GEOLOGICAL REPORT
ON

THOMPSON CLAIMS

ROSNEL SIDING

SHARRON LAKE AREA

PATRICIA MINING DIVISION

DISTRICT OF KENORA

BY

ASARCO EXPLORATION COMPANY OF CANADA LIMITED

TORONTO, ONTARIO

October 1971

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Introduction

This report describes the geology and mineral showings of the enlarged Rosnel Siding Group of claims owned by Asarco Exploration Company of Canada Limited. A previous report covers claims PA44954, PA44957, PA272336, PA272338, PA272342, PA272343, PA272344, PA272345, PA272349, PA272350, PA272351, and PA275370 all of which claims were mapped in the fall of 1970. Assessment credits for these claims have already been obtained, and the present report describes additional mapping which covers claims PA262648, PA272085-PA272093 inclusive, PA272337, PA272339-PA272341 inclusive, PA272343, PA272346, PA272348, PA272352,- PA272360 inclusive, and PA275371. Coverage of the original claims is shown on the attached map merely to provide a complete and more convenient geological record of the area.

The claim group is situated some 16 miles to the east of Sioux Lookout, on the main line of the C.N.R. and is centered around the abandoned Rosnel Siding Station on the south shore of Botsford Lake. The easiest access is by float plane from Sioux Lookout or by boat either directly from Sioux Lookout or from Superior Junction

Geological and geophysical surveys were conducted over part of the property during the latter part of September 1970 by Abolins and Dean (see Report dated Dec. 1970) Two diamond drill holes were drilled in May 1971 to test a mineralized shear zone. Further geological mapping was carried out in August 1971, by the writer and by the two graduate students M. Pickford and G. Covey. The line cutting and mapping were done at a line spacing of 400 feet, except in the centre portion of the property where some lines were put in at 200 foot spacing.

All the rocks in the area are of Pre-cambrian age and most are extremely altered and sheared. They consist of acid to basic meta-volcanic flows and tuffs, and are largely intercalated and interfingered. The interfingering is most likely due to folding and faulting. The greenstones are intruded by a complex quartz diorite which in turn is intruded by granitic rocks. Tetrahedrite, pyrite, chalcopyrite and galena mineralization were noted in some of the sericitic schists, usually associated with quartz-carbonate veining. Scattered pyrrhotite, pyrite, and chalcopyrite were noted in some quartz-diorite outcrops.

The area has a previous exploration history as old picket lines were observed in the south part and numerous trenches were found. Most of the trenches appear to have been blasted to test gold bearing quartz veins. Also a diamond drill hole was drilled in 1965 to intersect a gold-silver bearing shear zone in a sericite schist. Abundant mineralization was found throughout the area, but nowhere in economic quantities.

The topography of the area is quite varied as there is an abrupt rise of 200 to 300 feet adjacent and south of the railroad tracks from Botsford Lake. At the top of this rise the terrain levels off and is fairly flat. It is covered with several large areas of deciduous and spruce forests. There is also a large cedar swamp between the base line and Black Lake. The deciduous forest is generally of mature growth, consisting of birch and poplar, up to three feet in diameter, and frequently interspersed with large black spruce, and scrub maple, hazelnut, and tagalder undergrowth. This mature forest is generally found north of the base line and here, there is a generally better than 50% exposure of bedrock. South of the baseline there is generally poor bedrock exposure as the area is one of cedar swamp and thin spruce and balsam forest with occassional patches of mixed bush.

General Geology

All bedrock in the map area is Pre-cambrian. In general these rocks are intercalated and folded bands of Archean metavolcanics which are intruded by quartz diorite-granite mass to the east and south. The metavolcanics are extremely altered, sheared, folded and probably faulted.

TABLE OF FORMATIONS

Cenozoic

Recent: Swamp and stream deposits
Pleistocene: Sand, clay, and till

Unconformity

Pre-cambrian

Intrusive Rocks: Granite
Intrusive contact
Quartz diorite
Intrusive Contact
Metavolcanics (relative ages unknown)

Partly Intercalated

Intermediate to Basic Metavolcanics: Massive greenstone, tuff, amygdaloidal lava, schistose greenstone, and chlorite schist.

Intermediate Metavolcanics: Carbonitized massive dacite

Acid Metavolcanics: Massive rhyolite carbonitized quartz-eye sericite schist, tuff, altered and chloritized schist.

Metavolcanics

The metavolcanics of the map area have been divided into three major units: intermediate to basic, intermediate, and acid. The acid and intermediate metavolcanics are in part intercalated and are extremely altered, and it is therefore difficult to divide them into the three major units.

Intermediate to Basic Metavolcanics

The main types of metavolcanics of this group are: massive andesite, tuff, amygdaloidal lava, and schistose greenstone and/or chlorite schist. These basic rocks are generally medium to dark green. Carbonitized rocks are very striking in appearance as they carry orange-orange red carbonate phenocrysts. Some of the massive greenstone outcrops are very altered and granular and appear to have been of a diabasic texture. Many of the andesitic rocks have been carbonitized and carry 2-5% iron carbonate. A few outcrops of a tuffaceous nature were noted, but these invariably occurred adjacent to chlorite schists. Chlorite schists of apparent andesite tuff origin were also observed intercalated with the quartz-eye sericite schists. Samples collected from few outcrops of an amygdaloidal basaltic andesite contain an average of 46.68% SiO_2. These rocks are generally quite massive and striking in appearance on a fresh surface, being a brilliant dark green with white calcite amygdules. If one takes into account the carbonitization, the true silica percentage would probably be quite close to that or andesite composition. The amygdules frequently carry pyrite and chalcopyrite.

Intermediate Metavolcanics:

These rocks are generally aphinitic to fine grained, pale buff to light grey in colour, usually with a semi-conchoidal fracture, and are extremely carbonitized. They appear to have a composition

anywhere from dacite to rhyodacite. They are usually quite massive. They were only found in the central portion of the map area.

Acid Metavolcanics

These rocks generally have been so altered by shearing, sericitization and carbonitization that they are now classed as carbonitized quartz-eye sericite schists. In places the shearing has been so intense that there are no or very few quartz-eyes remaining. Some of the outcrops grouped with the acid metavolcanics were found to be chloritized and basic in appearance, but a careful search of the outcrop usually revealed an identifiable sample or some quartz-eye remnents. These chloritized outcrops plus the intercalated basic outcrops made it quite difficult to break down the rock types. These rocks are generally a light buff to orange buff in colour with patches of pistachio green. The quartz-eyes are anywhere from a milky white to an opalescent blue and may constitute as much as 15% of the rock. A few quartz-eyes were noted showing an elongated hexagonal outline. One occassionally even sees a few stray feldspar phenocrysts. Fine grained dark green chlorite was found in the more massive sericitized rhyolites at the eastern end.

Intrusive Rocks

The main intrusive rock found in the map area is a dark green quartz diorite. This diorite is very unusual in that the grain size and the quartz content is extremely variable, even within a few feet. The grain size of this diorite varies from fine grained to coarse grained, with a coarse porphyritic unit associated with some of the coarse grained rock. The quartz, occurring as opalescent blue quartz eyes, ranges up to 10% in some of the fine grained zones, whereas, the coarser zones are usually lacking in quartz eyes and intermixed with the feldspar. Some of the medium grained to coarse grained zones exhibit a typical ophitic texture with greenish white feldspar phenocysts up to 3 in. in length and consisting of as much as up to 60% of the outcrop. No dike characteristics were observed for this porphyritic phase. Some outcrops exhibit 1/10 in. hornblende phenocrysts in a fine grained matrix. A few outcrops showed some small feldspars replacing hornblende crystals. Several outcrops were andesitic in nature, carrying opalescent blue quartz eyes and what appeared to be calcite amygdules. These so-called calcite amygdules could very well have been carbonate phenocrysts. A large number of outcrops carried magnetite crystals

and a few even fine stringers of magnetite. Silica content on assays varied from 38.04% to 52.03% $S;O_2$. Some of the collected hand specimens indicate that the silica content could be even more variable and higher.

The other intrusives of the area are granitic rocks. Several tongues of porphyritic biotite granite intruding the quartz diorite were observed. Numerous fine grained pink speckled aplite stringers link with the medium grained granite outcrops. Most of the aplite was unmineralized but one small dike contained some pyrite and about 1% specular hematite. An outcrop of a granodiorite gneiss was also seen on the shore of Botsford Lake.

Structural Geology

The schistosity of the volcanic rocks of the map area strikes east-northeast and is generally steeply dipping to the north. A few dips near the southern shore of Botsford Lake show a southerly dip. No primary bedding was observed. There appear to be several major folds and faults in this area. The central portion of the map area is intensely sheared. A shear zone with related quartz-carbonate stringers, parallels the quartz diorite contact. This shear zone is carbonitized and mineralized.

The shearing along the main shear zone has been so intense that the weathering is quite deep and hence this zone as other shear zones is characterized by the red limonitic alteration of the iron carbonates. A few micro faults of a few inches were observed. The central area along the quartz diorite contact was also extremely brecciated.

Economic Geology.

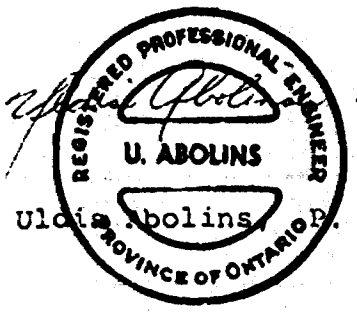
Some tetrahedrite, chalcopyrite, pyrite, and galena mineralization was found in the quartz-carbonate veins of the shear zone, in the quartz-eye sericite schist. These argentiferous veins were found to be erratic and of small magnitude. Two drill holes were drilled to intersect this shear zone and they showed the mineralization to be confined to one quartz-carbonate vein and to be low grade.

Some small gold bearing veins were found in the east part of the map area. The gold is usually associated with a marcastic looking pyrite.

Some scattered sulphide zones were found in the quartz diorite but precious and base metal content was only of trace amounts.

Recommendations

Geological mapping, geophysical surveys and diamond drilling have shown that no obvious exploration opportunities exist on the property.



Uldis Abolins, P. Eng.

R. L. Brown, P. Eng.

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS

Township or Area: Sharron Lake

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

Chief Line Cutter or Contractor: Jean Alix
Name
Val d'Or, Quebec
Address

Party Chief: Martin Pickford
Name
University of London, England
Address

Consultant: R. L. Brown
Name
Suite 2300, 44 King St. W., Toronto
Address

COVERING DATES

Line Cutting: September 6 - Semptember 28, 1970

Field: August 5, 1971 to August 29, 1971
Instrument work, geological mapping, sampling etc.

Office: October 20 to October 27, 1971

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: 41.3

Number of Samples Collected Within Claim Group: _____

MINING CLAIMS TRAVERSED
List numerically

PA272085
PA272086
PA272087
PA272088
PA272089
PA272090
PA272091
PA272092
PA272093
PA272337
PA272338 (10 credits only)
PA272339
PA272341
PA272342 (10 credits only)
PA272347
PA272348
PA272353
PA272354
PA272355 cont.....

If space insufficient, attach list

TOTAL _____

CREDITS REQUESTED

	20 DAYS per claim	40 DAYS per claim	Includes (Line cutting)
Geological Survey	☒ see note	☐	
Geophysical Survey	☐	☐	Show Check ✓
Geochemical Survey	☐	☐	

DATE: October 27, 1971

SIGNED: R. L. Brown

R. L. Brown, P. Eng., Supervisor

Performance and coverage credits do not apply to airborne surveys

Send in duplicate to:
FRED W. MATTHEWS
SUPERVISOR PROJECTS SECTION
DEPARTMENT OF MINES AND
NORTHERN AFFAIRS
WHITNEY BLOCK
QUEEN'S PARK
TORONTO, ONTARIO

RECEIVED
NOV 1 1971
PROJECTS SECTION

MINING CLAIMS TRAVERSED .....:continued

PA272356

PA262648

PA275371

TOTAL 22 claims

PLEASE NOTE: 10 credits were allowed for geological mapping by notice of intent dated Map 13, 1971 for claims PA272338 and PA272342. Mapping on these claims has now been completed, and 10 additional credits are requested.

PROJECTS SECTION DEPARTMENT OF MINES AND NORTHERN AFFAIRS FILE 2.656

TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder Asarco Exploration Company of Canada Limited

Township or Area Sharron Lake Area

Type of Survey and number of Assessment Days Credits per claim	
GEOPHYSICAL	
Magnetometer	days
Electromagnetic	days
Radiometric	days
GEOLOGICAL 20	days
GEOCHEMICAL	days
Man days ☐	Ground ☒
Special Provision ☒	Airborne ☐

NOTICE OF INTENT TO BE ISSUED

☐ Credits have been reduced because of partial coverage of claims.

☐ Credits have been reduced because of corrections to work dates and figures of applicant.

☐ NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

_____

_____

_____

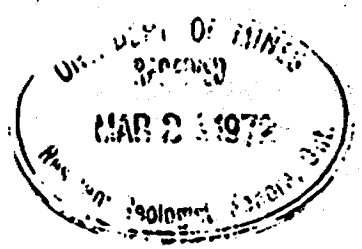
_____

_____

Mining Claims
Pa. 272085 to 272093 inclusive
272337
272339
272341
272347 - 272348
272353 to 272356 inclusive
262648
275371

NOTE:

Only 10 days credits are allowed for each of mining claims Pa. 272338 and 272342



The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical – 80, Geological – 40, Geochemical – 40.

AREA CODE — 416
TELEPHONE — 365-6918

ONTARIO

2.656

WHITNEY BLOCK,
QUEEN'S PARK,
TORONTO 182, ONT

DEPARTMENT OF MINES AND NORTHERN AFFAIRS
MINING LANDS BRANCH

March 17, 1972.

Mr. W. A. Buchan,
Mining Recorder,
Court House,
Sioux Lookout, Ont.

Dear Sir:

Re: Mining Claims Pa. 272085 et al,
Sharron Lake Area. File 2.656

The Geological assessment work credits as shown on the attached list have been approved as of the date above. Please inform the recorded holder and so indicate on your records.

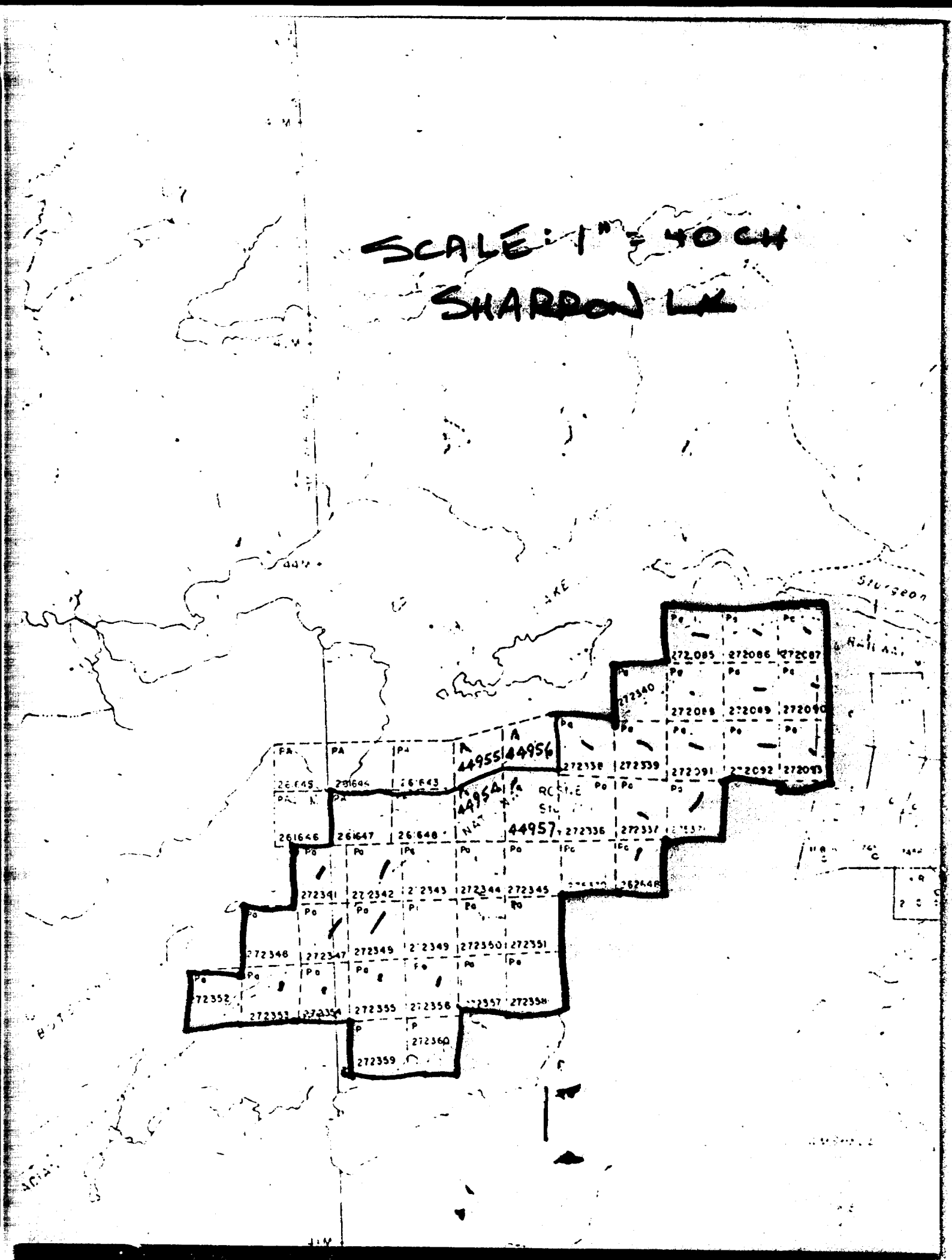
Yours very truly,

Fred W. Matthews,
Supervisor,
Projects Section.

/dg.

c.c. Asarco Exploration Co. of Can. Ltd.

c.c. Resident Geologist,
Kenora, Ont.


SCALE: 1" = 40 CH
SHARON LK
Sturgeon
44955
44956
44954
44957
261645
261646
261647
261648
272085
272086
272087
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272089
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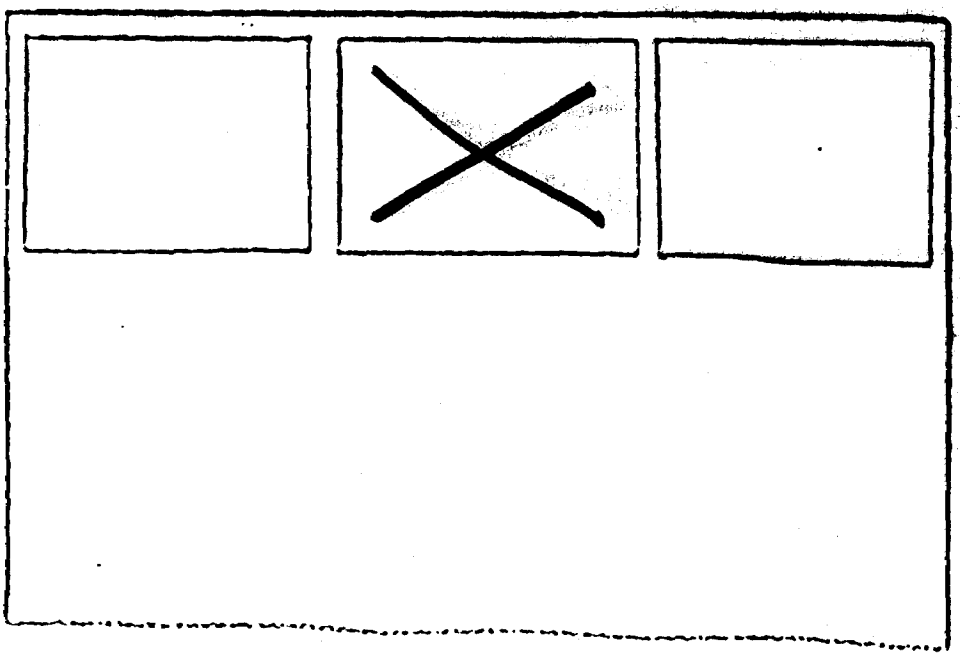
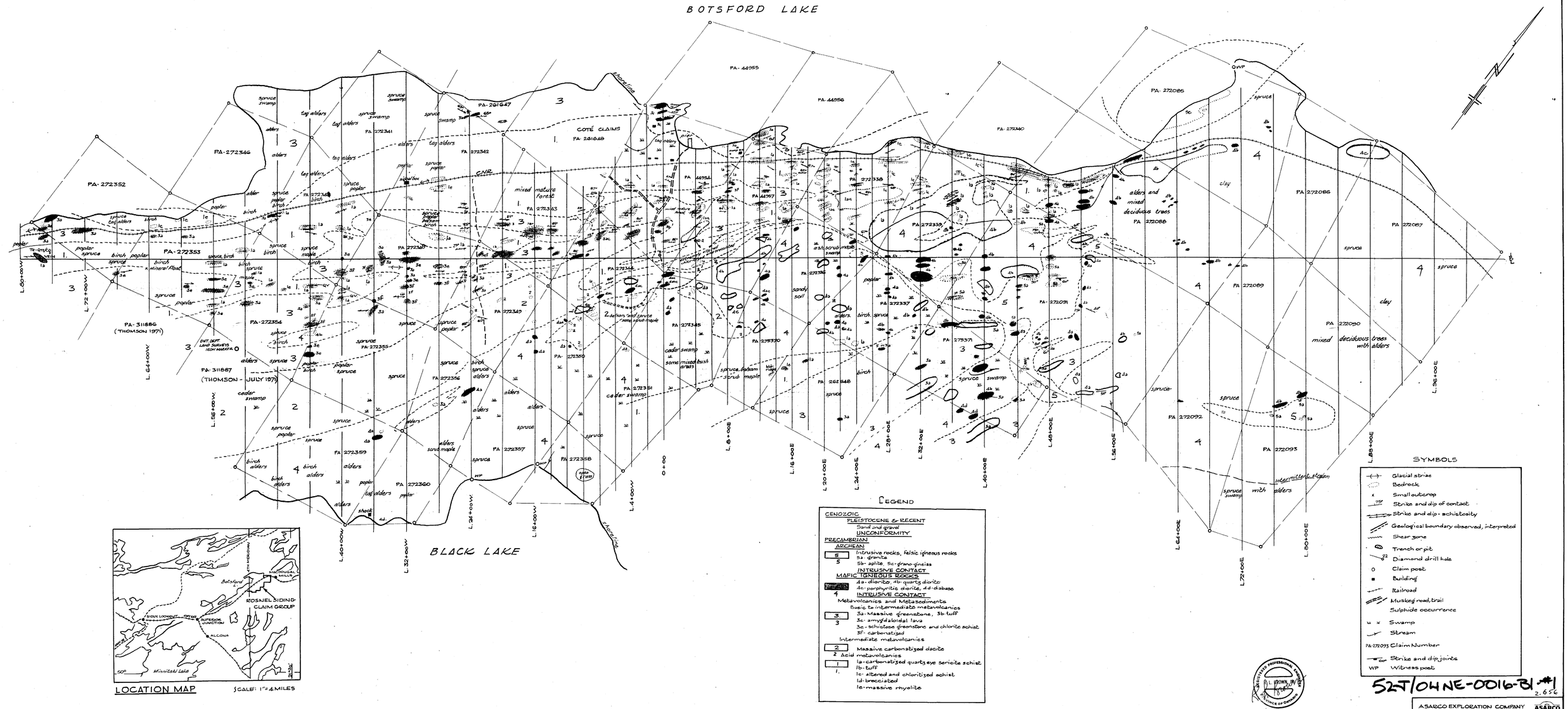
272359
272360

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

52T/04NE-0016-B1*1

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)





LOCATION MAP SCALE: 1"=4 MILES

LEGEND

CENOZOIC
PLEISTOCENE & RECENT
Sand and gravel
UNCONFORMITY
PRECAMBRIAN
ARCHEAN
5 — Intrusive rocks, felsic igneous rocks
5a - granite
5b - aplite, 5c - grano-gneiss
INTRUSIVE CONTACT
MAFIC IGNEOUS ROCKS
4 — 4a - diorite, 4b - quartz diorite
4c - porphyritic diorite, 4d - diabase
INTRUSIVE CONTACT
Metavolcanics and Metasediments
Basic to intermediate metavolcanics
3 — 3a - Massive greenstone, 3b - tuff
3c - amygdaloidal lava
3e - schistose greenstone and chlorite schist
3F - carbonatized
Intermediate metavolcanics
2 — Massive carbonatized dacite
2 Acid metavolcanics
1 — 1a - carbonatized quartz eye sericite schist
1b - tuff
1c - altered and chloritized schist
1d - brecciated
1e - massive rhyolite

SYMBOLS

- Glacial striae
- Bedrock
- Small outcrop
- Strike and dip of contact
- Strike and dip - schistosity
- Geological boundary observed, interpreted
- Shear zone
- Trench or pit
- Diamond drill hole
- Claim post
- Building
- Railroad
- Muskeg road, trail
- Sulphide occurrence
- Swamp
- Stream
- PA-272035 Claim Number
- Strike and dip joints
- WP Witness post

52T/04NE-0016-81 #1
2.656

ASARCO EXPLORATION COMPANY OF CANADA LIMITED — ASARCO

GEOLOGICAL COMPILATION
ROSNEL SIDING - SHABBON LAKE AREA
PATRICIA MINING DIVISION, ONT.

SCALE	DRAWN	DATE	FILE NO.
1" = 400'	M.P.	AUG. 1971	52-J-4

FILE ROSNEL
PROVINCE ONTARIO
DISTRICT PATRICIA
TWP. SHABBON LAKE
N.T.S. 52-J-4

ATTACHMENT