



41105SE9406 BALDWIN 30B1 BALDWIN

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63A.254.

DOMINION GULF COMPANY

GEOLOGICAL ASSESSMENT REPORT

Claims S-71007,08,09,-11 to 13, S-70415,-17 and 19

Baldwin IV

Base Map 411/5S

North Channel Area

Ontario.

C. McAulay

April 6, 1955.

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TABLE OF CONTENTS

	<u>PAGE</u>
Summary	1
Introduction	1
Topography	2
Geology	2
Table of Formations	2
Description of Formations	2
Structure	4
Mineralization	4
Attachments	4
References	4

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SUMMARY

This is a report on details geological mapping on mine claims S-71007,-08,-9,-11 to 13, S-70415,-17 and 19 in lots 3, 4 and 5 concession VI, Baldwin Township in the Sudbury Mining Division, Ontario.

They can be reached by a road that runs north from McKerrow on Highway 17 to Espanola Bay on Lake Agnew.

Well over one half of the surface of the claims lies under the lake.

They are underlain by tightly folded quartzites, greywackes and derived schists of the Mississagi sub-division of the Huronian intruded by dikes and sills of Nipissing (?) diorite and gabbro.

The regional strike of the formations is a few degrees north of east.

INTRODUCTION

This is a report on detailed geological mapping on nine claims, S-71007,-08,-09,-11 to 13, S-70415-17 and 19 covering the W/2 of the S/2 of lot 3, the S/2 of lot 4, the NE/4 of the S/2 and the SW/4 of the N/2 of lot 5, concession VI, Baldwin Township in the Sudbury Mining Division of Ontario.

They are situated on Lake Agnew north and northeast of Espanola Bay, and it can be reached by road from McKerrow, a town on the C.P.R. and highway 17 about 40 miles west of Sudbury.

The area is included in Map No. 291A, "Espanola Sheet" (at 1 mile to the inch), Canada Department of Mines and Resources.

It was mapped in greater detail by geologists of the Ontario Department of Mines who published Map No. 1952-1 of Baldwin Township at 1,000 feet to the inch.

The present mapping was in even greater detail at 400 feet to the inch.

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Picket lines were used for control on the north and south shores of the lake and aerial photographs enlarged to 400 feet to one inch were used to map the islands. The shoreline was done in 1953 when the water level was approximately ten feet lower than at present.

Other work done on the claims consisted of radioactivity prospecting with a scintillometer on all exposures, a scintillometer survey along the picket lines, a radioactivity survey of the lake bottom with a diamond drill hole geiger counter combined with soundings for the depth of water and a magnetometer survey along picket lines on the ice of the lake, the islands and some parts of the shore.

TOPOGRAPHY

Approximately, seventy-five percent of the area is under Lake Agnew.

The relief in the remainder is fairly low with the highest hill on the south shore in claim S-70419 about seventy-five feet above the lake.

In general, the quartzite, being more resistant tends to form the higher ground and the greywacke being less resistant the lower ground and presumably most of the lake bottom.

GEOLOGY

Table of Formations

Nipissing - Diorite and gabbro

Huronian (Mississagi) - Quartzite

Greywacke and derived schists

Description of Formations

Diorite and Gabbro

The basic intrusives occur mainly as sills, but partly as dikes, intruding the sediments. In this area, where exposed, they are not over 100 feet wide. However, in the surrounding country large irregular masses with an area of several claims are common.

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Most of the rock is fine to medium grained, massive and grey-green in colour. Locally the texture may be either diabasic or schistose.

Pyrrhotite and magnetite are found in small rusty concentrations. The largest of these discovered occurs near the centre of the large island near the southeast corner of S-71011 causing a local sharp magnetic anomaly at this point. It is only a few feet long. No copper is visible and nickel tests are negative.

Quartzite

The quartzite is a well banded white weathering variety well exposed in two localities. It forms a high hill in claim S-70419 on the south shore of the lake. This may be attributed to its relatively greater resistance to erosion.

The strike of the bands is nearly east and the dip varies from 70° to the south to vertical.

The other quartzite occurrence is the large island centred at the southwest corner of S-71009. It consists almost entirely of well banded quartzite with minor narrow greywacke or sericite schist interbeds. The beds form an anticline with a near vertical north limb. The axis of this fold runs approximately N 60E along the length of the island.

Greywacke and Derived Schists

The greywacke is a fine grained well banded rock locally highly contorted or becciated and often altered to stauralite and similar schists.

Due to its low resistance to weathering, it is found mainly on low ground and on the flanks of hills that are supported by the more resistant quartzite and basic intrusives.

The deeper parts of the lake are probably underlain by greywacke or derived schists.

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Structure

The regional strike is a few degrees north of east. The sediments have been tightly compressed into tight folds with axes that conform to this general trend. The limbs are consequently steep and near vertical dips are very common.

Except on the island at the common corner of the four easternmost claims where tops are indicated by crossbedding in the quartzite, little useful structural information is available. The greywackes are well banded but are usually highly contorted and locally are brecciated or *conglomerated*.

The structural picture under the lake portion - three quarters of the property - is unknown.

Mineralization

Pyrrhotite is found in small rusty weathering patches in the diorite. The largest of these is only a few feet long. Test for nickel have been negative, and no copper minerals were noted.

CM/bj

C. McAulay

ATTACHMENTS

Claims S-71007,08,09,11 to 13, S-70415-17 & 19. Baldwin IV - Baldwin Twp.
Base Map 41I/5S, North Channel Area, Ontario. Scale 1 inch = 400 feet,
Orig. P 114 - 1
Col. W/P P 114-2

REFERENCES

"Espanola Sheet" Map 291A (1" = 1 mi.) Canada Department of Mines.
"Geology of Baldwin Township" by Jas. E. Thomson Volume LXI, Part 4,
1952, Ontario Department of Mines (with accompanying map No. 1952-1.)

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D O M I N I O N G U L F C O M P A N Y

INTERPRETATION OF RADIOACTIVITY SURVEY

Baldwin IV (Claims S-71012)

Base Map 41I/5S

Sudbury Mining Division, Ontario

C.W. Faessler

May 26, 1955

REPLACEMENT COPY

INTRODUCTION

A radioactivity survey was conducted by C.E. Parsons and assistants in 1954, over claim S-710 $\frac{1}{2}$ of the Baldwin IV claim group held by Dominion Gulf Company. This claim covers the southeast quarter of the north half Lot 5, Concession VI, Baldwin township, in the Sudbury Mining Division.

Scintillometer Model No. 939, Serial No. 310 was used to survey the land portion of this claim. Readings with the instrument of waist level were taken at 100 foot intervals on north-south picket lines 400 feet apart. A total of 53 stations were read over 1.03 line miles. The results are plotted on the attached map, at a scale of 1 inch equals 400 feet.

INTERPRETATION

The results obtained on this survey vary from 15 to 22 counts per second. When it is considered that readings of 200 counts per second come from rocks with very low uranium content one must conclude that no significant anomaly was located. This however does not mean that radioactive mineralization is not present because the dampening effect of an unknown thickness of overburden cannot be estimated.

Two possibilities are seen: the overburden is thick or the overburden is thin. It is considered that three or four feet of overburden will blanket completely a radioactive source. If the overburden is less than three feet, then one can conclude that no radioactive mineral is present near the rock surface. If the overburden is thicker than three feet, radioactive minerals may or may not be present as they would not be detectable.

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RECOMMENDATIONS

To clarify the two possibilities listed above, it is suggested that some soundings be made to establish the overburden thickness. If the overburden is found to be thick, some other means will be required to locate favorable location.

CWF/bj

C.W. Faessler.

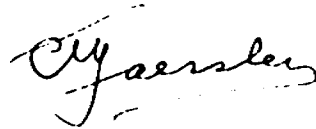
ATTACHMENTS

Dominion Gulf Company, Radioactivity Survey, Baldwin IV, Claim S-71012, Scale 1" = 400', May 24, 1955.

**DUPLICATE COPY
POOR QUALITY ORIGINAL
TO FOLLOW**

RECOMMENDATIONS

To clarify the two possibilities listed above, it is suggested that some soundings be made to establish the overburden thickness. If the overburden is found to be thick, some other means will be required to locate favorable location.



C. W. Faessler.

CWF/bj

ATTACHMENTS

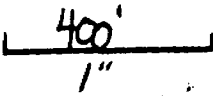
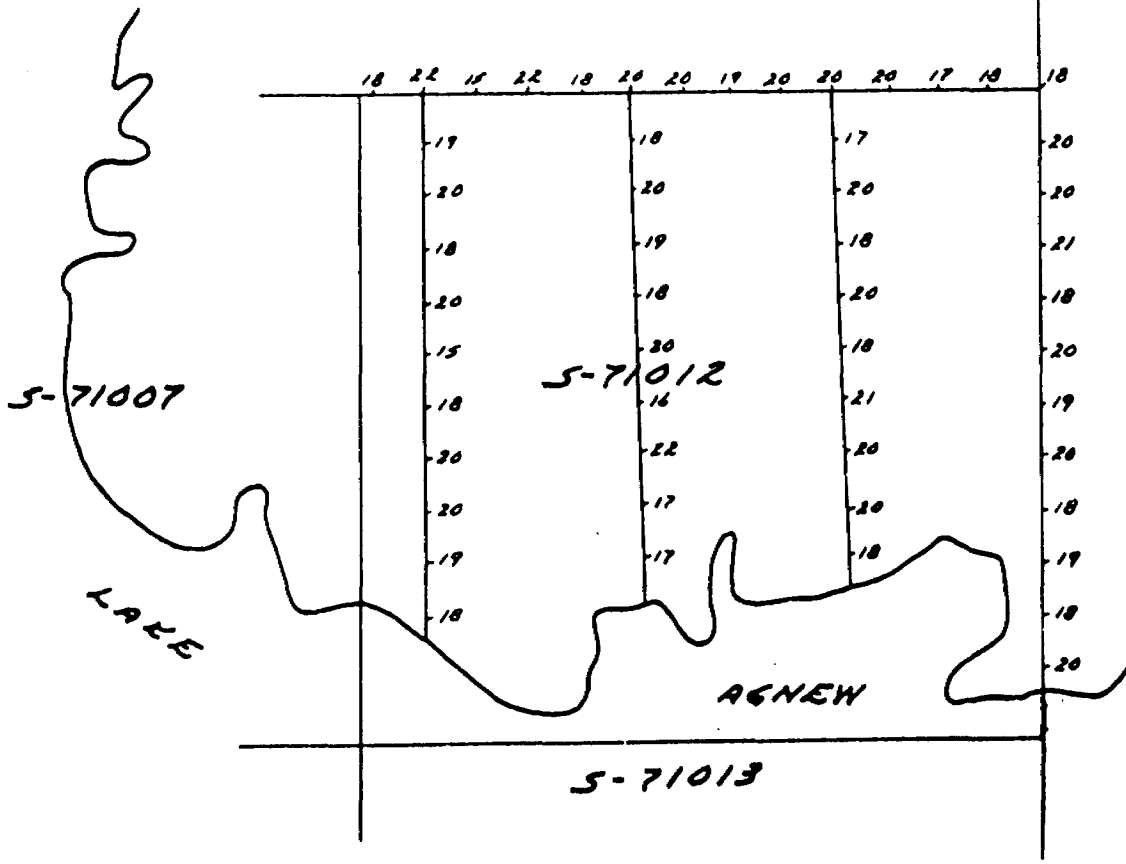
Dominion Gulf Company, Radioactivity Survey, Baldwin N, Claim S-71012,
Scale 1" = 400', May 24, 1955.

PORTER TWP
BALDWIN TWP



CON. II

LOT 5
LOT 4



DOMINION GULF COMPANY
RADIOACTIVITY SURVEY
CLAIM S-71012
BALDWIN II

SCALE: 1" = 400' MAY 24, 1955
To accompany report by C.W. Foessler
dated May 26, 1955



41105SE9406 BALDWIN 30B1 BALDWIN

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D O M I N I O N G U L F C O M P A N Y

INTERPRETATION OF GROUND MAGNETOMETER DATA
Baldwin IV (Claims S-71012, S-70416, 18, 23)

Base Map 41I/58

Sudbury Mining Division, Ontario

C.W. Faessler

May 26, 1955

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41105SE9406 BALDWIN 30B1 BALDWIN

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CONTENTS

	<u>Page</u>
Introduction	1
Summary	1
Interpretation	2
Recommendation	3
Attachments	3

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INTRODUCTION

A ground magnetometer survey was made over the land portion of the claims numbered S-70416, S-70418, S-70423 and S-71012 of the Baldwin IV claim group held by Dominion Gulf Company. These claims occupy the NW, NE and Sw quarter of the north-half of Lot 4, Concession V, and the SE quarter of the northhalf of Lot 5, Concession VI, of Baldwin township, Ontario.

In the three southeastern claims, the picket lines were extended from the previous lake survey and then tied in topographically. In the norwestern claim, a base line was run along the northern boundary and lines perpendicular to it were turned off at intervals of 400 feet. The ground magnetometer survey consists of readings taken at intervals of 50 feet along the picket-lines over the land portion of these claims. The instrument used is an Askania Schmidt-type vertical component magnetic balance, having a sensitivity of about 20 gammas per scale division. A total of 260 stations were read over 2.5 miles of picket lines.

The survey was made by W.J. Cannon, assisted by K. Linton. A preliminary draft was made in the field and the data were later processed by the Dominion Gulf Company staff in Toronto.

The results of this survey and the interpretation of the data, are presented on the attached map, at a scale of 1 inch equals 400 feet and contour interval of 100 gammas.

SUMMARY

The purpose of this magnetometer survey was to establish whether the magnetic characteristics of the various rock types could be used to recognize magnetically the occurrence of the same rocks under the lake.

It is shown that the various anomalies observed over outcrop are not related to rock type but that the magnetic material is secondary in origin and that its distribution is probably related to alteration along some contacts, various planes of jointing, shearing or faulting.

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A relatively continuous series of anomalies is interpreted as a shear or fault trending NE to ENE across S-70423 and S-70418.

It is concluded that further ground magnetometer surveys would be of little or no use.

INTERPRETATION

The land portion of the three southeastern claims is well over 50% bare outcrop (see Dominion Gulf Co. Geological Report, Baldwin IV, Claims S-70416-18-21-22-23 and S71872-73-74, dated Oct. 23, 1954, by C. McAulay, and accompanying map). The rock types encountered are 1) Diorite and gabbro

2) Quartzite

3) Greywacke and derived schists, in irregularly shaped masses.

The purpose of this magnetometer survey was to establish whether the magnetic characteristics of the various rock types, could be used to recognize magnetically the occurrence of the same rocks under the lake.

The present surveys shows that the quartzites occur in the magnetically low and flat areas. But so do the greywackes and the intrusives except that anomalies, small in area, but with varying intensities (up to 1400 gammas above base level) are associated with these rocks. From the inspection of the present data it must be concluded that the magnetic properties of these rocks is such that an attempt to recognize these rocks magnetically would be so unreliable as to be useless.

These anomalies strongly suggests that the magnetic material is secondary in origin and that its distribution is governed, not by the rock type, but by some other means, except in the case of the quartzites where it appears to be excluded all together.

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Such a distribution of magnetic material could be caused by alteration along some contacts, along various planes of jointing, shearing or faulting. A fairly continuous shear or fault appears to be indicated by a series of anomalies. This shear or fault is slightly curved as its trend changes from NE, almost diagonally across claim S-70423, to ENE in the southern portion of claim S-70418.

The other anomalies in the three southeastern claims suggest parallel NE to ENE trends but their discontinuity prevents any degree of certainty. In the northwestern claim, the small anomalies suggest a more EW trend with the same degree of uncertainty.

RECOMMENDATION

It is shown that rock types could not be recognized magnetically. Therefore, the purpose of this survey was attained, although in a negative fashion. The land portion of Baldwin IV contains numerous outcrops. It is concluded that further ground magnetometer surveys would be of little or no use.

CWF/bj

C.W. Faessler

ATTACHMENTS

Dominion Gulf Company, Ground Magnetometer Survey, Baldwin IV,
(Claims S-70416,18,23, S-71012) 41I/5S, Scale 1" = 400', May 24, 1955.

**DUPLICATE COPY
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TO FOLLOW**

Such a distribution of magnetic material could be caused by alteration along some contacts, along various planes of jointing, shearing or faulting. A fairly continuous shear or fault appears to be indicated by a series of anomalies. This shear or fault is slightly curved as its trend changes from NE, almost diagonally across claim S-70423, to ENE in the southern portion of claim S-70418.

The other anomalies in the three southeastern claims suggest parallel NE to ENE trends but their discontinuity prevents any degree of certainty. In the northwestern claim, the small anomalies suggest a more E4 trend with the same degree of uncertainty.

RECOMMENDATION

It is shown that rock types could not be recognized magnetically. Therefore the purpose of this survey was attained, although in a negative fashion. The land portion of Baldwin IV contains numerous outcrops. It is concluded that further ground magnetometer surveys would be of little or no use.

C. W. Faessler

C. W. Faessler.

CWF/bj

ATTACHMENTS

Dominion Gulf Company, Ground Magnetometer Survey, Baldwin IV, (Claims S-70416,18,23, S-71012) 411/5S, Scale 1" = 400', May 24, 1955.

1955 AUG 29

Mr. H. C. Rickaby,
Deputy Minister of Mines,
Ontario Department of Mines,
Parliament Buildings,
Toronto, Ontario.

Dear Mr. Rickaby:

Enclosed with this letter I am forwarding to you a report and map in duplicate covering geological work performed on the land portion of 9 claims numbered S-71007, to 009, 011 to 013, 70415, 417 and 419, located in Baldwin Township.

Also enclosed is a report and map in duplicate covering a radioactivity survey performed on claim S-71012, which I am submitting in conjunction with the geological survey.

I am also enclosing a report and map in duplicate covering a ground magnetometer survey performed on claims S-71012, 70416, 418 and 423.

A breakdown of the man-days required for the work reported herein with their assessment credit values is shown in the following schedule:

	<u>Actual</u> <u>Man-days</u>	<u>Assessment</u> <u>Factor</u>	<u>Assessment</u> <u>Credit in</u> <u>Man-days</u>
<u>Detailed Geology</u>			
Field Work			
(C. McAulay, Geologist)	31.5	4	126.
Drafting and Report			
(C. McAulay, Geologist)	2.25	4	9.
Linecutting			
(C. R. Linton, Chief)	4.5	4	18.

	<u>Actual Man-days</u>	<u>Assessment Factor</u>	<u>Assessment Credit in Man-days</u>
<u>Radioactivity</u>			
Field Work			
(G. E. Parsons, Geologist)	1.	4	4.
Drafting Interp. & Report (C. W. Faessler, Geophysicist)	<u>-</u>	<u>-</u>	<u>-</u>
	<u>39.25</u>	<u>4</u>	<u>157.</u>
<u>Ground Magnetometer</u>			
Field Work			
(W. J. Gannon, Chief)	11.25	4	45.
Drafting (C. W. Faessler)	5.	4	20.
Interpretation and Report (C. W. Faessler, Geophysicist)	<u>2.5</u>	<u>4</u>	<u>10.</u>
	<u>18.75</u>	<u>4</u>	<u>75.</u>
Total	<u>58.</u>	<u>4</u>	<u>232.</u>

On the basis of the above I am requesting that work be credited to claims as follows:

	<u>Detailed Geology</u>	<u>Linecutting</u>	<u>Radioactivity</u>	<u>Ground Magnetometer</u>	<u>Total</u>
8-71007	4	2			6
008	4	2			6
009	4	2			6
011	4	2			6
012	15	2	4	19	40
013	4	2			6
8-70415	4	2			6
416				19	19
417	4	2			6
418				19	19
419	4	2			6
423	<u>-</u>	<u>-</u>	<u>-</u>	<u>18</u>	<u>18</u>
	<u>67</u>	<u>18</u>	<u>4</u>	<u>75</u>	<u>164</u>

Enclosed is a copy of our Schedule "A" which accompanied each work report filed with the Mining Recorder. This schedule shows the complete listing of the men employed on the surveys and the dates during which the work was performed.

Very truly yours,
ORIGINAL SIGNED BY
E. W. Westrick
E. W. Westrick

Attachments follow in this order:

1. Schedule "A" showing employees engaged in work reported
2. Geological report written by C. McAulay
3. Geological map, scale 1" = 400'
4. Radioactivity report written by C. W. Faessler
5. Radioactivity map, scale 1" = 400'
6. Ground magnetometer report written by C. W. Faessler
7. Ground magnetometer map, scale 1" = 400'

SCHEDULE "A"

	<u>1954</u>	<u>1955</u>
	<u>Oct.</u>	<u>May</u>
<u>Detailed Geology</u>		
<u>Field Work</u>		
C. McAulay	x	
G.E. Parsons	x	
G.E. Tupper	x	
M.G. Parsons	x	
W.J. Gannon	x	
C.R. Linton	x	
<u>Drafting and Report</u>		
M.G. Parsons	x	
C. McAulay	x	
N. Hunt	x	
<u>Linecutting</u>		
M.G. Parsons	x	
W.J. Gannon	x	
C.R. Linton	x	
<u>Radioactivity</u>		
G.E. Parsons	x	
M.G. Parsons	x	
C.W. Faessler		x
<u>Ground Magnetometer</u>		
<u>Field Work</u>		
W.J. Gannon	x	
C.R. Linton	x	
<u>Drafting</u>		
C.W. Faessler	x	
<u>Interpretation and Report</u>		
C.W. Faessler		x

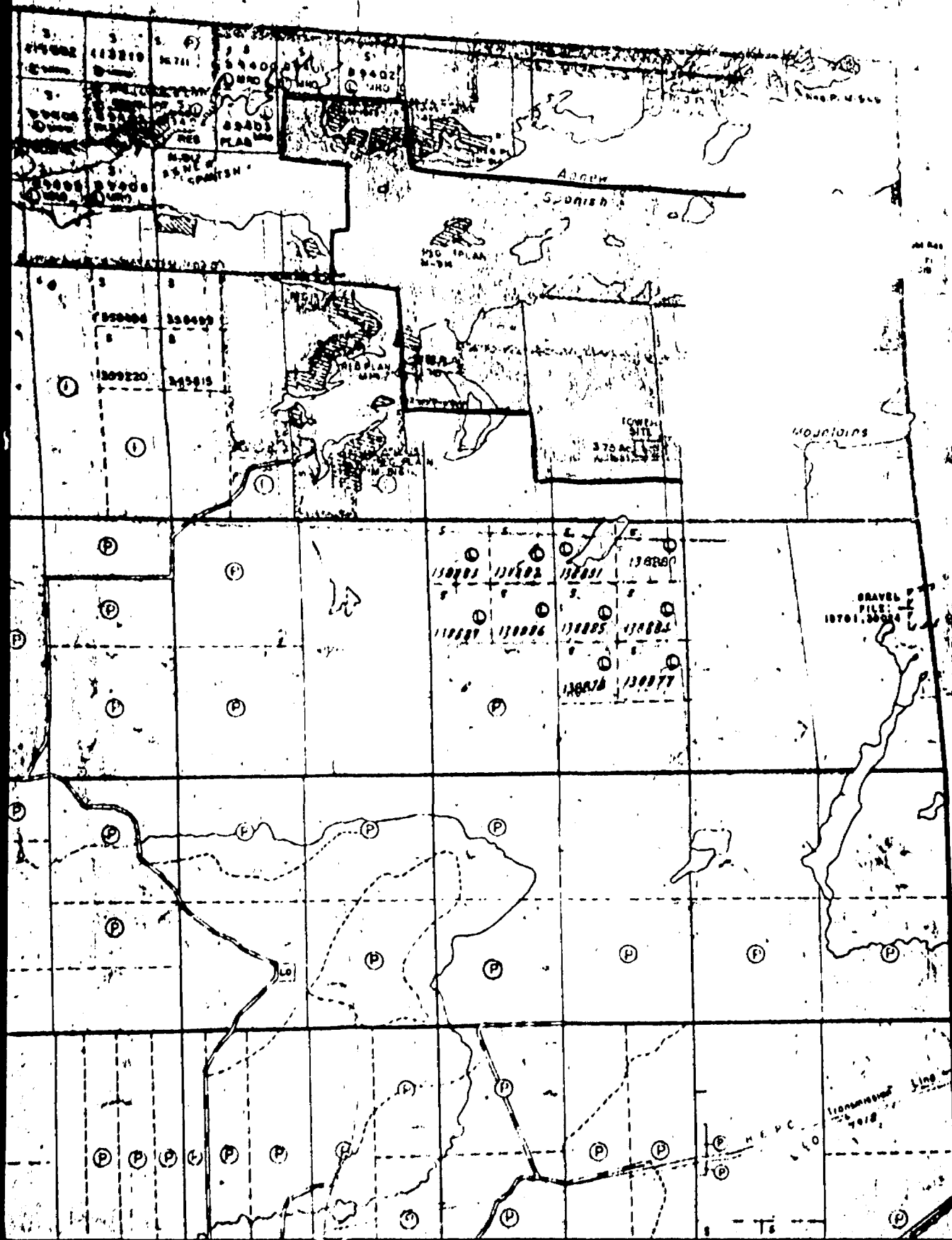


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Baldwin Twp.

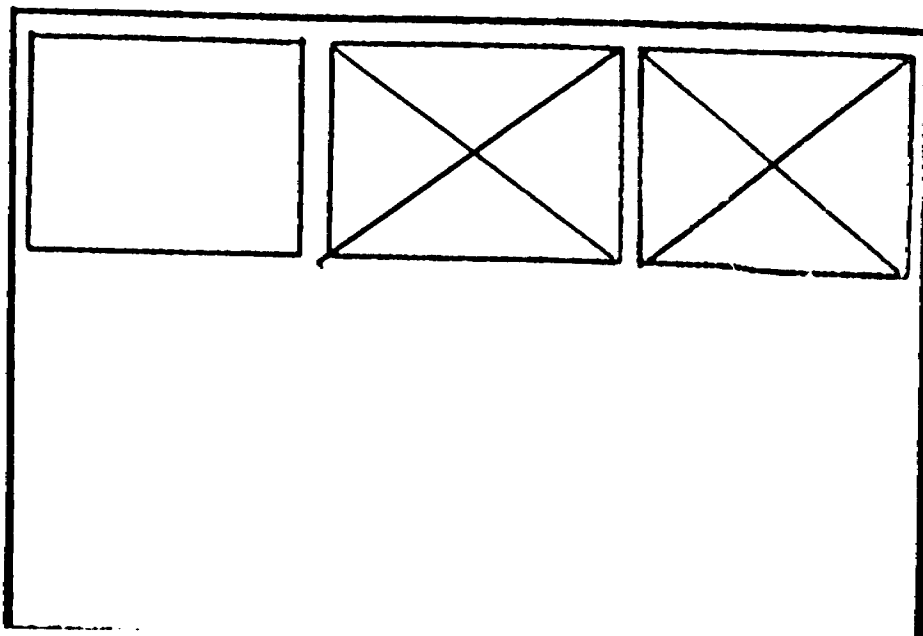
Porter Twp. (M 1089)



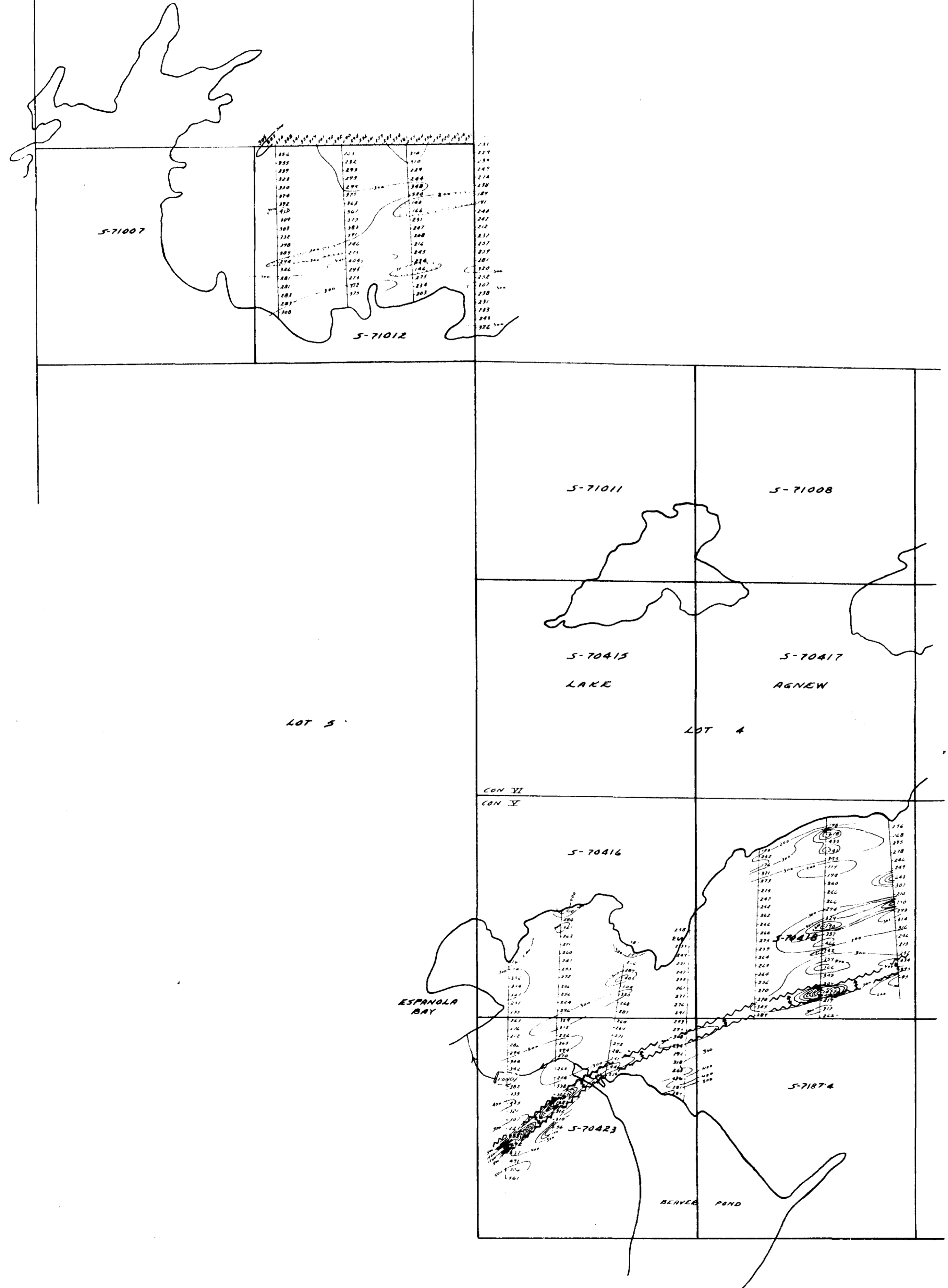
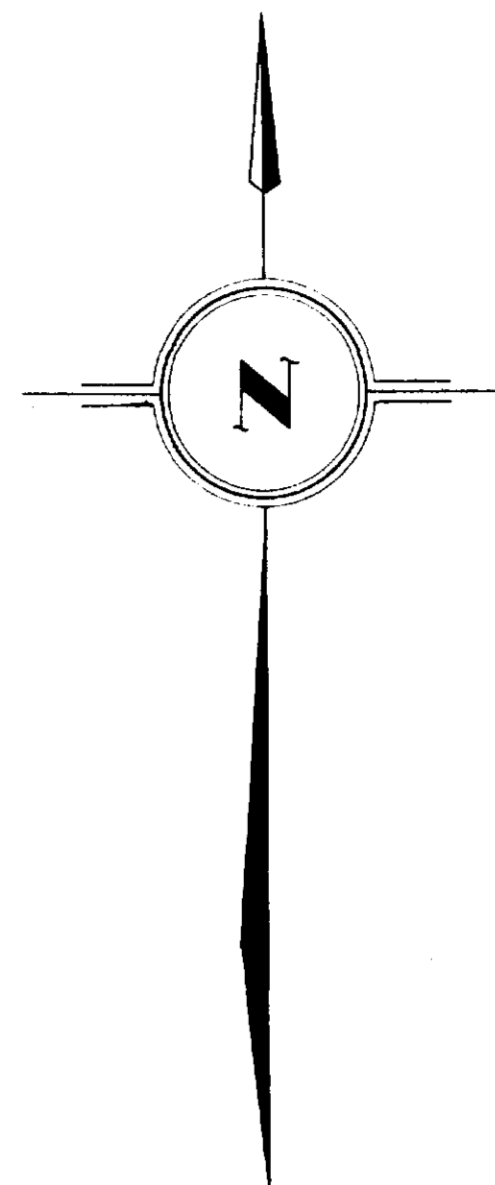
SEE ACCOMPANYING
MAP(S) IDENTIFIED AS

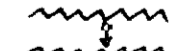
BALDWIN-0030-B1, #1, #2

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



PORTER TOWNSHIP
BALDWIN TOWNSHIP



Interpreted Fault or Shear 
Contour Interval: 100y

DOMINION GULF COMPANY
GROUND MAGNETOMETER SURVEY
CLAIMS-5-70416-18-23, 5-71012
BALDWIN IV
41 I/55 ONTARIO
SCALE: 1" = 400' MAY 24, 1955
To accompany report by CW Faessler
dated May 26, 1955

