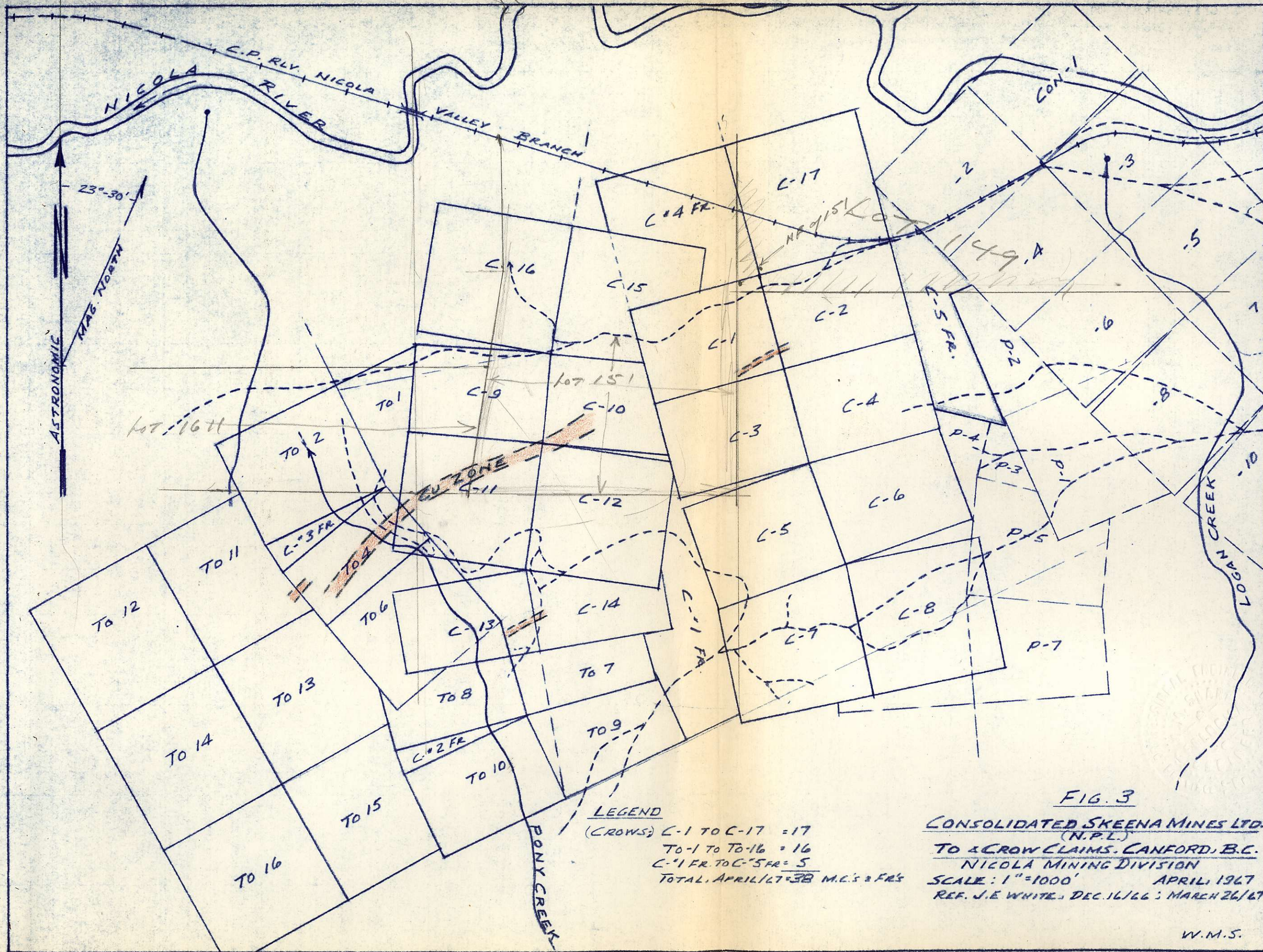


FIG. 3

CONSOLIDATED SKEENA MINES LTD.
 (N.P.L.)
 TO & CROW CLAIMS, CANFORD, B.C.
 NICOLA MINING DIVISION
 SCALE: 1"=1000' APRIL, 1967
 REF. J.E. WHITE, DEC. 16/66; MARCH 26/67

PART A - CANFORD GROUP

PROPERTY

This is shown on Fig. 3 of this report.

This consists of a block of 38 contiguous, full-size and fractional mineral claims, consisting of the Crow #1-17 inclusive Mineral Claims, To, #1-16 inclusive Mineral Claims, and the C #1-5 Fractional Claims. All are currently in good standing - the first assessments to be recorded by September 26, 1967.

The claim schedule is as follows:

<u>Claim(s)</u>	<u>Locator</u>	<u>Tag No(s).</u> <u>(incl.)</u>	<u>Record No(s).</u> <u>(incl.)</u>	<u>Record Date</u>	<u>Mining Div.</u>
Crow #1-8MC	W.T.Curnow, Spences Bridge, B.C.	744480 -744487	32456 -32463	Sept. 26, 1966	Nicola
Crow #9-16MC	" "	760523 -760530	32464 -32471	Sept. 26, 1966	Nicola
To #1 MC	A.G. Campbell, Merritt, B.C.	760533	32591	Oct. 7, 1966	Nicola
To #2 MC	" "	760532	32592	"	"
To #3 MC	" "	760535	32593	"	"
To #4 MC	" "	760534	32594	"	"
To #5 MC	" "	760537	32595	"	"
To #6 MC	" "	760536	32596	"	"
To #7 MC	" "	760539	32597	"	"
To #8 MC	" "	760538	32598	"	"
To #9 MC	" "	760541	32599	"	"
To #10 MC	" "	760540	32600	"	"
C #1 Fr.	John E. White, Merritt, B.C.	760759	33288	Jan. 19, 1967	"
C #2 Fr.	" "	760760	33289	"	"
C #3 Fr.	" "	760761	33290	"	"
C #4 Fr.	" "	pending	pending	pending	"
C #5 Fr.	" "	"	"	"	"
Crow #17 MC	" "	"	"	"	"
To #11-16 MC incl.	" "	"	"	"	"

The C#4, C#5 Frs., and the Crow #17 M.C. were located on March 23, 1967; the To #11-16 incl., M.C.'s were located March 25, 1967. The Form A's for these are currently pending.

The easterly-adjointing "P" claims represent the "Pat" group of O. Gillespie, Merritt, B.C. The more easterly "Con" group is owned by A. Gavelin of Merritt, B.C. Neither of these groups is of immediate interest to Consolidated Skeena Mines Ltd.

The apparent southwesterly extensions of the Crow-To principal mineralized zone are adequately protected by the more recent locations - pending actual testing and additional reconnaissance exploration.

LOCATION & ACCESS

The location of the Canford group is shown on Fig. 1 of this report.

The group is situated on the south side of the Nicola River, between 1 and 2 miles S.W. of Canford, a C.P. Railway station at approximately 9 rail-miles west of Merritt, B.C. The railway traverses two northerly claims of the claim group.

All parts of the group are readily accessible via local secondary public roads and a system of old logging roads through higher parts of the property. The maximum range of elevations over the property is slightly over 1000 feet - the principal topography of note being the steep slope and rocky bluffs rising southward of the Nicola Valley bottom.

GENERAL FEATURES

From north to south the property straddles the southerly river flats and a physiographically older rock bench lying a few hundreds of feet above the former area. The upper area is generally of a flat-hummocky nature, with occasional bedrock outcrops. Forest growth over this bench is patchy, with frequent (cleanly) logged-off or second growth areas. The general absence of small brush markedly facilitates foot access and exploration.

The lower flats are heavily drift covered - largely obviating useful extensions of the current exploratory surveys over these areas. The elevated bench area is, generally, very lightly overburdened. Major accumulations of drift are restricted to the few drainage courses and significant topographic depressions on the property. The steep slopes between the river flats and upper bluffs or rock benches are heavily covered by small to coarse talus. In general, the variations in topography and generally thin, dry soil cover would appear to preclude the successful application of electrical geophysical methods to sub-surface exploration.

The interior climate, with its brief periods of markedly cold weather and general sparse precipitation permits year-round exploration.

Ease of access, close proximity to sources of supply, labour, mining services and transportation constitute local factors favourable to rapid, low-cost exploration and mine development ventures.

HISTORY

The areas of current geological interest within the group have not been previously staked or intensively explored. Evidence provided by occasional old stakes and flagging indicates that a part of the property had been geochemically (?) investigated - apparently in reconnaissance fashion only - this would have been several years ago.

The Promontory Ridge area northward across the river, and characterized by similar geological features, has, however, been intensively explored at frequent and protracted intervals since the discovery of the Craigmont property some 10 years ago.

During the past year A.S. and R. exploration crews did considerable exploratory work, including I.P. Surveys and test-drilling, on the Copper Hill group a few miles to the southwest of the Company's Canford group. They reportedly explored an extensive occurrence of copper mineralization with results unknown to the writer.

GEOLOGY & MINERALIZATION

REGIONAL:

This is broadly illustrated on report Fig. 1.

The property is centrally situated within the major transverse panel of Nicola Group rocks which impinge on the south contact of the Guichon Creek batholith within the upper Promontory Ridge area. This broad panel of steeply-dipping Nicola rocks consists, essentially, of andesitic to basaltic volcanic flows and pyroclastics; the section contains frequent major intercalations of argillaceous, limy, and impure feldspathic-tuffaceous material. The Craigmont ore bodies occur rather closely adjacent to the contact of the Guichon intrusive, and within a variably-metamorphosed section of limy Nicola tuffs, limestones, graywackes, and feldspathic pyroclastics. However, with regard to their total areal extent, the Nicola group rocks form a relatively minor window within the major blanket of younger Kingsvale volcanics.

Two stocks, probably southerly apophyses of the main Guichon quartz diorite body, are exposed within a mile east and west of Lower Nicola. In addition, the latter (Coyle") body extends to within a mile, or less, of the north boundary of the Company's Canford group.

LOCAL:

The claims area is underlain by rocks of both the older (Upper Triassic) Nicola, and younger Kingsvale groups - the latter are post-mineral in age.

The mineralized Nicola rocks occur as a sequence (NE-SW) of argillaceous-quartzites, dark basic augitic tuffs, and (feldspar) crystal tuffs or porphyrites - the latter two types containing appreciable amounts of finely-disseminated magnetite.

Formational trends are northeasterly; dips are uniformly steep to the north-east or southwest, or conformable to Promontory Ridge trends.

Chalcopyrite and minor bornite and/or chalcocite occur principally within the mildly-sheared tuffaceous beds, and also within the crystal tuffs and/or feldspar porphyrites. Minor amounts of disseminated chalcopyrite have also been noted in the argillaceous-quartzitic beds. Sparse amounts of pyrite occur with the copper minerals. The better concentrations of copper minerals, as veinlets and disseminations, appear to occur where the rather crystalline, porous tuffs contain readily-ascertainable amounts of disseminated magnetite. This association, but with greater metasomatic alteration, is characteristic of the Craigmont mineralization.

Light overburden and talus obscure the greater part of the inferred mineralized tuff-porphyrite zone; however, the few exposures noted to date, along with the supplementary geochemical and magnetic evidence, indicate a N.E.-S.W. gross strike-length in excess of 2500 feet, and "open" at both ends. At present there are strong indications that the N.E. trend of the zone is into the "Coyle" quartz-diorite stock, and that the Crow-To mineralization may have been derived from sources within, or channels penetrating the stock.

The indicated plus 1/2 mile strike extent of the zone will necessitate a staged exploration program. The initial phase of this will consist of general exploration of the indicated gross extent of the zone, with a second phase involving the closer exploration of the more significantly-mineralized sections. The initial phase should include a provision for reconnaissance exploration of the "open" ends of the zone.

CURRENT EXPLORATION

1. Geological Mapping:

To date, this has been of a preliminary nature only. Detailed geological mapping will be largely concentrated within the geochemically and magnetically-anomalous zones currently indicated. The writer plans to do this in conjunction with the proposed strip-and-trench exploration.

2. Geochemical Survey:

This is plotted on Report Dwg. No. 1.

This was started on December 17, 1966. It was stipulated that soil sampling be done on contour-line control over hill-slope areas, with the option of transferring to normal grid control on relatively level areas; however, (200") contour control was employed throughout. All sample stations, on 100 foot intervals, are "flagged" with plastic ribbon.

The rubeanic field sample test, for "soluble Cu", was employed on all of the 1200 (approx.) samples taken. Of these, approximately 430 were analyzed for "total-Cu" content by the Bio Metals laboratory and the results reported in "parts per million" (p.p.m.). The laboratory checks generally confirmed the preliminary rubeanic tests.

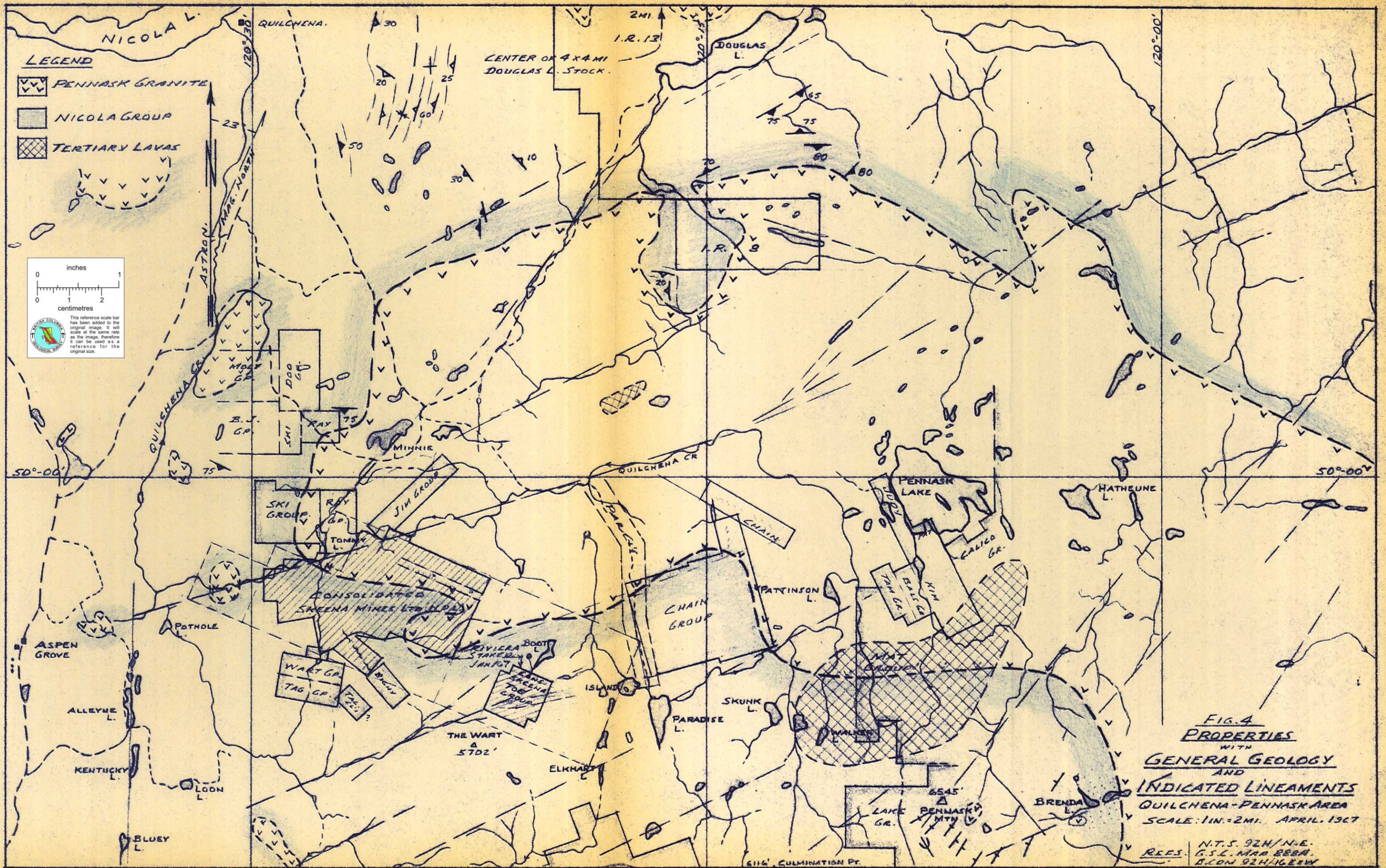
The geochemical survey has indicated a principal N.E.-trending anomalous zone extending from the west side of To #4 M.C., through Crow #9-11 boundary, and into Crow #10 M.C. The presently indicated strike length of this zone is about 3200 feet, frequent actual occurrences of copper mineralization, as evidenced by visible sulphides or malachite stain, have been observed throughout the area of this anomaly. Because of the general sparsity of mineralized exposures it is not currently possible to estimate the probable width of the indicated zone. This could range from a few feet to 50 feet or more. Estimates of the probable grade of the source mineralization are necessarily deferred until sufficient trenching and drilling have been done to permit representative sampling.

Other anomalous zones of relatively minor extent occur within Crow #1 and Crow #13 M.C.'s.

3. Magnetic Surveys:

This phase of exploration (Dwg. No. 2), commencing with grid preparation, was started on Feb. 24, 1967, pursuant to the writer's interim recommendations of February 20th. Two parallel base-lines, "50N" and "62N", each at N80°E and totalling 2.6 miles, were established at the top and foot, respectively, of the main bluff section. Grid cross-lines were spaced at 200-foot intervals from OE to 64E. These, including interim local northerly and southerly extensions to close developing anomalies, totalled 10.5 miles as of April 17th. Grid cross-lines stationed at 100-foot intervals, and magnetometer measurements made at 50-foot intervals using a flux-gate instrument.

The resulting coverage has delineated a pronounced composite anomalous zone trending northeasterly, and closely conforming with the position and trend of the principal geochemical anomaly. The broader "highs" are in the order of 2000 gammas with subordinate "highs" to 3500-5000 gammas. The general background is about 500 gammas. Like the geochemically-anomalous zone, the magnetic zone is presently "open" to the southwest; the northeasterly end of the magnetic zone projects some 1500 feet beyond the apparent limit of the geochem. anomaly. In addition to the main anomaly, a minor magnetic anomaly of plus -1500 gammas has been delineated at 4700 N, 1500-2200 E.



PART B - TOMMY LAKE GROUP

PROPERTY

The regional locations of the main ECHO and subordinate TOE claim groups are shown on report Fig. 4. Also, they are separately shown, at 1"=1000' on Dwg. 3 and Fig. 5.

The following is the claim schedule:

Claim(s)	Locator	Tag No(s). (incl.)	Record No(s). (incl.)	Record Date	Mining Div.
Echo #1-16 MC	Albert Boettger, FMC 35401	752676 -752701	31965 -31980	Aug. 16, 1966	Nicola
Echo #17 MC	"	752698	31981	"	"
Echo #18 MC	"	752699	31982	"	"
Echo #19 MC	"	752696	31983	"	"
Echo #20 MC	"	752697	31984	"	"
Echo #21 MC	"	752694	31985	"	"
Echo #22 MC	"	752695	31986	"	"
Echo #23-26 MC	"	752690-93	31987-90	"	"
Echo #27-28 MC	"	752702-03	31991-92	"	"
Echo #29 MC	"	752705	31993	"	"
Echo #30 MC	"	--- 04	-- 94	"	"
Echo #31 MC	"	--- 07	-- 95	"	"
Echo #32 MC	"	--- 06	-- 96	"	"
Echo #33 MC	"	--- 09	-- 97	"	"
Echo #34 MC	"	--- 08	-- 98	"	"
Echo #35 MC	"	--- 11	32000	"	"
Echo #36 MC	"	--- 19	-- 01	"	"
Echo #38 MC	"	--- 12	-- 02	"	"
Echo #39 MC	"	--- 17	-- 03	"	"
Echo #40 MC	"	--- 16	-- 04	"	"
Echo #41 MC	"	--- 15	-- 05	"	"
Echo #42 MC	"	--- 14	-- 06	"	"
Echo #43 MC	"	--- 18	-- 07	"	"
Echo #44-48 MC	"	752719-23	32008-12	"	"
Echo #49-60 MC	"	752765-76	32013-24	"	"
Echo #61-70 MC	"	752779-88	32377-86	Sept. 19, 1966	"

Claim(s)	Locator	Tag No(s). (incl.)	Record No(s). (incl.)	Record Date	Mining Div.
Echo #71-82 MC	A. Boettger	752789-800	32544-55	30 Sept. 1966	Nicola
Echo #83-86 MC	"	752801-04	32690-93	14 Oct. 1966	"
Echo #87-94 MC	" F.M.C.	760393-400	32694-701	"	"
Echo #1-#3 Fr.	J. White/52306	760749-51	32851-53	7 Nov. 1966	"
Echo #95 MC	"	760746	32854	7 Nov. 1966	"
Echo #96-102 MC	"	760752-58	32855-61	"	"
Chalcocite #1-2	Peter F.M.C. Gottselig/15643	401494-95	15268-69	3 Oct. 1961	"
Chal. #3-4 MC	"	40497-98	17111-12	8 May, 1962	"
Chal. #5-6 MC	"	450859-60	17335-36	24 May, 1962	"
Chal. #9-12 MC	"	450861-64	17339-42	"	"
Malachite #1-4 MC	"	401490-93	15270-73	3 Oct., 1961	"
Malachite #5-6 MC	"	403084-85	15449-50	9 Nov., 1961	"
Malachite #8 MC	"	403087	15452	"	"
Malachite #10-11 MC	"	403089-90	15454-55	"	"
Malachite #17 MC	"	457350	18573	16 July 1962	"
H.N. #1-4 MC	"	-	12573-76	30 Mar. 1961	"
Wen #1-4	"	-	12577-80	"	"
Toe #1-23	Albert Boettger F.M.C. 35401	760401 - 423	32702-724	18 Oct. 1966	"

Summarizing the above, the main claim block, consisting of the ECHO, CHALCOCITE-MALACHITE, and H.N.-WEN groups is comprised of 130 full claims and 3 fractions. The easterly subordinate TOE group consists of 23 mineral claims. The ECHO group is in good standing until August 16, 1967; the H.N.-W.E.N. group until March 30, 1968; the TOE group until October 18, 1967. The MALACHITE group is generally in good standing until (earliest) October 3, 1970.

Mr. J. White notes that the H.N.-W.E.N. group is incorrectly located on the B.C.D.M. claim maps; hence it cannot be grouped with the actually-adjointing claims for assessment purposes.

*separate assessment program
& recording for this group.*

105 - Echo + 3 Fra
30 NE Echo + 4 Fra.
20 mal-chal.
8 H.N.-WEN
65
3

LOCATION & ACCESS

The regional location of the property is shown by report Fig. 2.

The main ECHO group is situated closely south and east of Tommy Lake, and approximately 8 miles due east of the village of Aspen Grove on the Princeton-Merritt highway.

Local access is provided by 10-12 miles of forest access, and logging roads and trails. Four-wheel drive vehicles are required during the winter and spring break-up periods.

GENERAL FEATURES

The local terrain varies from gently-rolling, lightly-forested range land to rather hilly-hummocky, closely-forested areas. Numerous small lakes, ponds and/or swampy sections occur throughout the region. The topographic relief over the property is slight; elevations range between 3500-4100 feet. All of the ground is very accessible with regard to the application of ground-based exploration methods; minor areas of logging slash present some obstacles.

The area is "open" for exploration, normally, between mid-April and mid-December.

Extremely muddy road conditions during the spring break-up period, and snow to depths of 4'-6' during the mid-winter months seasonally restrict exploratory work.

HISTORY

(A) H.N.-WEN GROUP:

The writer is unable to find specific records of the original exploratory work accomplished prior to Skeena Silver's acquisition of the property in the spring of 1961.

The old work consisted of about three hand-excavated rock trenches and four short prospect adits on a northwesterly-trending shear-fracture zone in the Nicola volcanics. Mineralization consists of weathered chalcopyrite, with minor bornite and chalcocite occurring in quartz veins and lenses. The old open cuts could not be satisfactorily sampled; however, C. Rutherford, P.Eng., sampled well-mineralized sections in the main adit and two trenches. He reports the following assays:

Location	Interval	Width'	Au, oz/t.	Ag, oz/t.	Cu%
Main adit, rib:	0-5.5'	5.5	0.005	1.1	0.05
" "	5.5-17.5'	12.0	0.005	0.6	1.85
" "	17.5-24.5'	7.0	tr.	0.1	0.80
" "	52.0-56.7'	4.7	tr.	0.15	0.20
" "	66.0-70.2	4.2	tr.	0.4	0.80
" , W. Drift	-	2.0	0.01	0.6	0.55
No. 1 trench, leached		5.0	0.005	0.55	0.20
No. 3 trench		4.0	0.005	0.70	1.30

The weighted average of the 5.5'-24.5' adit-rib section is 19.0' @ 1.5% Cu. C. Rutherford notes that this represents a locally stronger section of the generally narrower shear.

During the fall of 1961 an electromagnetic survey was carried out. This did not indicate any continuity of the above zone, or of associated parallel zones.

Following this, Noranda Exploration Co. acquired an option and accomplished extensive bulldozer trenching along the central interval of the zone; they subsequently dropped their option. Skeena transferred its exploratory activities to the nearby Chalcocite-Malachite group.

(B) CHALCOCITE-MALACHITE GROUP:

While prospecting outward of the H.N.-WEN group P. Gottselig located the principal magnetite-chalcopyrite showing on Chalcocite 1 M.C. This was trenched and briefly grab-sampled; two "grabs" returned assays of 0.50% and 0.17% Cu.

After preliminary magnetic surveys, Skeena drilled 15 holes, for a total of 2800 lineal feet on this deposit during 1962. The more significant intersections are listed:

<u>Hole No.</u>	<u>Width, ft.</u>	<u>Cu%</u>
2	10	0.49
3	21	1.26
6	22	1.64
7	15	0.41
8	10	1.70
9	10	0.45

Thorough drilling of the occurrence indicated a local extent of mineralization. This is computed at approximately 25,000 tons of 1.48% Cu.

Kerr Addison Gold Mines Limited optioned the original 32-claim group in the fall of 1962. Under W.M. Sirola, P.Eng. the following work was done:

1. Self Potential Survey: This indicated a S.W.-N.E. pattern of minor anomalous zones. A large anomaly at 6+00 S, 3800 W is attributed to oxidation of primary pyrite within argillites.

2. Geochemical Survey: No marked anomalous zones were indicated. However Mr. Sirola has noted the obvious limitations of the rubeanic method of analysis and also the general absence of a distinct soil B-zone. The generally negative results obtained even within the area of known Cu-Fe mineralization substantiate the above observations. Preliminary orientation work is obviously required.

3. Magnetic Survey: The only marked anomaly (23,000 gammas) occurred over the known magnetite zone.

Kerr Addison dropped their option; no further exploration was undertaken until last fall, and this was directed to the H.N.-WEN and Echo part of the block.

GEOLOGY & MINERALIZATION

REGIONAL:

This is illustrated on 1 in. = 4 mi. and 2 mi. scales, respectively, by Figs. 2 and 4.

Both the ECHO and TOE groups are situated closely north of a major E-W trending embayment of Nicola group rocks within the main Princeton granodioritic batholith. This transverse panel of Upper Triassic volcanics probably forms the most significant major geological structure of both the Princeton and Nicola map areas. The impressive scale of the structure is marked by its persistence, as reflected by the E-S.E. alignment of sheared and "dioritized" inclusions of Nicola rocks, within the main mass of intrusive, to the west shore of Okanagan Lake. The writer estimates that its gross length exceeds 40 miles.

Within the general embayment the Nicola formations have, in places, been strongly warped and sheared along trends which are notably divergent to the regional northerly formational strikes. This major complex and discordant geological feature would appear to provide optimum structural-lithological conditions for the district Cu-Mo mineralization, as typified by the Brenda deposit, or for the smaller, higher-grade types typified by the upper Siwash Creek deposits.

LOCAL:

The rather small amount of mapped detailed geology is shown on Dwg. 3.

The general ECHO claim group is underlain by granitic and volcanic rocks, with their contact trending east-west through the middle of the ECHO group and the north half of the Chalcocite-Malachite ("Tommy") group. The writer infers, on admittedly sparse outcrop evidence, that the TOE group is entirely within the area of Nicola rocks.

The local intrusive rocks are granodiorites and quartz diorites, with local granitic phases. The Nicola rocks comprise andesitic flows and fragmentals, greywackes, and intergradational rock types. Wide sections of pyritiferous

argillite have been noted within the southwesterly parts of the group.

The sedimentary-volcanic rocks trend rather northerly, with steep dips, within the area southwest of Tommy Lake; eastward they are increasingly warped on more transverse trends - probably by reason of their proximity to the granite body and contact, and general involvement in the major transverse structure.

The principal zone of mineralization so far discovered - and within the Tommy group - consists of magnetite with subordinate chalcopyrite along a N-S fracture-shear zone in the Nicola rocks. Locally, the latter have been altered, with the development of chlorite, epidote, calcite, and garnet, etc. The H.N.-WEN chalcopyrite-bornite chalcocite occurrence lies within a steeply-dipping, northwesterly-trending fracture-shear zone. Numerous occurrences of fracture filling copper sulphide mineralization have been noted, in "granitic" and volcanic host rocks, throughout the group. Mineralization within the intrusive rocks is accompanied by bleaching, silicification, and kaolinization, with more or less (late) calcite veining.

RECENT EXPLORATION

1. Geological Mapping: This has been deferred in favour of a preliminary geochemical survey. However, some detailed mapping of the recent assessment trenching on the HN-WEN group, and of preliminary trenching elsewhere has been done by Mr. White.

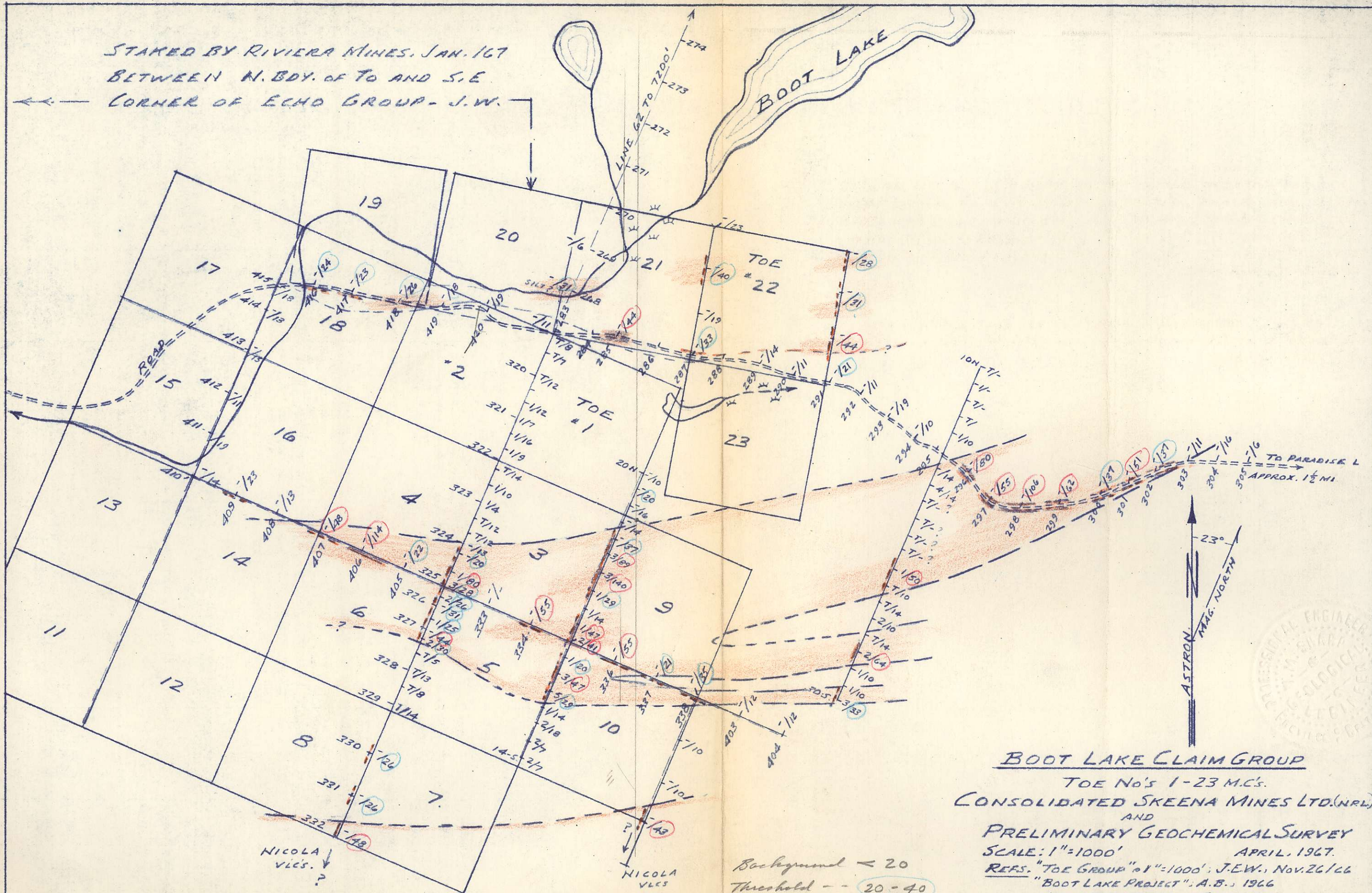
2. Geochemical Surveys: A preliminary, rough soil-sampling program was carried out during July-September, 1966, by A. Boettger and assistant. This was locally checked and/or detailed during the fall months on both the main ECHO and TOE groups. The results of the above preliminary investigations are summarized:

ECHO - HN-WEN:

(a) A generally anomalous NNW-trending zone, from the northerly HN workings and intermittently, through the west end of the ECHO block was partly delineated.

(b) The preliminary delineation of an easterly-trending copper anomaly across the ECHO claims at, and north of the intrusive-volcanic contact.

STAKED BY RIVIERA MINES. JAN. 1967
 BETWEEN N. BDY. OF T.O. AND S.E.
 CORNER OF ECHO GROUP - J.W.



BOOT LAKE CLAIM GROUP

TOE No's 1-23 M.C.'s.

CONSOLIDATED SKEENA MINES LTD.(NRL)

AND

PRELIMINARY GEOCHEMICAL SURVEY

SCALE: 1"=1000'

APRIL, 1967.

REFS. "TOE GROUP" 1"=1000'; J.E.W., NOV. 26/66

"BOOT LAKE PROJECT", A.B., 1966

ANALYTICAL REPORTS: BIO METALS, 1966

NOTATIONS:

1/55 = SCALED RUBENICS: 1-5 RANGE

271 = TOTAL P.P.M. Cu BY ATOMIC ABSORPTION

271 = SOIL SAMPLE No. 1 A.B. 1966 FIG. 5.

Background < 20

Threshold -- 20-40

Anom -- > 40

Bio Metals A.A. method
 (these results comparable to Barringer's)
 (but how consistent would they be in long run?)

TOE GROUP:

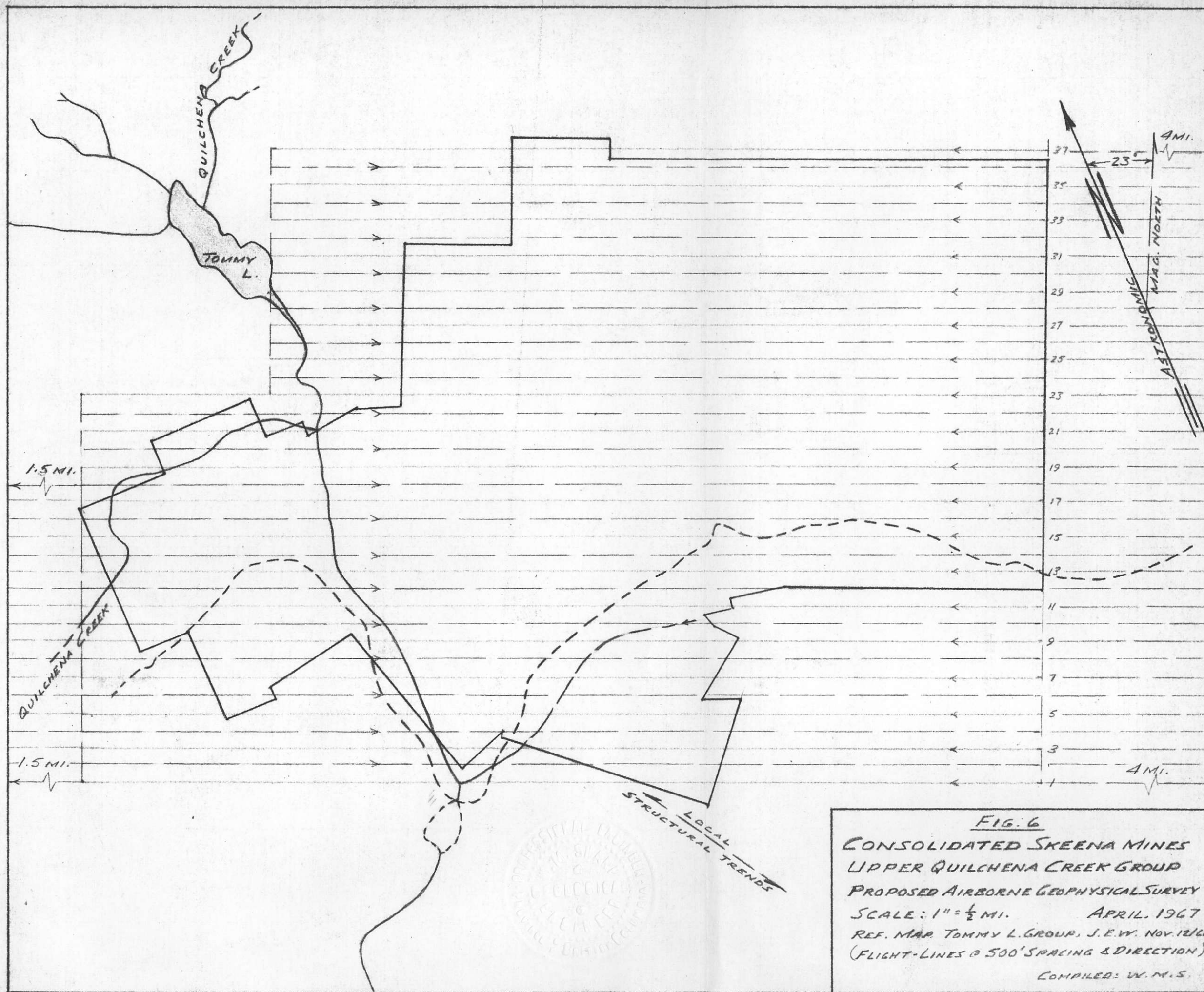
A distinct copper anomaly, ranging from 1000' to 1500' wide and with a general east-northeasterly trend across the mid-section of the group was defined. The extension of this has yet to be staked. The apparent length is about 5000 feet. Soil analyses range between 30 and 140 p.p.m. Cu against an average background of about 12 p.p.m. This constitutes the most significant indication of bedrock mineralization so far obtained on the property.

3. Trenching: This comprises assessment trenching on the HN-WEN group and exploration of occasional preliminary geochemically-anomalous localities at other parts of the group.

Respectfully submitted,



W.M. Sharp, P.Eng.



CERTIFICATE

I, William M. Sharp, with business address in Vancouver, British Columbia and residential address in North Vancouver, British Columbia, DO HEREBY CERTIFY THAT:

1. I am a consulting geological engineer.
2. I am a graduate of the University of British Columbia with B.A. Sc. (1945) and M.A. Sc. (1950) degrees in Geological Engineering.
3. I am a registered Professional Engineer in the Province of British Columbia.
4. I have practiced my profession since 1946, in both geological and managerial capacities with Canadian mining companies until 1964, when I established my own consulting practice.
5. I have personally examined the CANFORD and TOMMY LAKE PROPERTIES OF CONSOLIDATED SKEENA MINES LTD. (N.P.L.) and obtained and examined this company's technical records of exploration of both properties. In addition, I have referred to the Dominion and Provincial Government geological memoirs and reports relating the geology of the relative areas for the preparation of this report.
6. I have no interest, direct or indirect, in the properties or securities of CONSOLIDATED SKEENA MINES LTD. (N.P.L.), nor do I expect to acquire any such interest.
7. I have examined the survey records of both properties, as provided by the Company's field engineer, and note that all claim posts are independently surveyed or located with reference to a surveyed control grid; hence can state that the locations shown are essentially correct.

Respectfully submitted,

W. M. Sharp

W.M. Sharp, P.Eng.

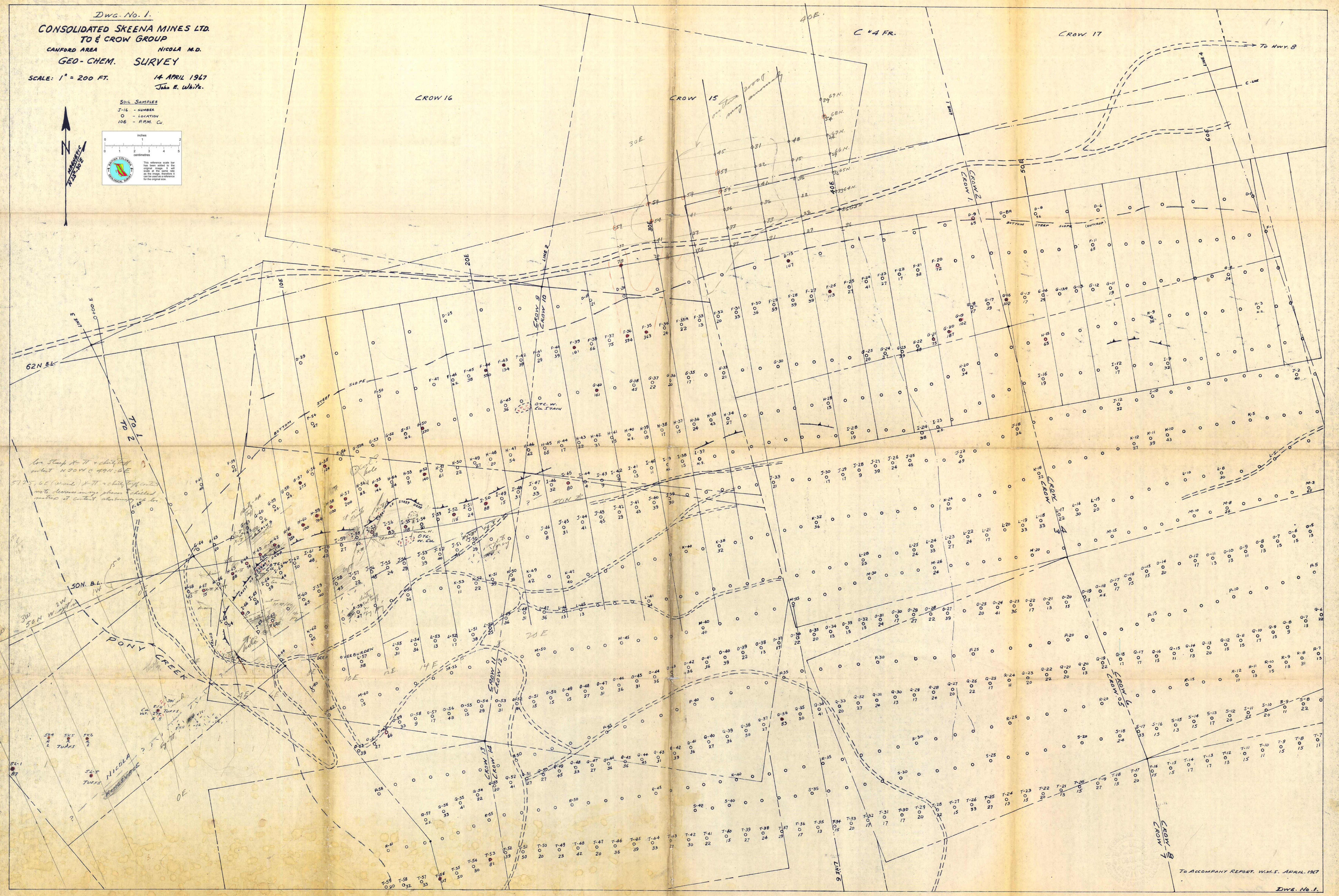
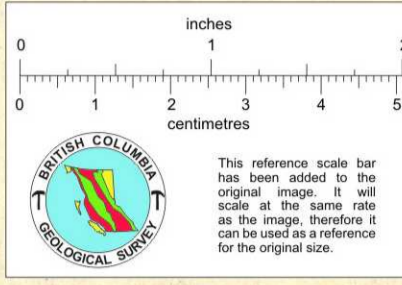
Vancouver, B.C.
April 30, 1967.

DWG. No. 1.
CONSOLIDATED SKEENA MINES LTD.
TO & CROW GROUP
CANFORD AREA NICOLA M.D.
GEO-CHEM. SURVEY

SCALE: 1" = 200 FT.
14 APRIL 1967
John E. White.

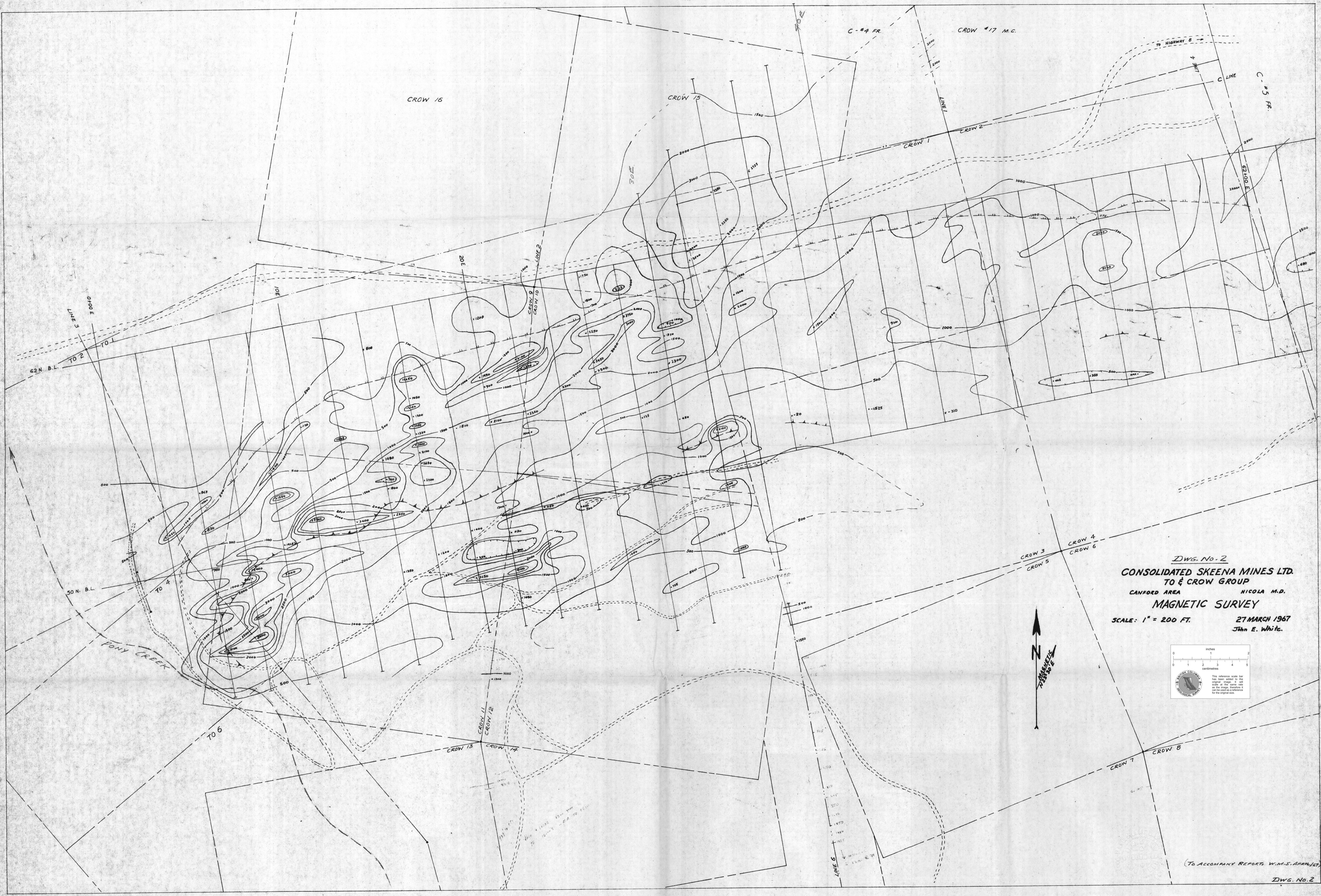
SOIL SAMPLES

J-16 - NUMBER
O - LOCATION
106 - RRM. CU.



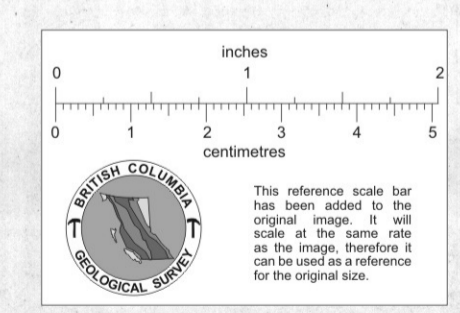
TO ACCOMPANY REPORT, W.M.S. APRIL 1967

DWG. No. 1.



DWG. No. 2
CONSOLIDATED SKEENA MINES LTD.
TO E CROW GROUP
CANFORD AREA NICOLA M.D.
MAGNETIC SURVEY

SCALE: 1" = 200 FT.
27 MARCH 1967
John E. White.



(To ACCOMPANY REPORT W.N.S. APRIL 1967)

DWG. No. 2

SKI GROUP (92N/16W)

RAY GROUP (92N/16W)

WART GROUP PER 92N/16W RECORD

TAG GROUP PER 92N/16W RECORD

BOOT LAKE CLAIMS

W. M. SHARP, P. Eng. CONSULTING GEOLOGICAL ENGINEER
808 - 900 W. HASTINGS ST., VANCOUVER 1, B.C.

CONSOLIDATED SKEENA MINES LTD. (N.P.L.)

PROPERTY: UPPER QUILCHENA CREEK GROUPS
TOMMY LAKE AREA - NICOLA MINING DIVISION

TITLE: CLAIMS, GEOLOGY, & SOIL - SAMPLING,
- PRELIMINARY SURVEY -

LEGEND:

- NICOLA ANDESITIC VOLCANICS
- GRANITE ROCKS
- RUPEANIC TOTAL CLIP
- CHRONOLOGICAL ZONES
- MAGNETIC ANOMALY
- TRENCH/DIAMOND DRILL
- FAULT ZONE

SCALE: 1 INCH = 1000 FT

DATE: APRIL 1967

DWN BY: W.M.S.

REFS: MIN. MAP 92N/16W

FIG. No. 3

Assessment:

August 16/67

Feb 1 - 60

Group I - 30 claims } \$ 6,000.00 for 1 year

Group II - 30 claims } Incl. $\frac{60}{105} \times 333.462 = 190.88$ } \$ 18.00 } per claim







Group I assess incl (a) gearham (wpt pending) --- \$ 1000.⁰⁰
30 days

(b) trenching --- \$ 2000.⁰⁰ * 3000

Group II assess incl (a) gearham (wpt pending) --- 900.⁰⁰

(b) trenching --- 2100.00 * 3000

W. M. SHARP, P.Eng.	CONSULTING GEOLOGICAL ENGINEER 808 - 900 W. HASTINGS ST., VANCOUVER 1, B.C.
<u>CONSOLIDATED SKEENA MINES LTD. (N.P.L.)</u>	
PROPERTY:	UPPER QUILCHENA CREEK GROUPS TOMMY LAKE AREA - NICOLA MINING DIVISION
TITLE:	CLAIMS, GEOLOGY, & SOIL - SAMPLING, - PRELIMINARY SURVEY -

 NICOLA ANDESITIC VOLCANICS.		 MAGNETIC ANOMALY (CARCASSITE - MAGNETITE CONG.)	
 GRANITIC ROCKS		 TRENCH / DIAMOND DRILL HOLE	
 RUBBING TOTAL CURIAL AMPHIBOLOUS ZONES		 FAULT ZONE / GEOL. CONTACT	
SCALE: 1 INCH = 1000 FT		DATE: APRIL 1967 DOWN BY: W.M.F.S.	
		I. WHITE, 21 NOV. 67 REF: 18 MAR. 28, NEW	
		DWG./FIG. NO. 3	

FIELD REF. SHEET

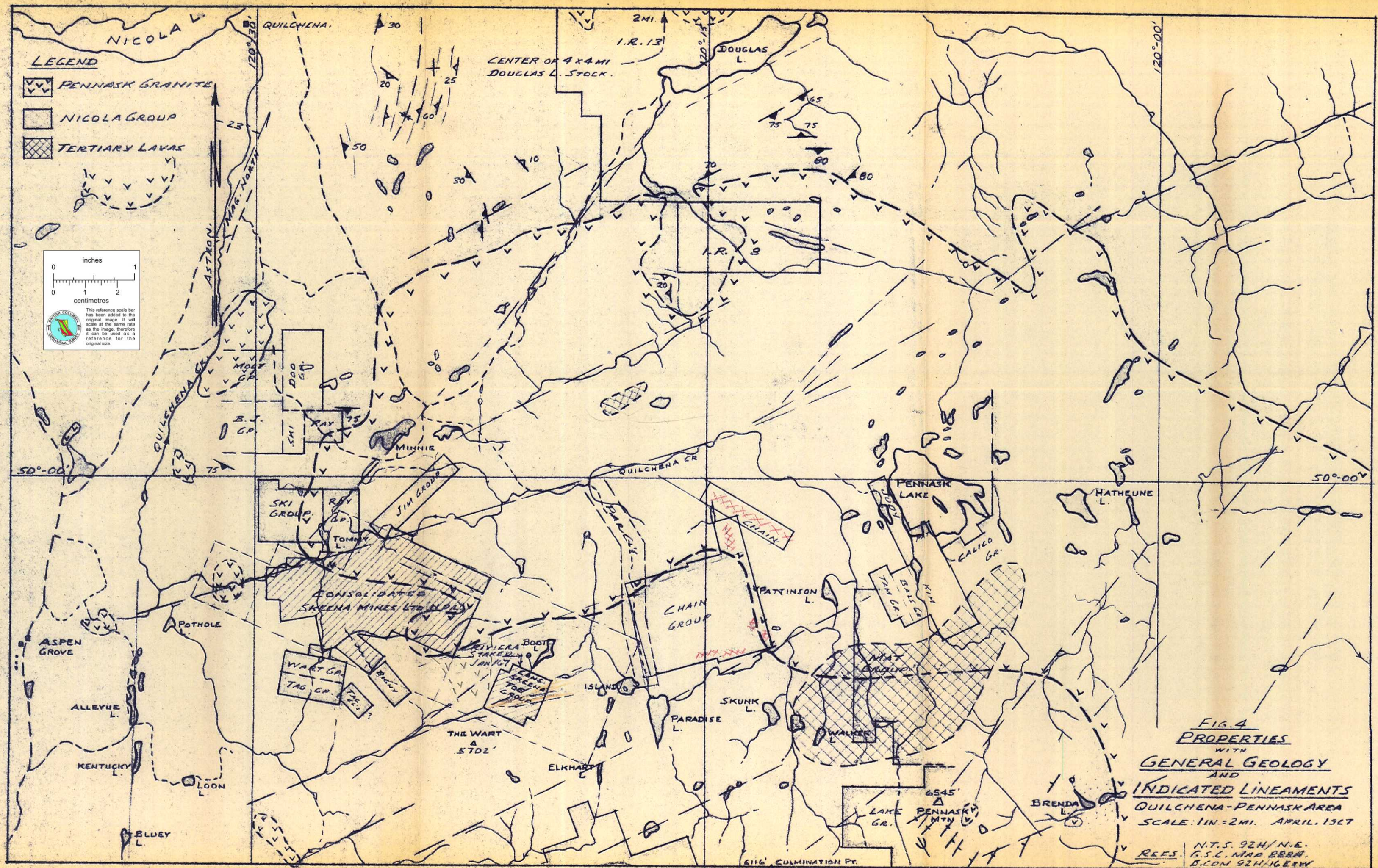


FIG. 4
PROPERTIES
WITH
GENERAL GEOLOGY
AND
INDICATED LINEAMENTS
QUILCHENA-PENNASK AREA
SCALE: 1 IN. = 2 MI. APRIL, 1967

REFS. N.T.S. 92H/N.E.
G.S.C. MAP 288A.
B.CON 92H/16ERW
W.M. SHARD.
FIELD REF. SHEET