42A05SE0074 2.7268 THORNELOE

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ESSO MINERALS CANADA

Project #676

Report on a Geology Survey

Thornloe Township

September 11, 1984

J. MacPherson

Geologist

RECEIVED
OCT 05 1984
MINING LANDS SECTION

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Summary

This report describes the results of a geological survey done by J. MacPherson, S. Hurst and D. Piroshco during the period June 20-28, 1984, on a group of forty-six claims located in northwest Thornloe Township. The claims are currently held in the name of Esso Minerals Canada.

Outcrop exposure is limited to the banks of the Tatachikapika River, where highly deformed and locally altered arenaceous sediments, argillites and minor mafic metavolcanics were observed. Minor sulphides in concentrations usually less than 3% were noted in the most deformed and altered sediments.

A northwesterly shallow-plunging fold is interpreted to be present in the vicinity of the Tatachikapika River. A set of ESE shears are believed to trend across the property; late remobilization of one of these has caused the offset or interruption of N-S trending diabase dykes.

Further work in the form of overburden drilling and IP surveys is recommended.

Introduction

In May, 1984, a block of claims located in northwest Thornloe township was acquired by Esso Minerals through staking and by option. These claims were acquired for the purpose of determining the gold potential of an area (interpreted to be north of the Destor-Porcupine Fault) which has received little exploration attention in the past.

The property consists of a total of 46 claims, of which 22 are optioned and 24 are held by Esso directly.

The geological survey described herein is part of a larger exploration program which includes ground geophysical surveys (magnetics, horizontal loop, IP), overburden drilling and future diamond drilling.

The property was mapped during the period June 20-28, 1984, by the Author, with assistance from D. Piroshco and S. Hurst.

Location and Access

The property is located ten miles west-southwest of the city of Timmins in the District of Cochrane, Ontario. The NTS reference map number is 42A/5.

Road access from Timmins is excellent, with paved Highway 144 located just west of the grid area. There are numerous good gravel and bush roads on the property as well as the Tatachikapika River near the east boundary, which is navigable by canoe.

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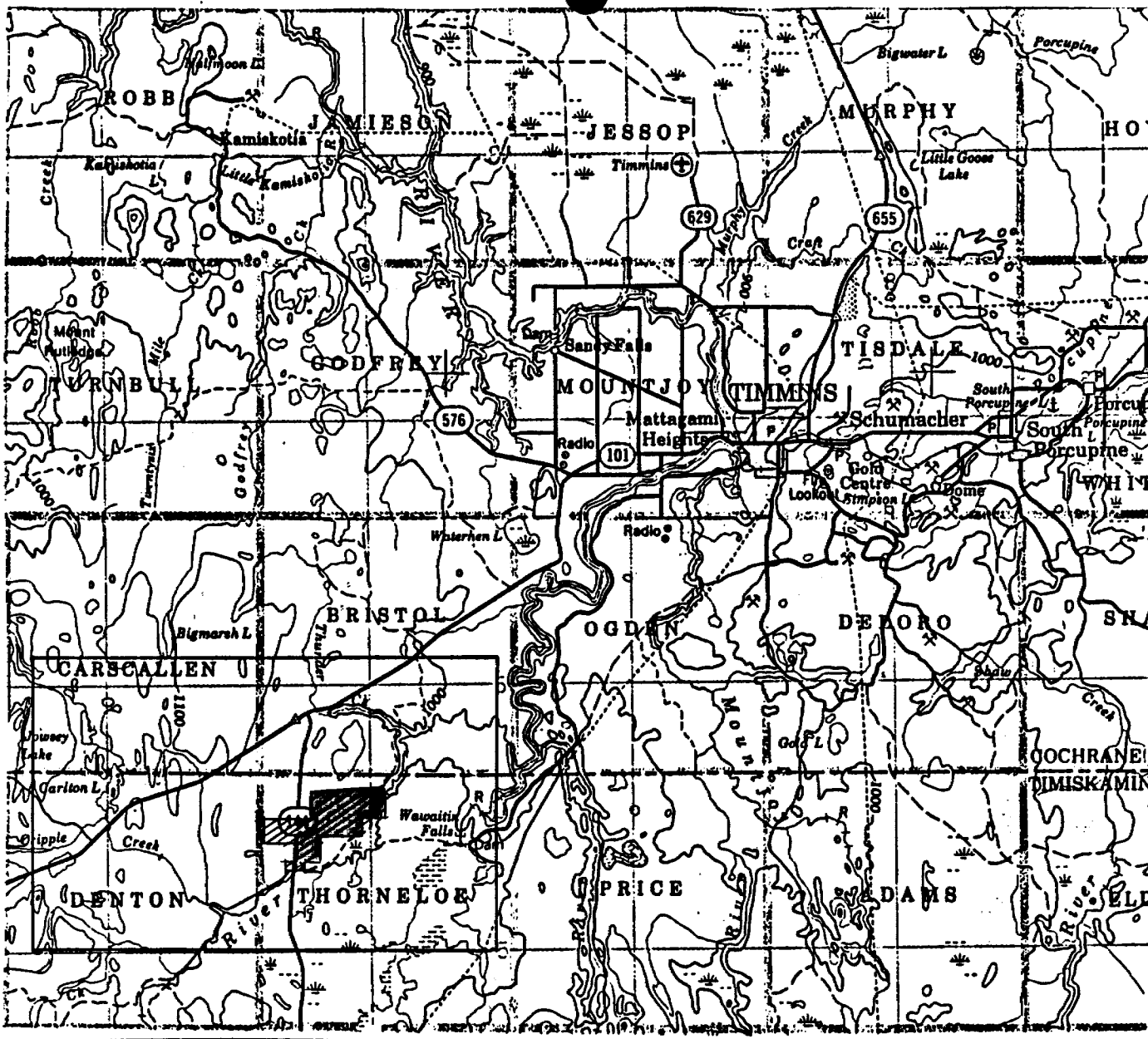


LOCATION MAP, THORNLOE PROJECT

SCALE: 1 INCH =

Note: Coloured area is covered by survey.

Topography and Resources

The relief on the property is generally quite low, with the exception of the steep sand banks of the Tatachikapika River, where the relief is in the order of 50-75 feet.

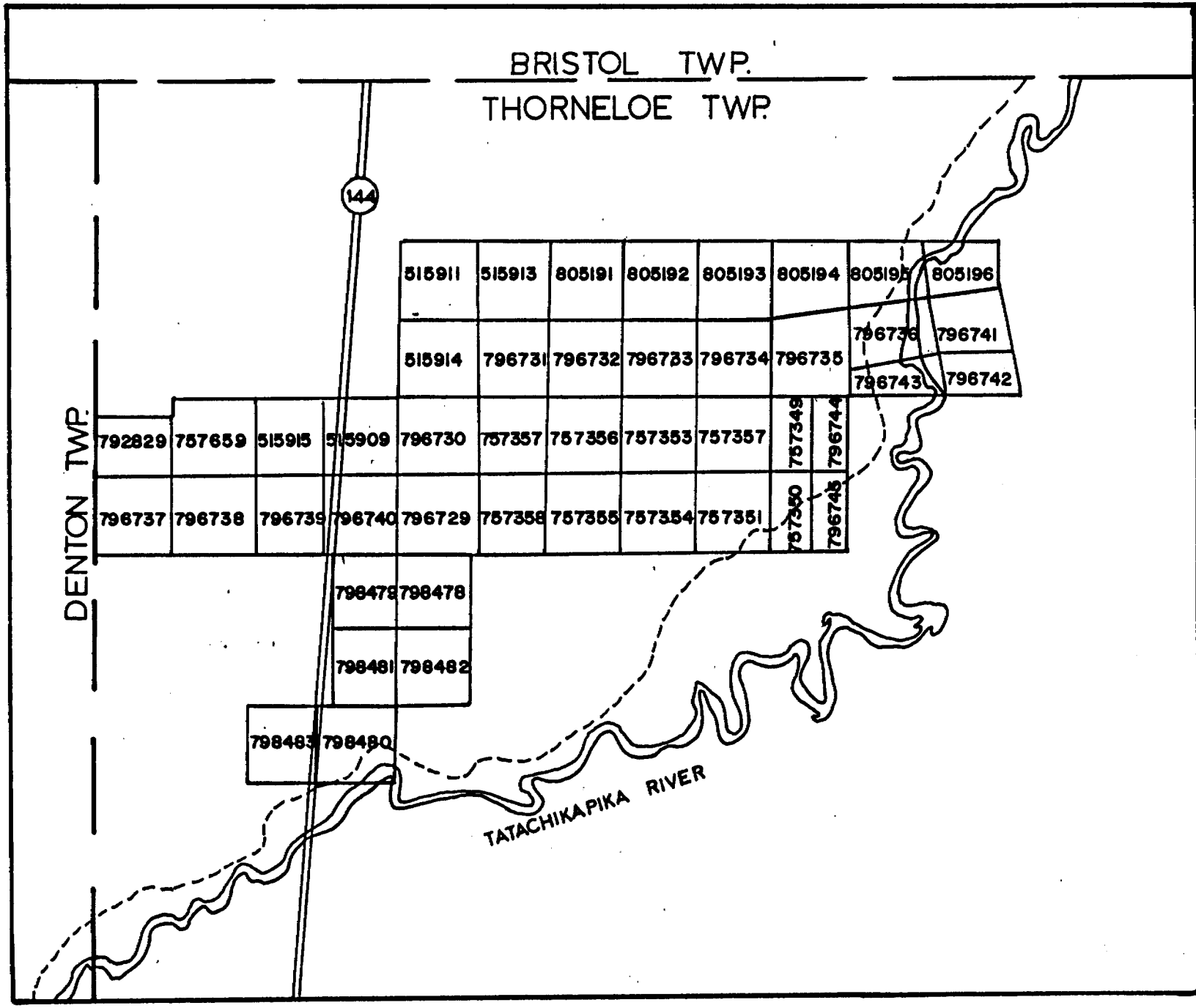
The overburden consists of varying thicknesses of reworked aeolian sands with some boulders and cobbles. Glacial till is fairly common at or near the overburden-bedrock interface and also varies in thickness. Results of the overburden drilling program indicate that the bedrock topography is fairly rugged in places.

There is an abundant supply of water in the area, from the Tatachikapika River in the east and several small lakes in the southeast, as well as several swamps and small streams in the western part of the property.

The eastern half of the property has been cut and replanted with white spruce. The remainder of the property is vegetated with spruce, poplar and birch in the higher sandy areas and black spruce, moss and alders in the lower areas.

Method of Survey and Coverage

The author spent a total of nine (9) days on the property carrying out the geological survey assisted at times by D. Piroshco and S. Hurst. A grid cut originally for geophysical surveys was used as control for the geological survey. Lines were cut at 120 m intervals and stations were located every 25 meters.



Claim sketch, Thornloe Project.

SCALE: 1 inch = ½ mile

A total of 38 claims were covered by the geological survey. The claim numbers are as follows: P-515909, P-515911, P-515913-914, P-796729-736, P796740-745, P-757349-358, P-798478-479, P798481-482, P-805191-196.

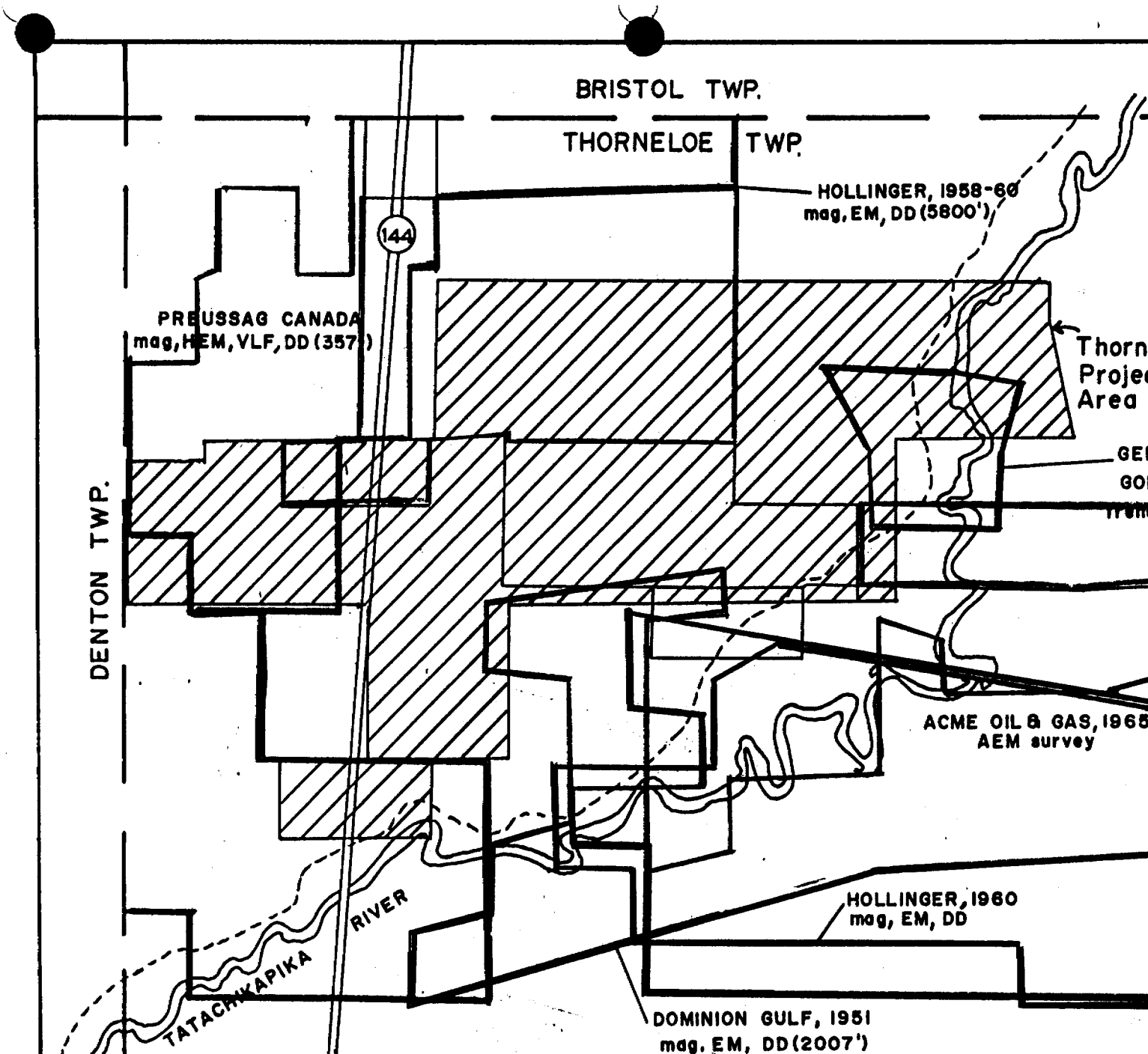
General Geology

The general geology of the Timmins region consists of two volcanic sequences - the Tisdale and Deloro Groups. A thick wedge of metasediments forming a turbidite sequence is considered to be time equivalent to the Upper Deloro Group and the entire Tisdale Group. The Destor-Porcupine Fault dips north and is considered to at least in part mark the boundary between the Deloro and Tisdale Groups.

There is strong evidence for a major offset of the Destor Porcupine Fault just east of the Ogden-Bristol township boundary. The offset appears to be in the order of 6 km and this places the main break just north of the east-west portion of the Tatachikapika River in central Thornloe Township.

North of the fault the rocks appear to be folded around a series of E-W trending axes which dip north and may plunge to the east. South of the fault there is little evidence for folding, aside from some minor slumping or possible drag folds in the iron formation.

The volcanic sequence thins rapidly westward and pinches down to a few hundred metres in thickness in western Denton Township. Intrusives in the area consist of the large



COMPILATION OF PREVIOUS WORK IN NORTHWEST THORNELOE TOWNS

SCALE: 1" = 1/2 mi.

granitic batholiths, quartz-feldspar porphyries, gabbro sills and late diabase dykes. Some of the diabase dykes fill late north-south faults which have varying degrees of offset.

Property Geology

The only outcrop exposures found on the property are located along the banks of the Tatachikapika River.

Highly deformed arenacous sediments are exposed along the riverbank for a distance of about 400 meters. There are also minor amounts of interbedded argillite and mafic metavolcanics.

The arenacous sediments vary from medium to coarse-grained and contain clasts which are usually feldspar and/or quartz. In a couple of localities, the rock appears to be more like a porphyritic intrusive. The beds vary in thickness from a few centimeters up to 2 meters. Contacts are usually sharp and are represented either by a narrow argillaceous unit (< 5 cm) or by a distinct change in grain size. Aside from quartz, the mineralogy consists of feldspar, sericite, carbonate and iron sulphides. The concentration of the latter three minerals vary greatly from outcrop to outcrop but are predominant in the more deformed sediments. In these areas, the rock is a quartz-sericite-carbonate schist, with up to 3% disseminated sulphides, usually pyrite.

The structure of the exposed areas is very complex and interpretation is difficult due to the lack of good exposure.

.../9

There are at least two main foliations visible in the rocks, along with one major lineation. The first foliation (S_1) trends about N45°W and dips anywhere from 65°SW to vertical. The S_2 crenulation strikes N40°E on the average and dips are shallow (35°-45°) to the northwest. The lineation caused by the intersection of S_1 and S_2 strikes N40°W and plunges 15°-20°.

Bedding contacts, where visible, appear to strike subparallel to S_1. There appears to be a set of weak shears which strike approximately 110°. It is in these shear zones that the greatest alteration and concentration of sulphides occur.

Interpretation is difficult with the limited amount of information available; however, one possible picture is that there is a shallow-plunging syncline oriented at about 130° and plunging to the northwest. Late N-S faulting and possibly further folding have complicated the picture. It is pointed out that the above is a possibility only and is based on very limited data.

Elsewhere on the property, the geology must be inferred from geophysics and the bedrock chips from the overburden drill program. There are three diabase dykes: on L2080E, L1320E and L600E. All three are interrupted around the baseline and two show appreciable offsets of about 150 meters. This suggests a major break trending at about 105°, which was remobilized subsequent to the intrusion of the diabase dykes. The iron formation indicated on L-240E-720E, south of TL900S is abruptly terminated between L240E and L120E by a N-S trending fault which can be traced at least as far north as the Bristol Thornloe township boundary.

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Conclusions and Recommendations

The property is underlain mainly by sediments, trending roughly 110° and dipping to the north. There may also be lesser amounts of metavolcanics present. These units are cut by one or more shears which are approximately parallel to bedding and also dip north. These may be splays of the Destor-Porcupine Fault System.

Exploration activity must be directed towards further overburden drilling coupled with IP surveys to help locate areas of sulphide mineralization in or around the major ESE-trending shear zones.

J. A. MacPherson

STATEMENT OF QUALIFICATIONS

I, Joseph A. MacPherson, do certify the following:

1. I am a graduate of Laurentian University in Sudbury, Ontario, and hold an Honours Bachelor of Science degree in Geology.
2. I have been practising my profession continuously since graduation in 1980.
3. I have no personal monetary or stock interest in any of the properties which are discussed in this report.

Date: Sept. 11/84 Signed: J. A. MacPherson

Qual. 2.5167

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Mining Lands Section

File No 2.7268

Control Sheet

TYPE OF SURVEY

____ GEOPHYSICAL

__✓__ GEOLOGICAL

____ GEOCHEMICAL

__[redacted]__ EXPENDITURE

MINING LANDS COMMENTS:

Doug

Signature of Assessor

LD

23/10/84

Date

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

2.7268
#415/84

Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s)	Township or Area
GEOLOGICAL	THORNELOE

Claim Holder(s)	Prospector's Licence No.
ESSO RESOURCES CANADA	T-872

Address
)0 ADELAIDE ST. W, TORONTO, ONTARIO

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
ESSO MINERALS CANADA	20 06 84 (Day / Mo. / Yr.) 28 06 84 (Day / Mo. / Yr.)	35

Name and Address of Author (of Geo-Technical report)
Joseph MacPherson, 1340 Richard Cresc., P.O. Box 431, Timmins, Ontario

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	40
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

OCT 18 1984
MINING LANDS SECTION

PORCUPINE MINING DIVISION
RECEIVED
OCT 3 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	757349	
	757350	
	757351	
	757352	
	757353	
	757354	
	757355	
	757356	
	757357	
	757358	
	796729	
	796730	
	796731	
	796732	
	796733	
	796734	
	796735	
	796736	
	796740	
	796741	
	796742	
	796743	
	796744	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	796745	
	515909	
	515911	
	515913	
	515914	
	805191	
	805192	
	805193	
	805194	
	805195	
	805196	
	798478	
	798479	
	798481	
	798482	

RECORDED
OCT 3 1984
Receipt No. [illegible]

Total number of mining claims covered by this report of work: 38

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures				Total Days Credits
$	÷	15	=	

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
1520	Oct 3/84	
	Date Approved as Recorded 84.10.25	Mining Recorder

Date	Recorded Holder or Agent (Signature)
Sept. 20, 1984	

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
Joseph MacPherson, 1340 Richard Crescent, P.O. Box 431
Timmins, Ontario P4N 7E3

Date Certified	Certified by (Signature)
September 20/84	J.A. MacPherson

1362 (81/9)

1984 10 12

Your File:
Our File: 2.7268

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We received reports and maps on October 5, 1984 for a Geological Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 757349 et al in the Township of Thornelee.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

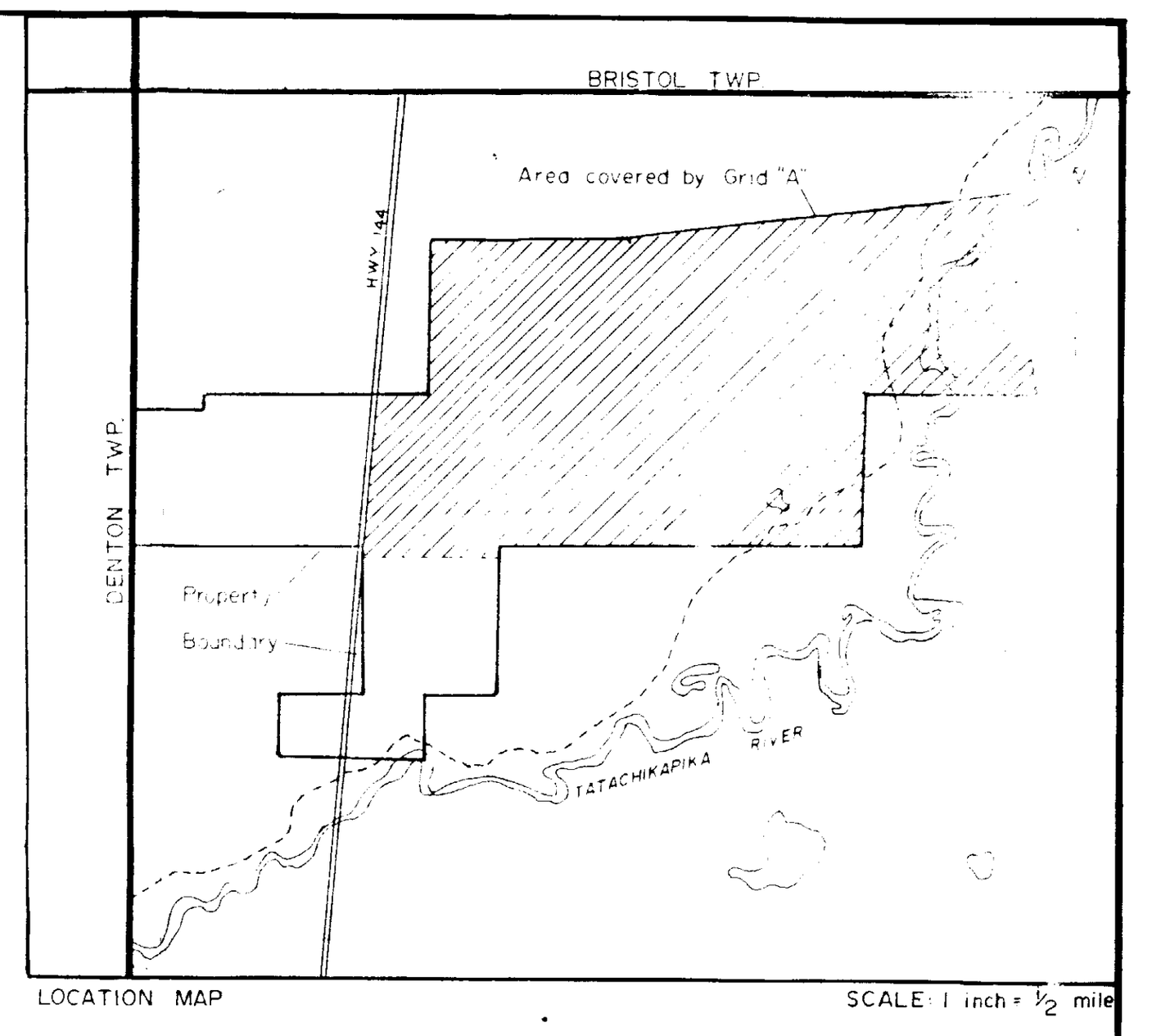
S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-6918

A. Barr:sc

cc: Esso Resources Canada
120 Adelaide Street West
Toronto, Ontario
M5H 1T1

cc: Joseph M,acPherson
1380 Richard Cresc
P.O. Box 431
Timmins, Ontario
P4N 7E3



LEGEND

SEDIMENTS

1 Arenaceous Sediments
a- fine-grained
b- medium-grained
c- coarse-grained
d- quartz eyes

2 Argillite-mudstone

3 Quartz-sericite-carbonate schist

VOLCANICS

4 Intermediate to mafic flow; chloritic, fine-grained

SYMBOLS

- Strike and dip of bedding
- Strike and dip of transposed bedding
- Strike and dip of schistosity s_1
- Strike and dip of schistosity s_2
- Drag fold showing direction and amount of plunge
- Lineation - direction and amount of plunge known
- Geological contact, observed
- Shear zone, fault
- Outcrop
- Q.S. Quartz stringer or gash
- Q.A.S. Quartz ankerite stringer or gash
- Py Pyrite
- Old pit or trench
- Drill hole, direction and inclination known
- Claim post, position located
- Claim post, position assumed
- Main bush road
- Secondary bush road
- Portage trail
- Slope
- Sand dune
- Edge of clear-cut area (slash)
- Boundary of swamp
- Swamp
- Pond, small lake
- Stream
- Rapids

TH-02 17.4 Overburden drill hole with depths in meters

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

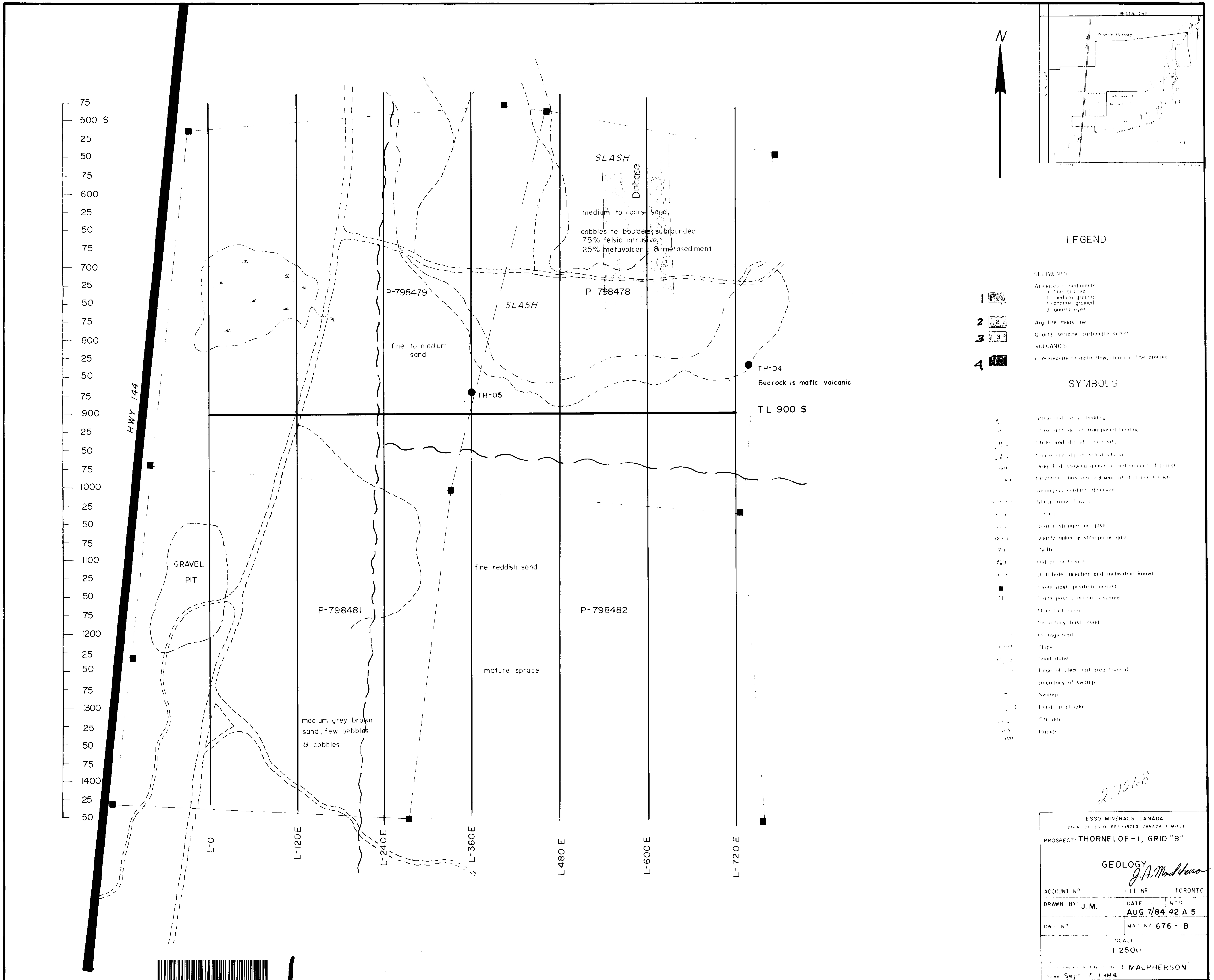
PROSPECT: THORNELOE - I Grid "A"

GEOLOGY

J.A. MacPherson

ACCOUNT Nº	FILE Nº	TORONTO
DRAWN BY: J.M	DATE 7/9/84	NTS 42A/5
DWG Nº	MAP Nº 676-1A	
	SCALE 1:2500	

To Accompany A Report By: J. MacPherson



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