## SUMMARY

Geological and radiometric surveys of the Hunter Creek group have indicated a small area of anomalous radioactivity in rusted conglomerate close to its contact with Missisagi quartzite and a large strike fault.

This condition is analogous to that on the nearby Hunter Lake group where low surface values in uranium were found under similar geological conditions. Should proposed drilling on the Hunter Lake shear prove encouraging, then a limited test-drilling program on the Hunter Creek fault zone would seem warranted.

The O'Brien Lake group is largely covered by sand overburden and no further work is warranted on this group.

## INTRODUCTION

Uranium was first discovered in pyritized pebble conglomerate beds in the Mississagi quartzite of the Blind River area of Ontario in 1948. At that time the true significance of this discovery was not fully appreciated as the uranium content in surface samples was low.

In 1953 however, the discovery on the Pronto claims was drilled and a considerable improvement in uranium values was found at depth and two commercial ore-bodies have been outlined by drilling in the area. Since then thousands of claims have been staked covering the areas underlain by the Bruce Series sediments in the Blind River area and extending westward to Bruce Mines and eastward to and beyond the Sudbury basin.

As yet there is no agreement on the origin of the uranium occurrences. Some consider them as consolidated placers but the weight of evidence seems rather to point to a hydrothermal origin. Pitchblende and uraninite although heavy, are brittle, friable minerals soluble in acid solution and neither has yet been found in significant amounts in modern placers. On the other hand the uranium minerals are found in association with iron sulphides in areas where the rocks were deformed by folding and faulting.

The most important deposit, the Pronto, occurs a short distance north of the Murray fault, a major structure which, according to Collins* has been traced for some 115 miles eastward from Echo River in Bruce Mines area to lot 3, concession II, Hyman Township.

*Collins, W. H., North Shore of Lake Huron, Geol. Surv. Can. Mem. 143, 1925

As there is a large area of Bruce Series rocks in Porter township, several blocks of claims were staked here to cover areas of folding and faulting as shown on Geol. Surv. Can. map 291A "Espanola Sheet" which lie north of the presumed trend of the Murray fault.

## PROPERTIES, LOCATION ACCESS

Wadge Mines Limited controls two claim groups in Porter Township.

(1) O'Brien Lake group; 10 claims:

S71217 to 71223 inclusive
S71572, 71573, 71574

In concessions II and III, lots 9, 10, 11.

(2) Hunter Creek group:

S70664
S74212 to 74220 inclusive

In concessions II and III, lots 3 and 4.

The O'Brien Lake group lies about one mile north of the west end of Hunter Lake and may be reached by a trail which starts at the cabin on the north side of the narrows in Hunter Lake.

The Hunter Creek group lies about two miles northeast of Hunter Lake and is reached by following the northeasterly-trending rock ridges.

Hunter Lake is about 8 miles due north of the village of Espanola on the Canadian Pacific Railway and highway 17 about 45 miles west of Sudbury. Hunter Lake is most conveniently reached by air from Sudbury where Austin Airways provides Norseman, Beaver or Cessna aircraft service.

The water route from Agnew Lake, which is connected by road

to Espanola, involves a portage of 30 chains into the west end of Hunter Lake.

## SURVEY PROCEDURE

Control for the surveys was established by cutting north-south picket lines every 300 feet on which chainage stations were made at 100-foot intervals.

Radiometric observations were made every 50 feet with an Electronic Associates model EA135 geiger counter with continuous head-phone observation between stations. Readings are shown in counts per minute.

## GEOLOGY

Except for occasional sills or dikes of quartz diabase both claim groups are underlain entirely by sediments of the Bruce Series.

### Table of Formations

Recent and Pleistocene:

Swamp, sand, boulders

Late Precambrian:

Killarney:

Quartz Diabase (Db)

Bruce Series:

Serpent quartzite (B3)
Espanola recrystallized calcareous silt (B4)
Bruce conglomerate (B2)
Kissisagi quartzite (B1)

Few rock outcrops were found on the O'Brien Lake group which is covered for the most part by an open sand plain from which widely

separated outcrops of quartz diabase, boulder conglomerate or white Missisagi quartzite protrude.

The Hunter Creek group on the other hand has abundant exposures especially in the northwestern three-quarters of the group where the Serpent quartzite occurs in large northeasterly trending ridges. The southwestern one-quarter of the property is underlain by Missisagi quartzite which is separated from the Serpent by a narrow band of boulder conglomerate and minor calcareous silt.

In general the bedding of sediments strikes in a northeasterly direction with dips vertical or steeply to the south. Local variations in strike and dip, as in S74220, indicate minor folding.

According to mapping by Collins and Quirke (Geol. Surv. Can. map 291A) the Hunter Creek group lies near the east end of a syncline some 5 miles in length. The southeasterly limb of this syncline has been partly truncated by a northeasterly-trending strike fault. The trace of this fault is indicated across S74212, 74216, 74220 by sheared and rusty conglomerate and by a stream-valley.

Observations on the sheared conglomerate indicate that the fault dips to the southeast at about 75°.

## RADIOMETRIC SURVEY AND URANIUM POSSIBILITIES

As would be expected in an area so extensively covered by overburden, the radiometric survey of the O'Brien Lake group showed nothing of interest. Background counts of about 200 per minute prevailed over the entire property with the exception of two isolated 300 counts on lines 9E and 12E which are of no apparent significance.

On the Hunter Creek group a slight increase in radioactivity occurs in the vicinity of the strike fault which traverses the property but only on the baseline near line 27E is there a significant increase in the readings. Here a reading of 480, or over twice background, was obtained in sheared rusty conglomerate very close to the contact with Missisagi quartzite and a short distance southeast of the fault.

Although the anomaly cannot be considered either strong or persistent, it is of interest in that it occurs in similar geological conditions as the anomaly on the neighbouring Hunter Lake group which gave low surface assays in uranium.

## CONCLUSIONS AND RECOMMENDATIONS

In view of the paucity of outcrop and the lack of significant radiometric indications the O'Brien Lake group does not warrant further attention.

The Hunter Creek group however, does present some interesting possibilities. No doubt the most intense shearing lies under the stream valley to the northwest of the rusted conglomerate. Therefore if proposed drilling on the analogous situation on the Hunter Lake group should prove encouraging then, with the possibility of leaching of uranium oxide in mind, drilling of the sheared contacts on the Hunter Creek group would be warranted. Such drill holes should be drilled from southeast to northwest to intersect both the Missisagi-conglomerate and the conglomerate-Serpent contacts. Holes at -45° and 300-foot slope length should accomplish this.

Pending results on the Hunter Lake shear more detailed rate-meter or scintillation counter examination of the conglomerate outcrops

lying between lines 18i and 53E should be carried out with sampling of surface material where counts of more than twice background are found.

Respectfully submitted,

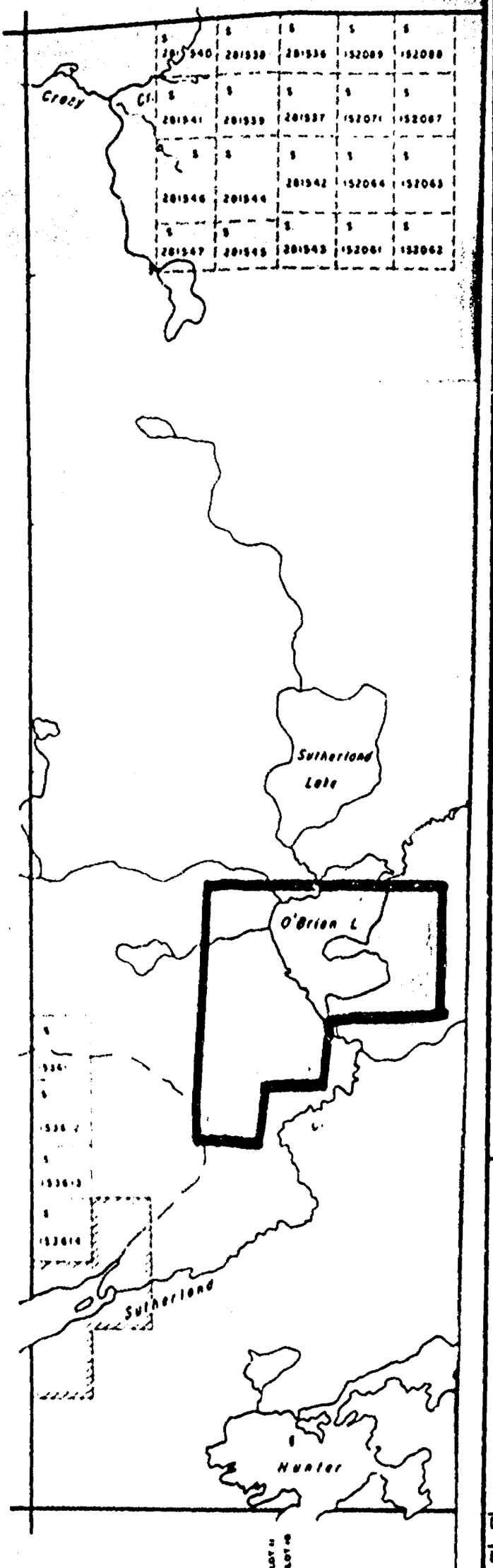
Gardiner, Low and Morrow

John M. Low

John M. Low

Toronto, Ontario
August 16, 1954

DUNLOP TP. M-771




Subdivision of this township into lots ar
ssions has been annulled with the exce
lot 1 con.1, lot 2 con.1, and lot 1 con.2.

Area designated thus ▨ lies within
of W P L A. 69 for Surface Rights On

## LEGEND

PATENTED LAND
PATENTED FOR SURFACE RIGHTS ONLY
LEASE
LICENSE OF OCCUPATION
CROWN LAND SALES
LOCATED LAND
CANCELLED
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
HIGHWAY & ROUTE NO.
ROADS
TRAILS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES

*used only with summer resort locations or when sp

Wadge Mines Ltd.

TOWNSHIP OF

# PORTER

DISTRICT OF
SUDBURY

SUDBURY
MINING DIVISION

SCALE : 1 INCH · 40 CHAINS (1/2

| | |
|---|---|
| DR. Colin V T. | PLAN NO. M-1 |
| DATE 22 JUNE/72 | |

ONTARIO

MINISTRY OF NATURAL RES

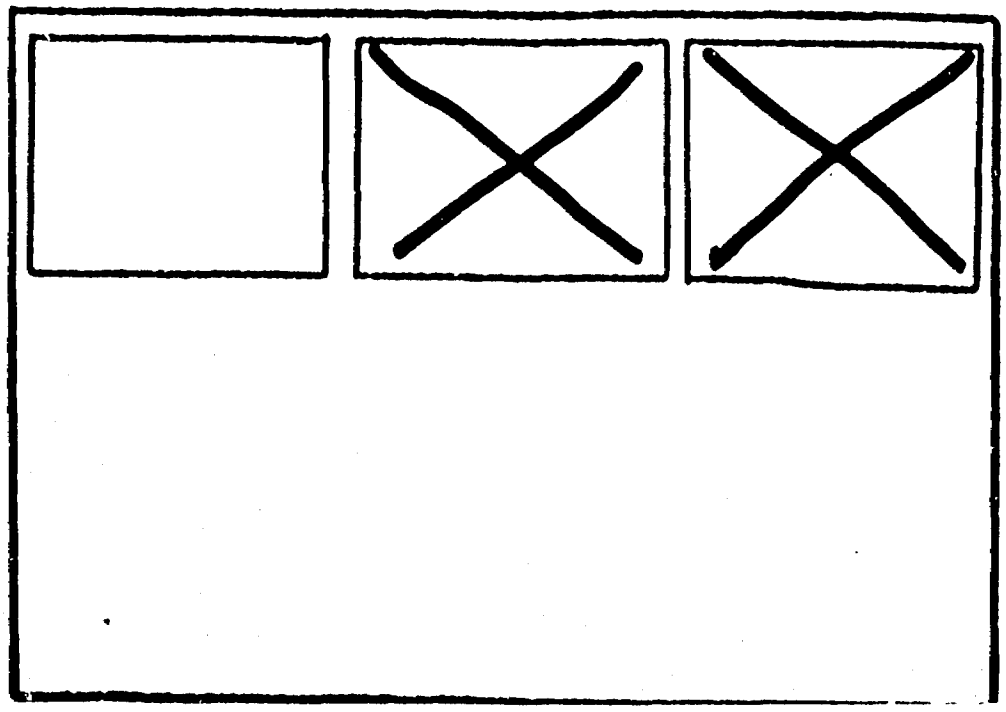
SURVEYS AND MAPPING BRA

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

PORTER-0018-B1-#1

#2

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



# LEGEND

Diabase (Db)

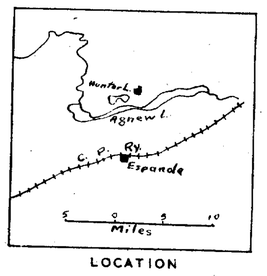
BRUCE SERIES

Serpent quartzite (B5)

Calcareous silt (B4)

Conglomerate (B2)

Mississagi qurtzite (B1)



LOCATION

Swamp

Rust XXX

Strike and dip of bedding 80°

Strike and dip of schistosity 80°

Geological boundary, approximate

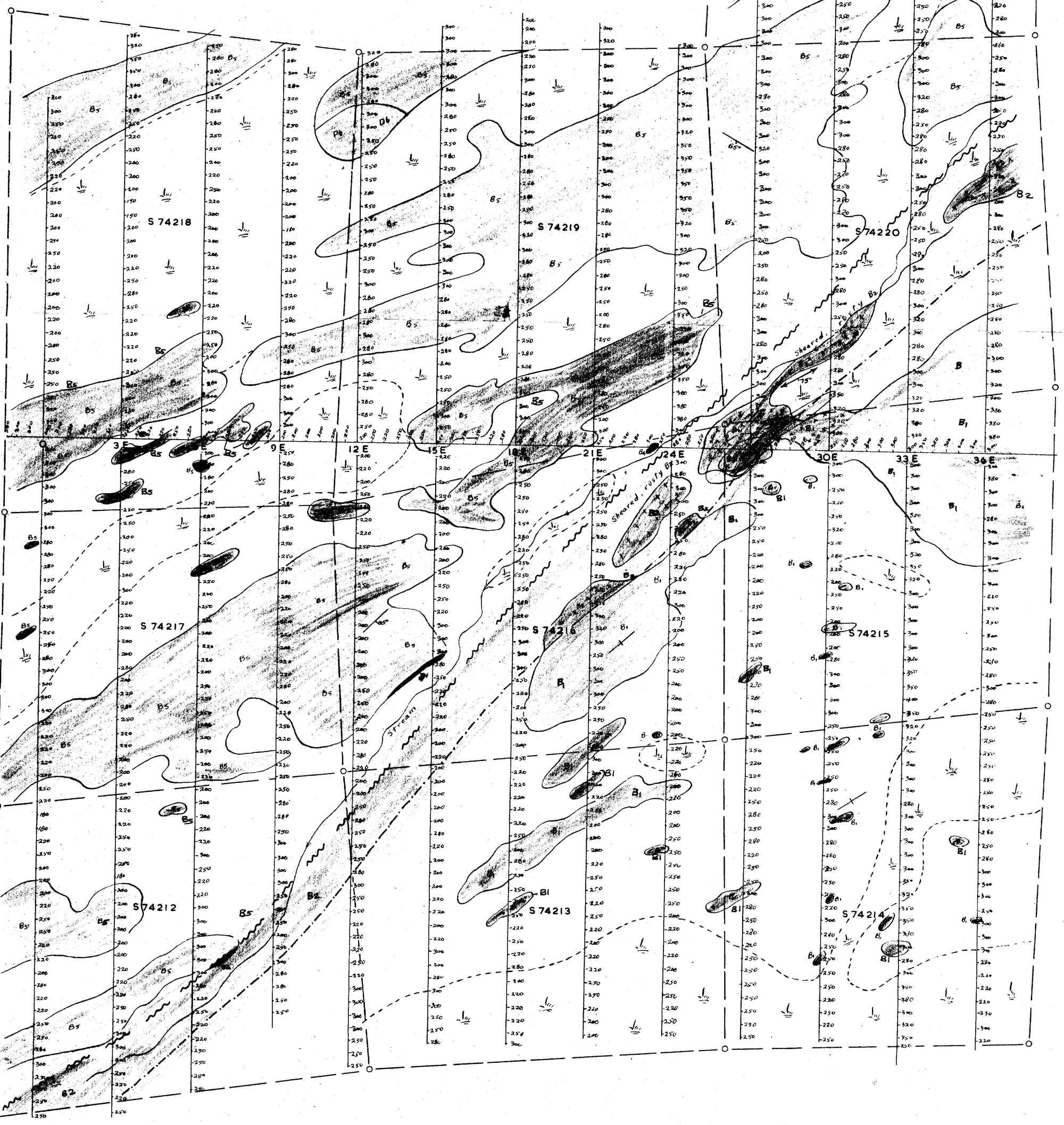
Fault or shear

Ratemeter reading counts per minute 220

N

# Geological and Radiometric Map
# HUNTER CREEK GROUP
## PORTER TOWNSHIP ONTARIO

Scale: 1 inch - 200 feet



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PORTER-0018-B1-#2

# O'BRIEN LAKE

S71220 S71221 S71373 S71219 S71222 S71372 S71374 S71218 S71223 S71217

Db Sand B1 B2

30W 27W 24W 21W 18W 15W 12W 9W 6W 3W 0 3E 6E 9E 12E 15E 18E 21E

1200S

Beaver Dams

N

LOCATION

Hunter Agnew L. C.P.R. Espanola 0 5 10 Miles

## LEGEND

Diabase (Db)

BRUCE SERIES

Conglomerate (B2)

Mississagi quartzite (B1)

Swamp

Rock outcrop (B1)

Ratemeter reading, counts per minute 220

Geological and Radiometric Map

# O'BRIEN LAKE GROUP

PORTER TOWNSHIP ONTARIO

Scale: 1in.-200feet