



42L06NE0038 2.1010 O'SULLIVAN LAKE

010

GEOLOGICAL REPORT
ON THE
COPPER JIM GROUP OF CLAIMS
O'SULLIVAN LAKE AREA, ONTARIO

SEP 13 1972

PROJECTS
SECTION

Introduction

In August 1971, a geological mapping survey on a scale of 1 inch to 400 feet was completed on the 25-claim property of Amax Exploration, Inc., in the O'Sullivan Lake Area in the Thunder Bay Mining Division, Ontario. A more detailed survey on a 1 inch to 100 feet scale was carried out on three claims containing the main Copper Jim copper-silver showing, and on one claim with a gold showing.

The geological mapping followed a ground EM survey completed in March, 1971. The object of the survey was to correlate the EM conductors found in the previous survey with the geology and sulphide mineralization and to consider the feasibility of a drilling program.

Recommendations

Because of the presence of significant pyrrhotite-chalcopyrite-pyrite-malachite mineralization coincident with conductive area "A" of the report on the geophysical survey conducted by E.W. Bazinet, and dated March 20, 1971, a diamond drilling program is fully warranted to test these EM conductive areas.

It is therefore recommended that (a) 2760 feet of diamond drilling of the conductive areas "A" and "B" on the Copper Jim showing be immediately proceeded with.

The following diamond drill holes are suggested:

To test conductive area "A":

1. Collar: BL 0+00, 20' E of PL 00 at 2+20W
Bearing: S20°E; Dip: -60°
Length: 400'

This hole will cut across trench #7

2. Collar: BL 0+00, PL 3W at 3+20W
Bearing: S50°E; Dip: -45°
Length: 500'

3. Collar: BL 0+00, PL 1E at 3+60W
Bearing: S50°E; Dip: -45°
Length: 500'

4. Collar: BL 0+00, PL 4E at 4W
Bearing: S50°E; Dip: -45°
Length: 570'

5. To test Zone 2:

Collar: BL 0+00, PL 2E at 2+50S
Bearing: S50°E; Dip: -45°
Length: 220'

- and 6. To test conductive Area "B"

Collar: BL 30+00N, PL 4E at 500 feet south
Bearing: S50°E; Dip: -45°
Length: 575'

It is also recommended that:

- (b) a suitable type of magnetometer survey with the object of more detailed contours be carried out on the Copper Jim showing claims
- and: (c) a suitable type of induced polarization survey be executed on the property in which disseminated sulphides are prevalent in order to get better definition of the conductive areas.

Property

The property consists of twenty-five (25) contiguous unpatented claims in the O'Sullivan Lake Area, Thunder Bay Mining Division, Ontario, covering approximately 1000 acres. They are all registered with the Ontario Department of Mines as follows, and are shown on the accompanying map:

299530	300970
299531	300971
299772	307405
299773	307406
293535	307407
293536	307589
293537	307607
300964	307608
300965	307609
300966	307610
300967	307611
300968	307612
300969	

Location and Access

The claim group is situated on the north shore of the north-east arm of O'Sullivan Lake, approximately twenty miles northwest of Nakina, a divisional point on the CN Mainline and a float plane base.

A gravel road runs north from Cavell, a flag station fifteen miles west of Nakina, and passes close to the west shore of O'Sullivan Lake. From there it is about 7 miles east to the property.

Previous Work

A considerable amount of diamond drilling preceded by trenching and a ground EM and a magnetometer survey, were done on the Copper Jim claim group in 1955.

In 1946 and 1947, work was also done on the gold showing 3/4 mile east of Pelangio Point. It included stripping, trenching and diamond drilling.

Several geological and geophysical reports and logs of the diamond drill holes are available in the assessment files of the Ontario Department of Mines.

Topography and Drainage

There is adequate rock exposure. Relief is generally less than 100 feet above lake level. Cedar swamp and muskeg are interspersed with low hills. Drainage is generally good.

General Geology

The 25-claim property consists mainly of rocks of volcanic origin dominated by pillow and massive lavas of variable composition and which form the oldest rocks in the area. These older volcanics are intruded by quartz 'eye' and quartz-feldspar porphyry. Granite, meta-diorite and metadiabase occur as minor intrusives into the volcanic rocks.

There is significant pyrrhotite-chalcopyrite-pyrite mineralization with good copper-silver values associated with zones of altered pillow lavas and pyrite mineralization with low gold values in the schistose quartz 'eye' and quartz-feldspar porphyries.

Sparsely disseminated pyrite is common in all volcanic rocks of this area.

Most of the volcanics and porphyries in the area have been sheared.

A strong shear is located on a point 3/4 mile east of Pelangio Point, in the southwest corner of the group of claims.

The bedrock of Precambrian age is overlain generally by thin Pleistocene glacial fill and recent swamp deposits. On the southwest border of the claims, the accumulation of drift is thicker where it flanks the Pelangio Point esker.

The following table of formations covers the rock types mapped in the area:

1. Basic and Intermediate Volcanic Rocks

- (a) Pillow lava - andesitic
- (b) Pillow lava - undifferentiated
- (c) Andesite, porphyritic or massive lava
- (d) Andesite, carbonated, schistose or silicified

2. Acid Volcanic Rocks

- (a) Pillow lava - dacitic
- (b) Dacite, massive lava
- (c) Dacite, carbonated or sheared
- (d) Rhyolite, massive lava, tuff, sheared, carbonated

3. Porphyry

- (a) Quartz 'eye' porphyry and quartz-feldspar porphyry
- (b) Sheared quartz 'eye' or quartz-feldspar porphyry, carbonated, schistose

4. (a) Metadiorite

- (b) Metadiabase or "diorite"

5. (a) Granite, quartz monzonite and granodiorite

A detailed megascopic description of the above rock types follows:

(1a) Pillow lava - andesitic, is a fine-grained to aphanitic rock, pale buff and spotted pale green on the weathered surface, and pale green to dark grey on the fresh.

The pillows are usually either deformed or obscured by close jointing. They are variable in size, ranging on an average from about 6 inches long to 4 - 5 feet maximum. The small pillows are usually ovoid to balloon-shaped and the larger ones tend to be ellipsoidal or loaf-shaped. Top determinations made from the pillows were found to be inconsistent and unreliable.

Although andesitic pillow lava outcrops in all parts of the mapped area, their frequency of occurrence is much less than that of the dacitic pillow lavas.

(1b) Pillow lava, undifferentiated, is a rock type which has recognizable pillow structure but the composition is difficult to determine in hand specimen.

On the whole, contacts between pillow lavas and other volcanic rocks are very obscure and can only be delineated approximately in outcrop.

(1c) Andesite, porphyritic or massive lava is distinguished by its lack of pillow structure.

In porphyritic andesite, the dominant phenocrysts are hornblende or feldspar. Flow texture is clearly noticeable in many outcrops of porphyritic and massive andesite lava. Both types are well jointed as a rule.

(1d) Andesite, carbonated, schistose or silicified is a well altered phase of andesitic pillow or massive lava. It is usually found in the well mineralized zones.

(2a) Pillow lava - dacitic is the most common of the pillow lavas in the claim group. It is generally more siliceous and has less mafic content than the andesitic lavas.

(2b) Dacite, massive lava, is usually structureless except for jointing and occurs in almost equal proportion to the dacitic pillow lava.

(2c) Dacite, carbonated or sheared, is confined to certain well mineralized areas of the volcanic sequence.

(2d) Rhyolite, massive lava, tuff or sheared and carbonated is much less in its frequency of outcrop than either the dacitic or andesitic rocks.

The rhyolite is usually buff-weathered and pale grey on the fresh surface. In some cases, it is carbonated and sheared.

Two outcrops of rhyolitic tuff were observed and these are both in sharp contact with dacitic pillow and massive lava. One contact is gradational and the tuff itself consists of layers up to 5 feet wide with fragments of quartz 1/16" to 1/8" alternating with carbonate-quartz-chlorite

schist, 10-foot wide layers which strike N35°E and dip 85°SE.

The other contact is sharp and the tuff is cut by quartz 'eye' feldspar porphyry and is interlayered with dacitic pillow lava. The tuff is composed of 1" - 2" layers of schist with massive carbonated rhyolite in 2" - 4" layers.

The rhyolite is often associated with a concentration of pyrrhotite - pyrite mineralization.

(3a) Quartz 'eye' porphyry and quartz-feldspar porphyry is widespread throughout the claim group and range in size from small narrow dikes only a few feet wide to large dikes and irregular bodies, 100 to 300 feet wide.

The quartz 'eye' porphyry usually consists of clear glassy quartz phenocrysts, 1/32" to 1/8" in diameter, forming 10% to 25% of a felsic matrix.

The quartz-feldspar porphyry has feldspar phenocrysts predominant over quartz. All the porphyries are in sharp intrusive contact with the volcanics. They are usually light buff on the weathered surface and light grey on the fresh.

(3b) Sheared quartz 'eye' or quartz-feldspar porphyry, schistose, carbonated, is a sheared variety of (3a). It is usually well carbonated, schistose and pyritiferous. The pyrite is usually in cubes. Pseudomorphs of quartz after pyrite are prevalent in some outcrops.

(4a) Metadiorite occurs sporadically throughout the volcanic flows. It is difficult in some outcrops to differentiate the fine-grained metadiorite from a coarser-grained phase of andesitic massive lava.

(4b) Metadiabase or "diorite" occurs as dikes in the east corner of the group of claims where it intrudes carbonated pillow lava.

(5a) Granite, quartz monzonite or granodiorite outcrops as a small stock at baseline 0+00, picket line 00, between 20N and 25N.

The granite is massive, usually medium-grained and buff-coloured on the weathered surface. The contact is sharp and intensive into andesitic pillow and massive lava.

Folding

All volcanic rocks in the area dip steeply and therefore indicate the effect of strong folding.

The general strike of the layering of the pillow lavas is 050° to 070° and the dips average 80° NW to vertical. Schistosity is about 075° strike and 70° NW dip.

There is a well developed fracture pattern in the volcanics and particularly in the pillow and massive lavas. Five prominent joint sets are found. The trends are thus:

$S15^{\circ}E \quad +10^{\circ}$
 $S45^{\circ}E \quad +5^{\circ}$
 due East $+5^{\circ}$
 due North $+10^{\circ}$
 and $N40^{\circ}E \quad +15^{\circ}$

A more detailed analysis of the fracture pattern may prove useful since sulphide mineralization is concentrated in closely jointed pillow lavas.

Shearing

There is intense shearing both in the pillow lavas and in the quartz 'eye' and quartz-feldspar porphyries.

Shearing in the lavas usually strike about 040° to 050° . Shears measured at two outcrops of sheared porphyry strike 110° near the East edge of the claim group, and almost 180° at the southwest corner of the group on the pyrite - gold showing.

All the mineralized porphyries are intensely sheared.

Mineralization

In general the sulphide mineralization is of three types. The first type is disseminated pyrrhotite-pyrite-chalcopyrite which yield good copper-silver assays and is usually found in carbonated, sheared or silicified pillow lavas of andesite, dacite or rhyolite composition but especially of the second type.

The main modes of occurrence are:

(a) Mineralization is concentrated in fractures in the selvages of closely jointed pillows of the lavas. The sulphides decrease in concentration away from the actual joints. Many of the joints are quartz or carbonate filled.

(b) in small veins varying in width from less than one foot to a maximum of five feet

(c) in shears of carbonate-sericite schist in sheared pillow or massive lava

and (d) in disseminations of low percentage in the matrix of the altered lavas

The second type is well disseminated pyrrhotite-pyrite-chalcopyrite in sheared, often carbonated quartz 'eye' or quartz-feldspar porphyry schist.

The third type is pyrite-carbonate mineralization which assays low gold values and is found in sheared, schistose, carbonated quartz 'eye' porphyries.

Trenches, rust weathered zones and well mineralized outcrops of the first and second types of mineralization show good correlation with the ground EM conductive area "A" delineated in E.W. Bazinet's map and report dated March 20, 1971.

A large outcrop of rust weathered pillow lava (andesite and undifferentiated), contains well disseminated pyrrhotite and pyrite near intrusive granite contacts. It lies only 200 feet southwest from unexposed conductive area "B" of the above-mentioned report.

Two well mineralized zones of sulphides outcrop on the Copper Jim Showing claims.

The first called Zone 1, is about 400 feet wide and 700 feet along strike and is concentrated from baseline 0+00 to 650 feet north of it between picket lines 4W and 1E.

There are six large trenches, several pits and gossans in this zone.

A contact was delineated on picket line 4W on the showing 5N to 8N, between the sheared carbonated pillow lava which is well mineralized with disseminated pyrrhotite-chalcopyrite-pyrite and the porphyritic and massive lava which has cubes of pyrite sprinkled sparsely through its matrix.

The second called Zone 2, lies south of baseline 0+00 between picket lines 3W and 3E and is at least 150 feet wide where exposed. There are three large trenches and several pits in this zone.

A brief detailed description follows of the nine old trenches on the Copper Jim Showing and on one old trench on the gold showing 3/4 mile east of Pelangio Point.

In addition, a small shear just off the east boundary of our claim group is described.

Zone	Trench	Location	Asimuth	Size	Mineralization	Mode of Occurrence
1	1	BL 0+00 25' W of PL 4W 5+40N to 5+60N	350°	L-20' W-10' D-5' average	Moderately disseminated Po-Cr-Py	Moderately to sparsely disseminated Po-Cr in 5:1 ratio and minor Py in cubes occur mainly in joints with calcite-actinolite schist gangue in a carbonated well jointed dacite pillow lava cut by quartz 'eye' porphyry and quartz veins. Py is scattered throughout the matrix. The mineralization is concentrated in a shear zone striking N42°E and dipping 78°N.
1	2	BL 0+00 15' W of PL 4W 5+80N to 6+00N	315°	L-20' W-5' D-5' average	as in (1) above	As in (1) above
1	3	BL 0+00 30' W of PL 4W 6+25N to 6+45N	335°	L-20' W-5' D-3.5' average	as in (1) above	As in (1) above
1	5	BL 0+00 5' W of PL 1W 1+85N to 2+05N	310°	L-20' W-10' D-4'	Heavily disseminated to massive Po-Cr with malachite and minor Py heavily rusted	In fractures of selvages in carbonated undifferentiated pillow lava. Fractures are usually quartz filled.
1	7	BL 0+00 25' W of PL 00 1+20N to 2+20N	320°	L-100' W-15' D-6' average	Heavily disseminated to massive Po-Cr-Py	Massive or heavily disseminated Cr-Po-Py is mainly concentrated in selvages of dacite pillow lava especially in fractures. Mineralization spreads out from the joints. There are also stringers of Cr-Cr-Py and sporadic vugs of comb. quartz with Py. The dacite is carbonated in places.

Zone	Trench	Location	Azimuth	Size	Mineralization	Mode of Occurrence
1	8	BL 0+00 10' W of PL 1E 2+20W to 2+35W	230°	L-20' W-10' D-1' to 10'	Well disseminated Po-Cp-Py-mala- chite	Well disseminated Po-Py-Cp-malachite occurs in a vein in a shear of carbonate schist. Vein is 1' to 6' wide from east to west. Footwall of the vein strikes 050° and dips 65°N. Laces and stringers of pyrite also occur in quartz-filled joints.
2	4	BL 0+00 PL 2W 3+60S to 3+80S	324°	L-20' W-10' D-4'	Py - disseminated and in cubes	Finely disseminated Py mainly in cubes in a sheared, schistose quartz 'eye' porphyry.
2	6	BL 0+00 5' W of PL 1W 3+30S to 3+40S	310°	L-15' W-5' D-4'	Py - sparsely disseminated and in cubes	Py mainly in cubes, sparsely dissemin- ated in sheared schistose quartz 'eye' porphyry
2	9	BL 0+00 PL 2E 3+50S to 3+80S	335°	L-30' W-2.5' D-2.5'	Py-Cp - poorly disseminated	Poorly disseminated Py-Cp in andesitic to rhyolitic pillow lava, schistose and slightly carbonated; also partly siliceous Schistosity has N75°E strike and 70°N dip
-	10	BL 0+00 80' W of PL 20W 8+15N to 8+30N	335°	L-20' W-6' D-3'	Py - mainly in cubes and slightly dis- seminated	Slightly disseminated pyrite mainly in cubes in talc-carbonate-quartz- sericite-chlorite schist, with quartz pseudomorphs after pyrite. Mineral- ization is confined to a shear strik- ing N25°W in a 150' wide gossan in severely sheared and highly crenulated quartz 'eye' and quartz-feldspar porphyry. Schistosity strikes N60°W and dips 76°N. Quartz veinlets with lineation of 085° to 110° and 70°N dip cut across the schistosity.

Trench	Location	Size	Mineralization	Mode of Occurrence
Shear	Claim 307590 BL 1A 40'W of PL 18W 4+50N to Lakeshore at 4+40N	Gossan is 40' long 20' wide	Po-Cp-Py - well disseminated	Disseminated Po-Cp-Py is mainly in joints in a sheared schistose quartz 'eye' feldspar porphyry. Po:Cp is in a ratio of 4:1. Joints are 1' wide and filled with quartz-feldspar- carbonate-sericite schist displaced by a shear striking 110° and dipping 84°NW. Schistosity strikes N20°E and dips 70°NW.

KEY

BL - baseline

PL - picket line

L - length

W - width

D - depth

Po - pyrrhotite

Py - pyrite

Cp - chalcopyrite

Conclusions

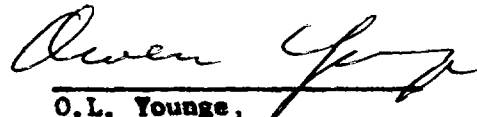
There are two zones of well disseminated pyrrhotite-chalcopyrite-pyrite mineralization with significant copper-silver values in the Copper Jim Showing. There is coincidence of Zone 1, north of Baseline 0+00, with conductive area "A" in the map and report on the geophysical survey, by E.W. Bazinet, dated March 20, 1971.

This mineralization is usually concentrated in (a) sheared, carbonated and well jointed pillow lavas which are mainly dacitic and (b) schists derived from intense shearing of quartz 'eye' porphyry and quartz-feldspar porphyry.

Conductive area "B" of the same report lies in muskeg but 200 feet southwest along strike, there is a large outcrop area of andesitic and undifferentiated pillow lavas which are heavily rust-weathered in places and contain well disseminated pyrrhotite and pyrite. The mineralization is close to intrusive granite contacts.

Thunder Bay (P), Ontario,
September 9, 1971.

Respectfully submitted,


O.L. Younge,
Geologist.

ASSESSMENT WORK DETAILS



42L06NE0038 2.1010 O'SULLIVAN LAKE

900

Type of Survey Geological

A separate form is required for each type

Township or Area O'Sullivan Lake

Chief Line Cutter _____
or Contractor _____ Name _____

Address _____

Party Chief Owen Younge, Name _____

Address _____

166 Metcalfe Ave., GARSON, Ontario.

Address _____

Consultant _____ Name _____

Address _____

Geological field mapping by Owen Younge, Name _____

Address _____

166 Metcalfe Ave., GARSON, Ontario

Address _____

COVERING DATES

Line Cutting _____

Field August 3-23, 1971

Instrument work, geological mapping, sampling etc.

Office _____

INSTRUMENT DATA

Make, Model and Type _____

Scale Constant or Sensitivity _____

Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count _____

Number of Stations Within Claim Group _____

Number of Readings Within Claim Group _____

Number of Miles of Line cut Within Claim Group _____

Number of Samples Collected Within Claim Group _____

CREDITS REQUESTED

20 DAYS per claim

40 DAYS per claim

----- Includes (Line cutting)

Geological Survey

Geophysical Survey

Geochemical Survey

Show Check

DATE Oct. 5, 1971 SIGNED _____

Qualifications: 63A.519

Performance and coverage credits do not apply to airborne surveys

MINING CLAIMS TRAVERSED
List numerically

<u>TB.</u> 299530 - 20
299531 - 20
300964 - 20
300965 - 20
300966 - 20
300967 - 20
300968 - 20
<u>300969</u> - 20 <u>Not covered</u> <u>No. credits</u>
300970 - 20
300971 - 20
307405 - 20
307406 - 20
307407 - 20
307589 - 20
307607 - 20
307608 - 20
307609 - 20
307610 - 20
307611 - 20
307612 - 20 <u>20</u>
TOTAL CLAIMS <u>17</u>

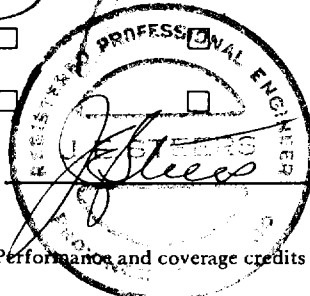
If space insufficient, attach list

Send in Duplicate to:

FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES &
NORTHERN AFFAIRS
WHITNEY BLOCK
QUEEN'S PARK
TORONTO, ONTARIO

RECEIVED
SEP 15 1972

PROJECTS SECTION



SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS
AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

- (a) substantial and systematic coverage of each claim
- (b) line spacing not exceeding 400 foot intervals
- (c) stations not exceeding 100 foot intervals or
- (d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

ASSESSMENT WORK DETAILS

Type of Survey Geological
A separate form is required for each type of survey

Township or Area O'Sullivan Lake

Chief Line Cutter or Contractor _____
 Name _____
 Address _____

Party Chief Owen Younge,
 Name _____
166 Metcalfe Ave., GARSON, Ontario.
 Address _____

Consultant _____
 Name _____
 Address _____

Geological field mapping by Owen Younge,
 Name _____
166 Metcalfe Ave., GARSON, Ontario
 Address _____

COVERING DATES

Line Cutting _____

Field August 3 - 23, 1971
Instrument work, geological mapping, sampling etc.

Office _____

INSTRUMENT DATA

Make, Model and Type _____

Scale Constant or Sensitivity _____
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count _____

Number of Stations Within Claim Group _____

Number of Readings Within Claim Group _____

Number of Miles of Line cut Within Claim Group _____

Number of Samples Collected Within Claim Group _____

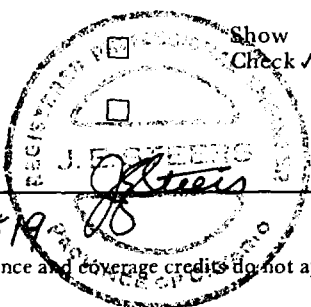
CREDITS REQUESTED

20 DAYS per claim 40 DAYS per claim ----- Includes (Line cutting)

- Geological Survey
- Geophysical Survey
- Geochemical Survey

DATE Oct. 5, 1971 SIGNED _____

Qualifications: G3A.51A
Performance and coverage credits do not apply to airborne surveys



SPECIAL PROVISION CREDITS
 for
 PERFORMANCE & COVERAGE

MINING CLAIMS TRAVERSED
 List numerically

279530	-	20
279531	-	N11
300964	-	N11
300965	-	N11
300966	-	20
300967	-	20
300968	-	N11
300969	-	N11
300970	-	20
300971	-	N11
307405	-	N11
307406	-	20
307407	-	20
307589	-	N11
307607	-	20
307608	-	20
307609	-	20
307610	-	20
307611	-	20
307612	-	20

TOTAL CLAIMS 12

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 DEPARTMENT OF MINES &
 NORTHERN AFFAIRS
 WHITNEY BLOCK
 QUEEN'S PARK
 TORONTO, ONTARIO

If space insufficient, attach list

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- (a) substantial and systematic coverage of each claim
- (b) line spacing not exceeding 400 foot intervals
- (c) stations not exceeding 100 foot intervals or
- (d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

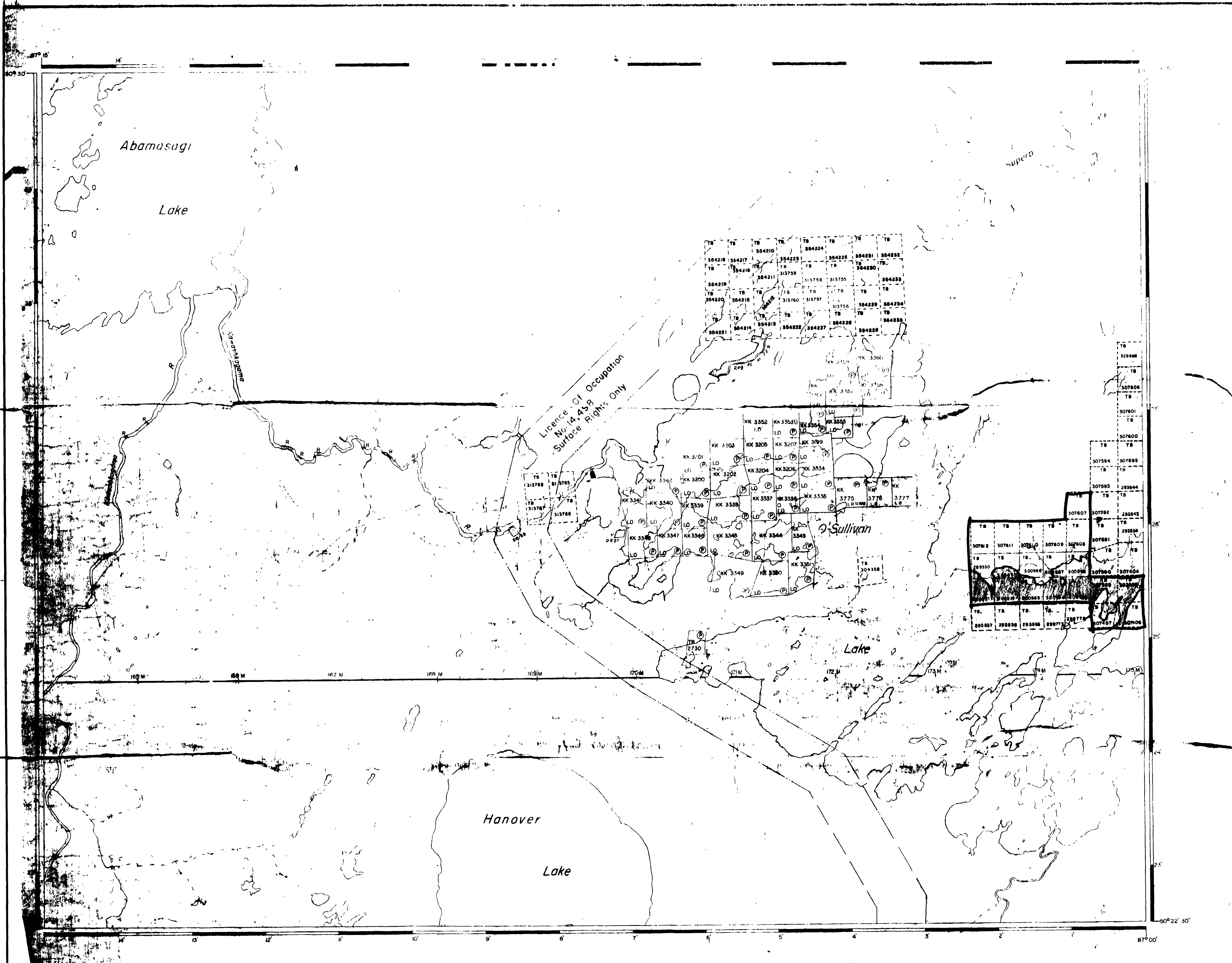
Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

CIAI.



AREA OF 2.1010

O'SULLIVAN LAKE

DISTRICT OF THUNDER BAY

THUNDER BAY MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	⊙
CROWN LAND SALE	C.S.
LEASES	⊖
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKEG	—
MINES	—
CANCELLED	—

NOTES

400' surface rights reservation, around all lakes and rivers

DATE OF ISSUE

SEP 15 1972

ONT. DEPT. OF MINES AND NORTHERN AFFAIRS

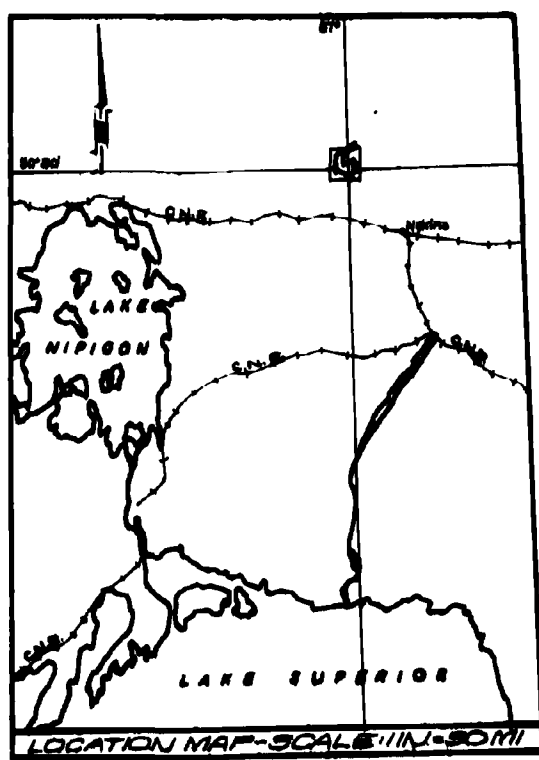
2.1010

NATIONAL TOPOGRAPHIC SERIES 42L

PLAN NO. **M.1415**

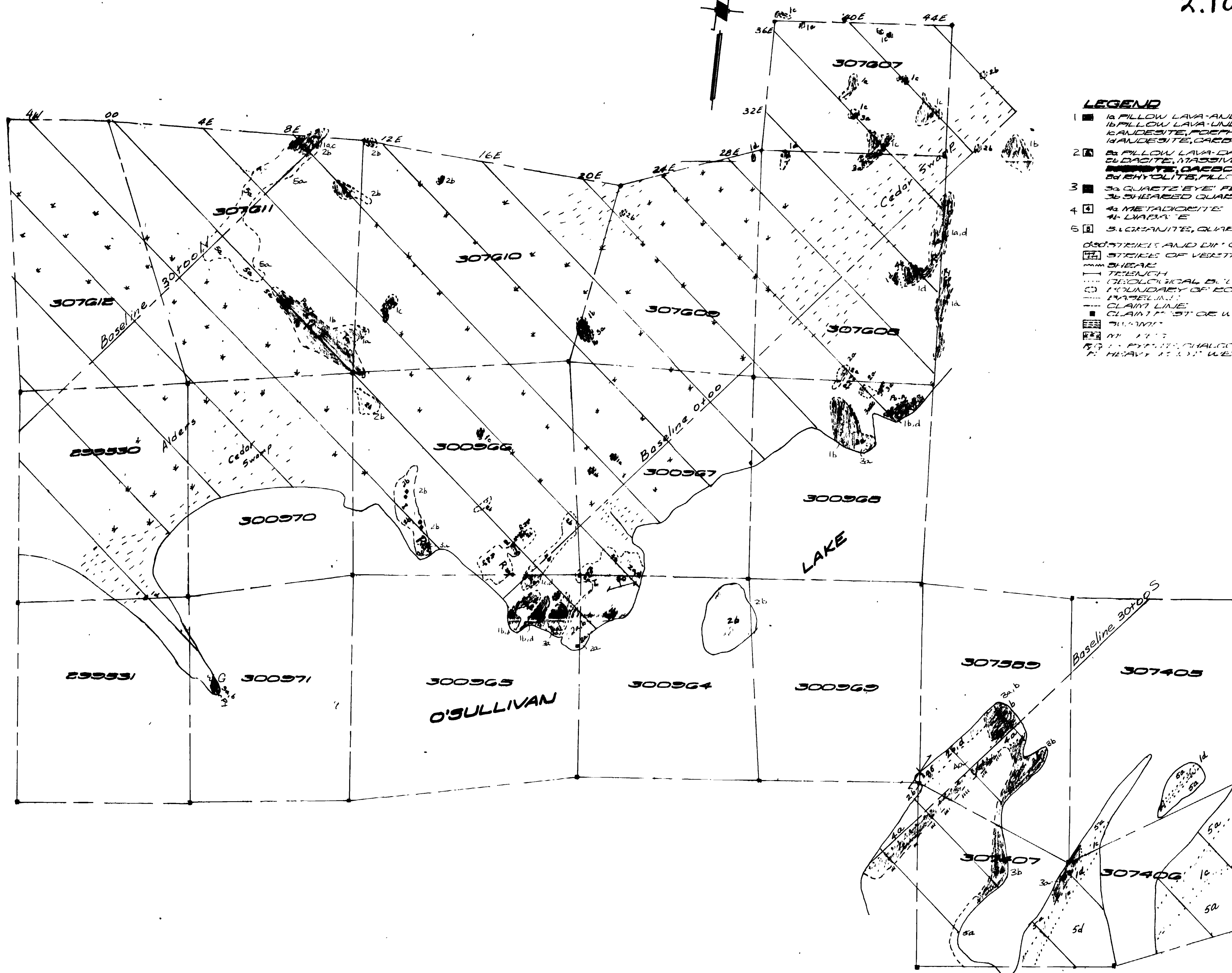
ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS





**COPPER JIM
SHOWING
O'SULLIVAN LAKE
ONTARIO**
SCALE: 1 INCH = 400 FEET
MAPPED BY: O.L. YOUNG
DATE: AUGUST, 1971

2.1010



LEGEND

- 1 ■ 1a FILLOW LAVA-ANDESITE
1b FILLOW LAVA-UNDIFFERENTIATED
1c ANDESITE, POEPHYRITIC, GNEISSIC OR MASSIVE
1d ANDESITE, CARBONATED, SCHISTOSE OR SILICIFIED
 - 2 ■ 2a FILLOW LAVA-DACITE
2b DACITE, MASSIVE OR GNEISSIC
2c RHYOLITE, CARBONATED, SHEARED
2d RHYOLITE, FLOW LAVA, MASSIVE, SHEARED OR CARBONATED
 - 3 ■ 3a QUARTZ 'EYE' FELDSPAR POEPHYRY
3b SHEARED QUARTZ 'EYE' POEPHYRY, SCHISTOSE
 - 4 ■ 4a METADIORITE
4b DIABASE
 - 5 ■ 5a GRANITE, QUARTZ MONZONITE OR GRANODIORITE
- 65° STRIKE AND DIP OF SCHISTOSITY
 75° STRIKE OF VERTICAL SCHISTOSITY
 --- SHEAR
 --- TRENCH
 --- GEOLOGICAL BOUNDARY
 ○ BOUNDARY OF EDGE OUTCROP
 --- WATER LINE
 --- CLAIM LINE
 ■ CLAIM POST OF WATKINS MINE
 ■ TOWN
 ■ ADLERS
 ■ PYRITE, CHALCOPYRITE, PYRRHOTITE
 ■ HEAVY METAL WEATHERING



Owen Young
August 27, 1971