REPORT ON GEOLOGI CRAWFORD RIVER GR TOWNSHIP, SUDBURY MINING DIVISION, PROVINCE OF ONTARIO.

Introduction:

The following report describes the geological and magnetometer surveys recently completed on the Canadian Johns-Manville Company Limited claims located in the north-central and eastern sections of Kenogaming Township, Sudbury Mining Division, Province of Ontario.

Staking of the major part of the Crawford River Group of claims was carried out by Jim Black and John Black and these claims were recorded and transferred to Canadian Johns-Manville Company Limited on April 10th, 1956. Further staking was carried out by A. Loam and Paul Kaltwasser and these claims were recorded and transferred on July 6th, 1956 and on August 17th, 1956 respectively. This group comprises 42 claims. All tagging has been completed.

A base line was started from a point close to the Crawford River in the south-eastern section of claim S-98171. This base line was cut to both the east and west across the length of the claims group. East-west tie lines were cut at appropriate distances north and south of this base line. A second base line was started at the No. 4 Post of claim S-94760 and cut to the east. This base line is located on the line between Kenogaming and Sewell Townships. Picket lines were established at 200 and 300 foot intervals with numbered pickets every 100 feet. Line cutting and chaining of this group of claims was contracted to Jean Alix Company Limited, Val d'Or, Quebec.

Geological mapping of the group was conducted by R. Todd, a field geologist of Canadian Johns-Manville Company Limited, with the assistance of H. McDougall and J. Chisolm. Rock outcrops were tied into the numbered pickets on the offset lines and base lines by the pace and compass method. All prominent topographic features were noted during the survey and are shown on the accompanying plans.

The magnetometer survey was carried out by L. Allison, a geophysical operator for Canadian Johns-Manville Company Limited, with the assistance of H. McDougall. Readings were observed using the Sharpe's D-I-V type magnetometer. Stations were spaced at 100 foot intervals.

Supervision and interpretation of this work was the responsibility of F. J. Evelegh, senior geologist with Canadian Johns-Manville Company Limited, Matheson, Ontario.

Property:

Forty-two claims are included in this group and are numbered as follows:-

S-94740 -41-42-43-46-47-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67

S-97108-09-10-11-12

S-98162-63-64-65-66-67-68-69-70-71-72-73

These claims comprise approximately 1,680 acres.

Location and Accessibility:

This group of claims lies in the north part of Kenogaming Township, Sudbury Mining Division, Province of Ontario. The area extends from approximately one mile west of Crawford River eastward to one half mile west of Akweskwa Lake. Four claims in the north-eastern part have the Kenogaming-Sewell Township line as their north boundary and Post 1 of claim S-94765 is located at the three mile post on this line. The group is located approximately 36 miles south-west of Timmins, Ontario.

Access to the claims by road has been rendered easier than in past years by the construction of a new road into a mill site owned by T. Chequis, Timmins, on the north-east shore of Akweskwa Lake. This road turns south-east from the Warren Lake Road, about 35 miles west of Timmins. The claims are easily accessible by canoe from this side of the Lake. A good trail runs westward from the Lake to Crawford River and this provides a conve

travel route within the claims group.

Topography:

As the claim area lies within the Precambrian peneplain, the topography is relatively flat. The north-eastern claims, however, cover an area of higher ground timbered with yellow and white birch, spruce and white pine. It is the presence of "stands" of white pine in this area that has led to the commencement of lumber operations. Swamp areas in this section are practically non-existent. The central portion of the claims group is lower lying and black spruce covers most of the ground. Open spruce swamp areas are common and the outcrops appear to be characterised by a thick covering of grey lichen. West of the Crawford River, the bush becomes mixed in type. The ground pattern here, and to the east, is one of north-south ridges of glacial debris. This feature is very pronounced on examination of aerial photographs. In this section (west) the overburden is deeper and outcrops sparse. Birch, balsam and spruce prefer the higher ground, while cedar and tamarack are found to predominate in the lower intervening "gullies".

The Crawford River is the only sizeable waterway in this area. It provides, with a few narrow creeks, the main drainage of the area to the north and the main source of water. During a dry summer in parts of the group, especially the north-eastern section, water could be a problem both for the traveller and for diamond drilling operations.

Previous Work:

This area was mapped by E. W. Todd and the results were published in 1924 in Vol. XXXIII, Part 6, - Annual Report of the Ontario Department of Mines. The general geology of the area is shown on Map #33-G - Groundhog River Area - on a scale of 1 inch equals one and one-half miles. This map accompanies Todd's report.

An extensive search of the records of the Ontario Department of

Mines indicated that no work has been filed for assessment purposes in this section of Kenogaming Township in previous years. However, while mapping the iron formation immediately east of the Crawford River, old pits and trenches, as well as several hundred feet of EXT diamond drill core, were discovered indicating that some exploration work has been carried out in this area.

Line Cutting and Surveying:

The No. 1 Base Line, as described on Page 1 of this report, was extended a distance of 5,100 feet west of the 0400 point. Picket lines in this section were spaced at 300 foot intervals and turned off at right angles to this base line. This base line was cut and chained to the east for a distance of 8,300 feet and right-angled offset lines were cut and chained to the north and south at 200 foot intervals (in the area immediately east of the Crawford River) and at 300 foot intervals in the central and eastern parts of the Central Map Sheet. Tie lines were cut at appropriate distances to the north and south of this base line.

The No. 2 Base Line, as described on Page 1 of this report, was cut to the west for a distance of 5,400 feet. Right-angled offset lines were cut to the south of this base line and were spaced at 300 foot intervals. Pickets with numbered locations were established at 100 foot intervals by chaining.

Line cutting and chaining was contracted to Jean Alix Company Limited, Val d'Or, Quebec, and this work was conducted during the period September 21st to October 27th, 1956.

During the course of this contract a total of 61.9 miles of line was cut and chained.

Geological Survey:

The outcrops on the property described in this report were mapped

by R. Todd with the assistance of H. McDougall and J. Chisolm, during the period September 20th to October 21st, 1956. Mapping was carried out from offset picket lines spaced at 200 and 300 foot intervals and the results are shown on the accompanying plans on a scale of one inch equals 200 feet.

The following "Table of Formations" covers the rock types mapped during the course of this work:-

Pleistocene and Recent:	Glacial sands and gravel
?Algoman	Granite, granodiorite, feldspar
?Haileyburian	Diorite, quartz gabbro, gabbro, serpentinite
Keewatin	Intermediate, basic volcanics, iron formation, sediments.

Keewatin:

Extrusive igneous rocks and derived metamorphics:

The rocks which form a large proportion of the outcrops in the group are highly schistose and altered basic or intermediate volcanics. The rock is usually fine grained, dark grey or green in color. Alteration has in many cases led to the development of a softer carbonated facies in which quartz stringers are found running parallel to the schistosity. The dark green color is in all probability due to the presence of actinolite but more than one specimen has shown evidence of slight serpentinisation. The surface of the lavas is often highly vesicular and they weather to a brownish-grey color. They are for the most part non-magnetic, except near the contact of the ultrabasics where some serpentine may be included in the matrix. These volcanic rocks are found throughout the area usually on the limits of the iron formation. No outcrops of these altered andesites or basalts were found west of the Crawford River.

2. Iron Formation:

The main part of this formation extends east from the Crawford River and swings north-east towards the Kenogaming-Sewell Township line. Two occurrences of the iron formation have been found west of the River and it is possible, in the absence of outcrops in this area, that much of the central-west group is underlain by iron formation. It is assumed that the occurrence in this area is part of the discontinuous belt of iron formation which follows a north of east trend and is found westwards in the Nest-Benbow Lakes group and further west in Penhorwood Township to the north and west of Montgomery Lake.

The formation in the group here comprises more than one lithological type and for convenience they are described as follows:-

a) Quartz-chert-magnetite phase

This has often been referred to in the past as "true" iron formation. It is composed of alternating bands of silica and magnetite with lesser stringers of hematite, and small lenses of pyrite. The silica may be present as quartz, quartzite, chert or jasper. This strikingly banded rock is found in the north-eastern section and in parts of the central group.

b) Iron-rich phase

This phase is found in this area confined mainly to the central group. The banded nature of the formation is not pronounced here and the rock is usually a hard, dense mixture of haematite, magnetite and jasper with quartz "eyes". Pyrite, with a trace of pyrrhotite, is found disseminated throughout the rock with smaller veinlets (one to two inches) of massive pyrite. Where magnetite becomes replaced by haematite and where this is altered to a light brownish limonite, the rock may become virtually non-magnetic.

c) "Sedimentary" phase

Due to a marked increase in argillaceous impurities followed by subsequent

metamorphism giving rise to a high degree of schistosity this type in many ways resembles a sediment. The rock is fissile, "shaly" and the iron-rich sections are interbanded with dark pyrite bearing slates. Here the iron is present primarily in the form of carbonates with some chert. Reds, greens and browns are the predominate colors of this phase.

It should be noted that this "classification" is made for convenience only and the types are not lithologically or structurally separate. Although they do represent a general field impression, variations and gradations of each phase exist.

The possibility of finding sulphide enrichment and iron in economic quantities is fairly good and further exploration work will probably be done.

There is little doubt as to the close genetic relationship between the iron formation and the igneous extrusive rocks. This is evidenced by the parallelism of the banding in the iron formation with the plane of the volcanic contact and the general conformity of both. This is in agreement with the general theories of the genesis of iron formation which postulate quick deposition of iron sediments on basal lavas. The occurrence of a small outcrop of sediments, mapped as a schistose grit, suggests in this case a short period of sub-aerial erosion.

?Haileyburian:

1. Ultrabasics:

On the east side of Crawford River there appears to be a sill-like body of ultrabasic rock exposed in sporadic occurrences and closely associated with the Keewatin rocks. This body reaches a width of 300 to 400 feet in the north-eastern section and is intrusive into the volcanics and iron formation for a distance of approximately one and one-half to two miles and follows the strike of the older rocks. The ultrabasics are gabbros and peridotites both having undergone varying degrees of serpentinization. No

mappable contact between the gabbro and peridotite was found - the two types probably arising as a result of differentiation within the sill.

The serpentinized peridotite is usually fine to medium in grain. The carbonate content is never high. Both white and brown weathering types of peridotite have been found, while the gabbro weathers to a white color.

Gabbro has also been found in the group west of the River, but no serpentinization was observed. No occurrences of serpentinized dunite were found.

Of major interest and importance was the discovery of the development of chrysotile asbestos within the serpentinized peridotite. The majority of peridotite outcrops - both brown and white weathering types - contained thread veins of fibre and veinlets up to one-eighth of an inch in width. The fibre, by visual examination, appeared to be of good quality and was non-carbonated. No talc was observed. Some slip fibre was observed in association with green translucent "slip" serpentine. Although no fibre veins over one-eighth of an inch were recorded, the persistance of thread veins throughout the ultrabasic outcrops proves that conditions for fibre formation were present.

?Algoman:

An occurrence of an acid rock type was mapped in the north-west central block north of the iron formation. This has been tentatively ascribed to this period as a rhyolite porphyry. The rock, however, has been highly silicified and no structures or component minerals could be observed. As this may be a highly silicified quartzose sediment, further thin section work may be needed to observe the true type.

General Aspects:

It is noted that there are two main structural trends. In the central and west groups the strike of the schistosity is just north of east

while in the north-eastern section the strike is just to the east of north. The relationship inferred between the iron formation and the volcanics has been mentioned. The fact that some of the lavas in close proximity to the ultrabasics show the effects of serpentinisation leads to the assumption that the ultrabasics were introduced at a later period, which was followed by a period or periods of serpentinisation. Folding and faulting affecting the whole area then took place.

Magnetometer Survey:

A magnetometer survey was conducted over the Crawford River Group of claims by L. Allison with the assistance of H. McDougall, during the period January 3rd to March 15th, 1957. Magnetic readings were recorded using a Sharpe's D-I-M type instrument. This magnetometer had been calibrated in such a manner that readings approximate those obtained when using a Watts Type Vertical Variometer. This instrument was checked on the Government Magnetic Base Station at Matheson and a gamma value of 1220 corresponded to an absolute value of 57,559±15 gammas.

The base control station, established on the No. 2 Base Line at 33+00E, has a fixed value of 2049 gammas. The control stations listed below were tied into this base station:-

T. C. S. #1 - 9+00E on Base Line No. 2 - value 1629 gammas

T. C. S. #2 - 77+00E On Base Line No. 1- value 1219 gammas

T. C. S. #3 - 50+00E on Base Line No. 1- value 2049 gammas

T. C. S. #4 - 29+00E on Base Line No. 1- value 1619 gammas

T. C. S. #5 - 10+00E on Base Line No. 1- value 2863 gammas

T. C. S. #6 - 9+00W on Base Line No. 1- value 1721 gammas

T. C. S. #7 - 30+00W on Base Line No. 1- value 2049 gammas

T. C. S. #8 - 45+00W on Base Line No. 1- value 1721 gammas

Readings were observed on control and/or base stations at least four times per day as a check on the working condition of the instrument and

the daily diurnal variation.

The results of the magnetometer survey are depicted on the accompanying plans on a scale of 1 inch equals 200 feet. Contour lines of equal magnetic intensity have been drawn at 1000 gamma intervals from 0 to 6000. A 10,000 gamma contour is also shown on these plans. Interpretation has been based on a study of the contoured magnetometer map, Todd's geological plan, aerial photographs and regional geology.

The magnetometer survey has outlined two discontinuous bands of iron formation trending across the length of the claims group. The iron formation strikes east-west in the western part of the map area and swings sharply to the north-east in the eastern parts of the Central and Eastern Map Sheets. The magnetic intensity over the magnetite-rich sections varies from 4000 to over 40,000 gammas. Sedimentary (quartzitic) and volcanic facies of the iron formation are only weakly indicated magnetically and have been inferred mainly on the basis of the geological mapping. Readings over these weakly magnetic formations range from 1000 to 3000 gammas. The iron formation varies in width from 50 to 700 feet. Intense folding and/or faulting has caused several major offsets in the iron formation and this is depicted prominently on the Central Map Sheet.

This iron formation has been outlined by magnetometer surveys on the West-Benbow Lake Group, the Montgomery Lake North-East Extension Group and the Montgomery Lake Group to the south and west in Kenogaming and Penhorwood Townships. Detailed geological mapping and magnetometer surveying will be required to further delineate this formation.

In the Central and Eastern Map Sheets ultrabasic rocks are closely associated with the iron formation. It has been extremely difficult to distinguish the contacts of the serpentinized peridotite on the basis of the magnetic information due to the similarity in readings obtained over moderately magnetic iron formation and the ultrabasic intrusives. In the Eastern Map

Sheet a large intrusive body of ultrabasic rocks has been interpreted as striking in a north-easterly direction and has a maximum width of 1450 feet. Magnetic readings over this intrusive range in value from 2500 to 6000 gammas. Areas adjacent to this ultrabasic body have been interpreted as being underlain by basic intrusives and volcanics but may actually represent a highly carbonated facies of the ultrabasic. Magnetic values over these areas range from 1800 to 2500 gammas.

Volcanic rocks (intermediate to basic lavas) have been mapped to the south and east of the iron formation in the Central and Eastern Map Sheets. Magnetic readings over these volcanics range in value from less than 1000 to 2500 gammas. The remainder of the map area is underlain by gabbroic and dioritic intrusives with associated intermediate to basic lava flows. Magnetic readings over these rock types range in value from 1400 to 3500 gammas.

Detailed geological mapping and trenching, combined with further magnetic surveying, will be required to clarify the geological picture in this area and to clearly distinguish between ultrabasic intrusives and narrow bands of iron formation.

Conclusions and Recommendations:

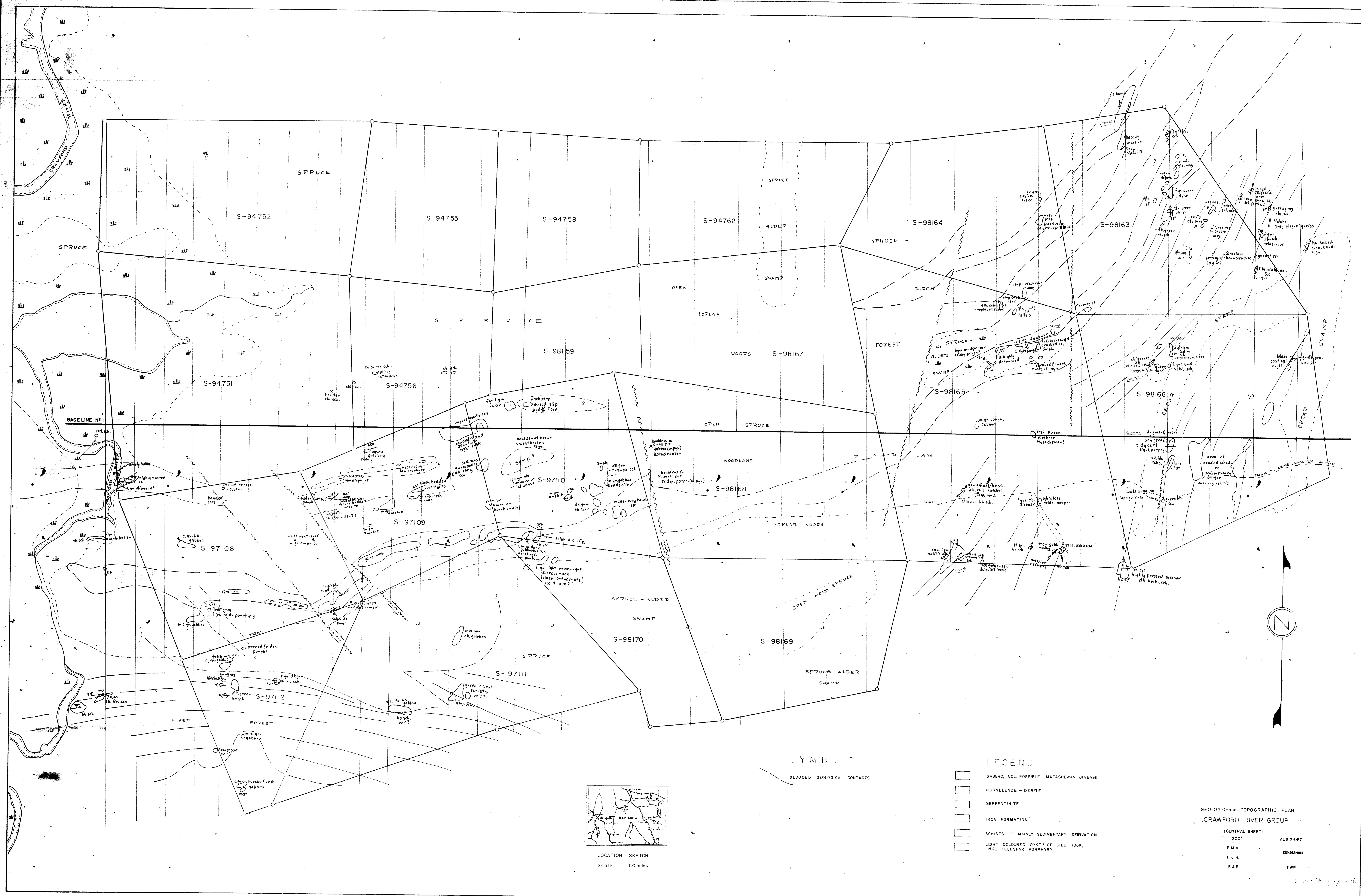
Magnetometer and geological surveys have been completed on the Crawford River Group of claims which are underlain by volcanic rocks, basic and ultrabasic intrusives and iron formation. The ultrabasic occurrences are of sufficient size and magnetic intensity to warrent further exploration. During the course of the geological mapping chrysotile asbestos veinlets were observed in the serpentinized peridotite exposures lending a brighter aspect to the potential of this claims group.

A sizeable band of magnetite-rich iron formation, enriched in sections by secondary pyrite mineralization, has been delineated in the map area by the geologic and magnetic surveys. Further prospecting and electro-

magnetic surveying is warranted over the iron formation. Detailed magnetometer surveying, using the Sharpe's A-2 type instrument combined with further geological mapping and prospecting, should be carried out over the areas underlain by ultrabasic rock types. Sampling of the more intensely magnetic sections of the iron formation is also recommended.

R. V. Todd,
Field Geologist.

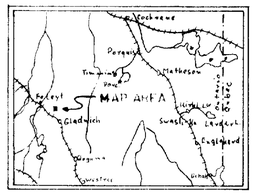
F. J. Evelegh,
Sr. Geologist.



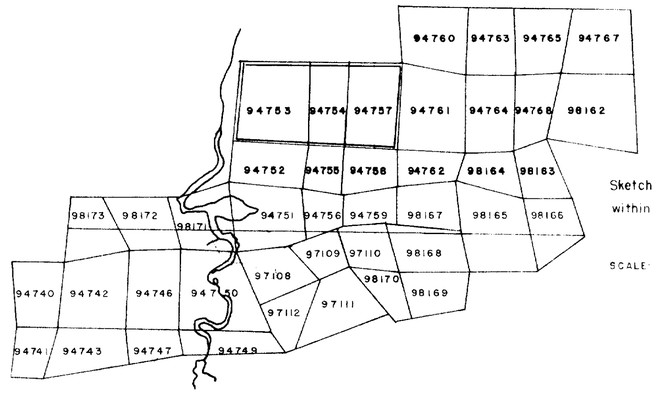
GEOLOGIC-and TOPOGRAPHIC PLAN
CRAWFORD RIVER GROUP
(CENTRAL SHEET)
1" = 200'
AUG.24/57
F.M.V.
H.J.R.
F.J.E.
TWP
LEGEND
GABBRO, INCL. POSSIBLE MATACHEWAN DIABASE
HORNBLENDE - DIORITE
SERPENTINITE
IRON FORMATION
SCHISTS OF MAINLY SEDIMENTARY DERIVATION
LIGHT COLOURED DYKE? OR SILL ROCK, INCL. FELDSPAR PORPHYRY
SYMBOLS
DEDUCED GEOLOGICAL CONTACTS
LOCATION SKETCH
Scale: 1" = 50 miles
MAP AREA
BASE LINE Nº 1
CRAWFORD RIVER
S-94752
S-94755
S-94758
S-94762
S-98164
S-98163
S-94751
S-94756
S-98159
S-98167
S-98165
S-98166
S-97110
S-98168
S-97109
S-97108
S-98170
S-98169
S-97111
S-97112
SPRUCE
SPRUCE - ALDER SWAMP
OPEN POPLAR WOODS
SPRUCE - BIRCH FOREST
OPEN SPRUCE
POPLAR
WOODLAND
POPLAR WOODS
OPEN MOSSY SPRUCE
SPRUCE - ALDER SWAMP
MIXED FOREST
CEDAR SWAMP
TRAIL
N
200


LOCATION SKETCH
Scale: 1" = 50 miles
MAP AREA
BASE LINE
Balsam
Birch
S-98173
S-98172
S-98171
CRAWFORD RIVER
Trail to Crawford Lake
Trail
Spruce
S-94740
S-94742
S-94746
S-94750
Mixed forest
S-94741
S-94743
S-94747
S-94749
low swampy ground
Poplar
Swamp
To Akweskwo Lake - 3 mi
Campsite
old campsite
high outcrop
high ground
trenches on outcrop
SYMBOLS
Swamp
High ground
Trail
Camp
Trench
Outcrop: position defined
Outcrop: position not defined
Strike of vertical schistosity
Strike and dip of schistosity
Fault
LEGEND
1 Undifferentiated sediments
2 Volcanics (a-andesite, b-basalt, c-rhyolite)
4 Ultrabasics (a-gabbro, b-serpentinized peridotite, c-qtz.gabbro-diorite)
IF Iron formation
Sketch locating claims of the
WEST SHEET within the CRAWFORD RIVER GROUP
Scale: 1" = 2000'
WEST SHEET
Geologic and Topographic Plan
Crawford River Group (West)
SCALE 1" = 200'
DATE Dec 3/56
DRAWN R. T.
TRACED J. Y.
APPROVED F. J. E.
Kenogaming Twp.
Geology by R. TODD.
210

Geologic and Topographic Plan
Crawford River Group
(Central sheet)
1" = 200'
Mar 6/57
R. T.
J. Y.
F. J. E.
Sewell
Twp.
SYMBOLS
Swamp
High ground
Trail
Trench
Outcrop: position defined
Outcrop: position not defined
Strike of vertical schistosity
Strike and dip of schistosity
LEGEND
1 Undifferentiated sediments
2 Volcanics a - andesite b - basalt c - rhyolite
4 Ultrabasics a - gabbro b - serpentinized peridotite c - qtz gabbro, diorite
IF Iron formation
Geology by: R. Todd
LOCATION SKETCH
Scale: 1" = 50 miles
MAP AREA
Sketch locating claims of the CENTRAL SHEET within the CRAWFORD RIVER GROUP
Scale: 1" = 2000'
BASE LINE #1
TIE LINE
S-94750
S-94751
S-94752
S-94755
S-94756
S-94758
S-94759
S-94761
S-94762
S-94764
S-94766
S-97108
S-97109
S-97110
S-97111
S-97112
S-98162
S-98163
S-98164
S-98165
S-98166
S-98167
S-98168
S-98169
S-98170
spruce
mixed forest
poplar
swamp
cedar swamp
Trail
Trail to Akwaskwa 1 1/4 mile
220

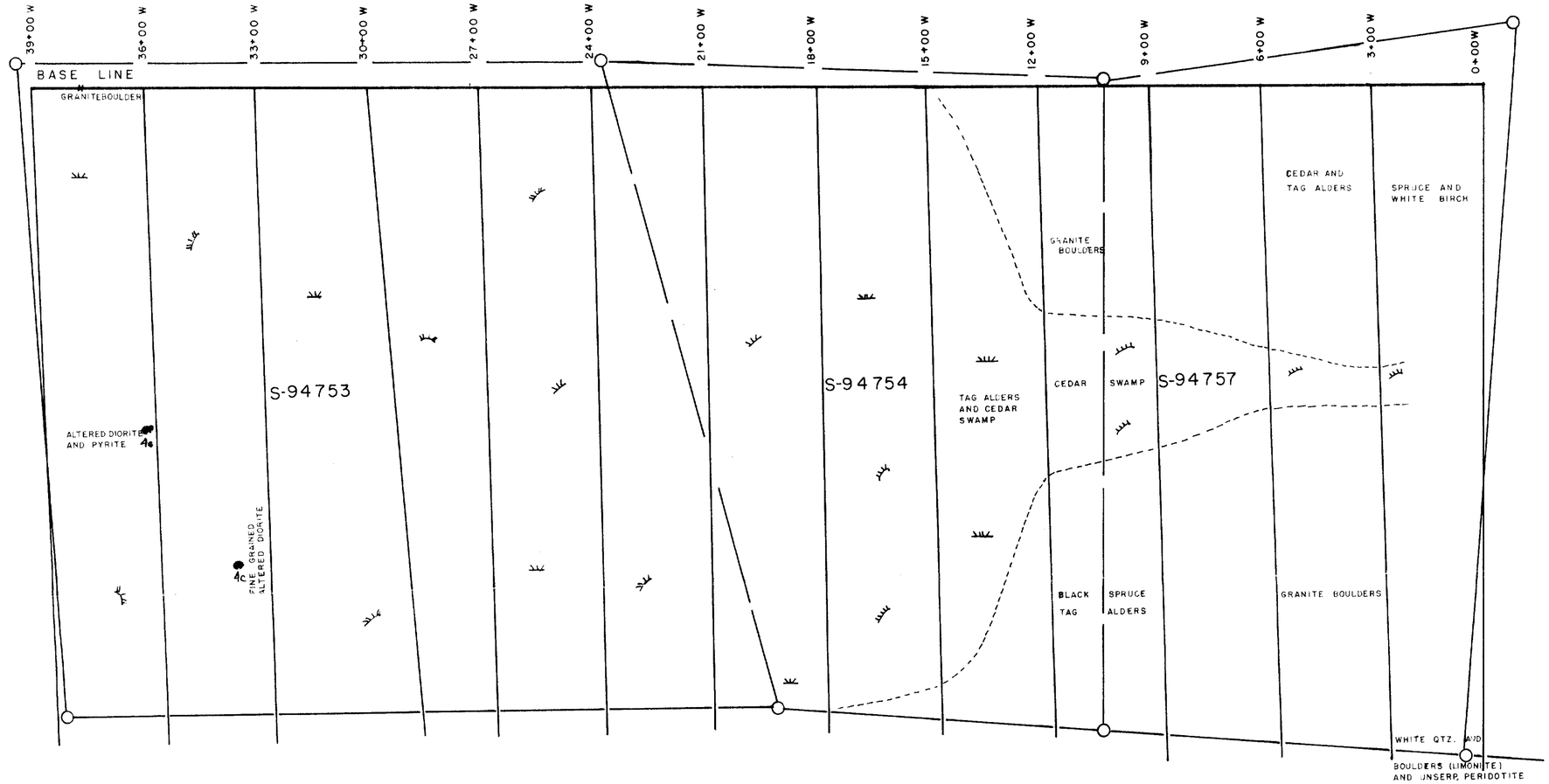


LOCATION SKETCH
SCALE: 1" = 50 MILES



Sketch locating the NORTH CENTRAL SHEET within the CRAWFORD RIVER GROUP

SCALE: 1" = 200'



SYMBOLS

Swamp

LEGEND

1	Undifferentiated sediments	
2	Volcanics	a - andesite b - basalt c - rhyolite
4	Ultrabasics	a - gabbro b - serpentinized peridotite c - gr. gabbro diorite
1 F	Iron formation	

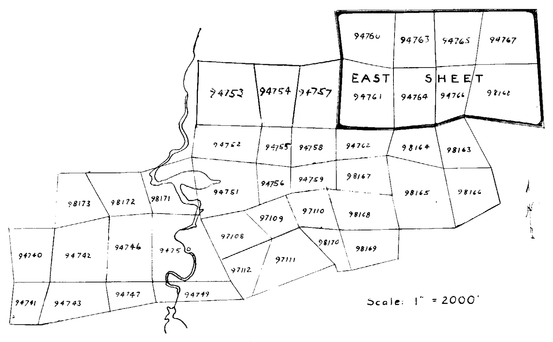
CRAWFORD RIVER GROUP
(NORTH - CENTRAL SHEET)
GEOLOGIC- & TOPOGRAPHIC PLAN

1" = 200' May 31/57

H. R.

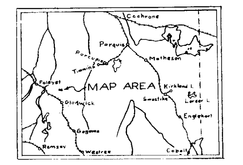
H. R. KENOGAMING TWP.

F. J. E.



Scale: 1" = 2000'

Sketch locating claims of EAST SHEET within the CRAWFORD RIVER GROUP



LOCATION SKETCH

Scale: 1" = 50 miles

SYMBOLS

- Swamp
- High ground
- Trail
- Trench
- Outcrop: position defined
- Outcrop: position not defined
- Strike of vertical schistosity
- Strike and dip of schistosity

LEGEND

1. Undifferentiated sediments
2. Volcanics (a- andesite, b- basalt, c- rhyolite)
4. Ultrabasics (a- gabbro, b- serpentinized peridotite, c- qtz gabbro - diorite)
IF Iron formation

BASE LINE #2

SEWELL TOWNSHIP

KENOGAMING TOWNSHIP

3 Mile Post

Tie Line

Birch

Spruce

94760 94763 94765 94767

94761 94764 94766 98162

HKWESKWA LAKE

CANADIAN JOHNS MANVILLE COMPANY LTD.
PETERS MINES MINE OFFICE

Geologic and Topographic Plan
Crawford River Group
(East sheet)

SCALE 1" = 200' DATE Mar 6/57

DRAWN R T Sewell

TRACED A Y Twp

APPROVED F J E

LOCATION SKETCH

BASE LINE #1

BASE LINE

51+00W 48+00W 45+00W 42+00W 39+00W 36+00W 33+00W 30+00W 27+00W 24+00W 21+00W 18+00W 15+00W 12+00W 9+00W 6+00W 3+00W 0+00

T.C.S.#8 T.C.S.#7 T.C.S.#6

4A 1F

S-94746 S-94742 S-94746 S-94750 S-94741 S-94743 S-94747 S-94744

CRAWFORD RIVER

N

SYMBOLS

- Magnetic base control station
- Contact — G - geologic, T - topographic, M - magnetic
- Fault zone
- Magnetic contour lines — contour interval 1000 gammas up to 6000g, 4000 - from 6000-10000g

LEGEND

1	1	Undifferntiated sediments
2	2	Volcanics a - andesite, b - basalt, c - rhyolite
4	4	Ultrabasics a - gabbro, b - serpentinized peridotite, c - gr. gabbro diorite
1F	1F	Iron formation

Magnetometer survey by L. Allison.

GEO-MAGNETIC PLAN
CRAWFORD RIVER GROUP
(WEST SHEET)

1" = 200 Mar 11/57

R T
J Y
F J E

Kenogaming Township

GEO-MAGNETIC PLAN
CRAWFORD RIVER GROUP
(CENTRAL SHEET)
1" = 200
MAR 20/57
R. T.
J. Y.
F. J. E.
Kenogaming Township
SYMBOLS
Magnetic base control station
Fault zone
Geologic contact
Fault zone
Magnetic contour lines
Contour interval 1000 gammas
LEGEND
1. Undifferenciated sediments
2. Volcanics a - andesite b - basalt c - rhyolite
4. Ultrabasics a - gabbro b - serpentinized peridotite c - gr. gabbro - diorite
IF Iron formation
Magnetometer survey by: L. ALLISON
Sketch locating claims of the CENTRAL SHEET within the CRAWFORD RIVER GROUP
Scale 1" = 2000'
Base line #2
Base line #1
B. L. #1
LOCATION SKETCH
Scale 1" = 50 miles
MAP AREA
BASE LINE #1
S-94752
S-94755
S-94758
S-94762
S-98164
S-98163
S-94751
S-94756
S-98159
S-98167
S-98165
S-98166
S-97110
S-98168
S-97109
S-97108
S-98170
S-98169
S-97111
S-97112
T.C.S.#4
T.C.S.#3
T.C.S.#2
4A ≠ 2?
4A? & 2?
4A + 2?
63 256
260

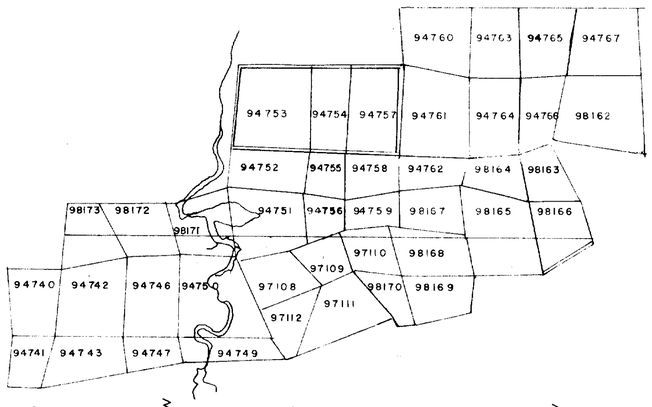
LEGEND

1. 1 — Undifferentiated sediments

2 — Volcanics — a - andesite, b - basalt, c - rhyolite

4 — Ultrabasics — a - gabbro, b - serpentinized peridotite, c - gr gabbro diorite

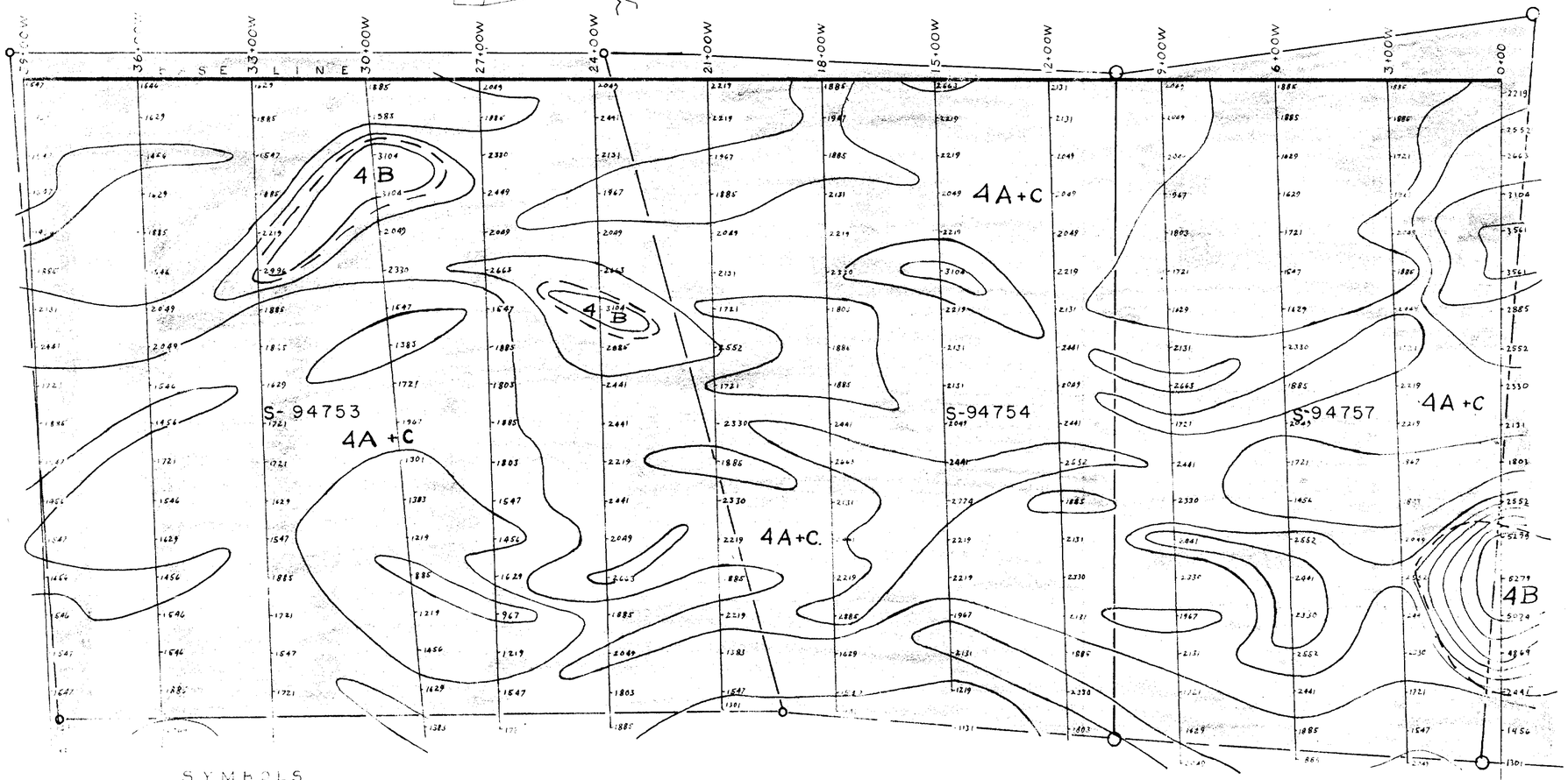
1F — Iron formation



SCALE: 1" = 2000'

Sketh locating the NORTH CENTRAL SHEET within the CRAFORD RIVER GROUP

N



N

SYMBOLS

Contact

Fault — G - geologic, M - magnetic, T - topographic

Magnetic contours
contour interval = 200 gammas

LOCATION SKETCH

SCALE: 1" = 50 MILES

CRAWFORD RIVER GROUP
(NORTH - CENTRAL SHEET)
GEO - MAGNETIC CONTOUR PLAN

1" = 200' Mar. 3 /57

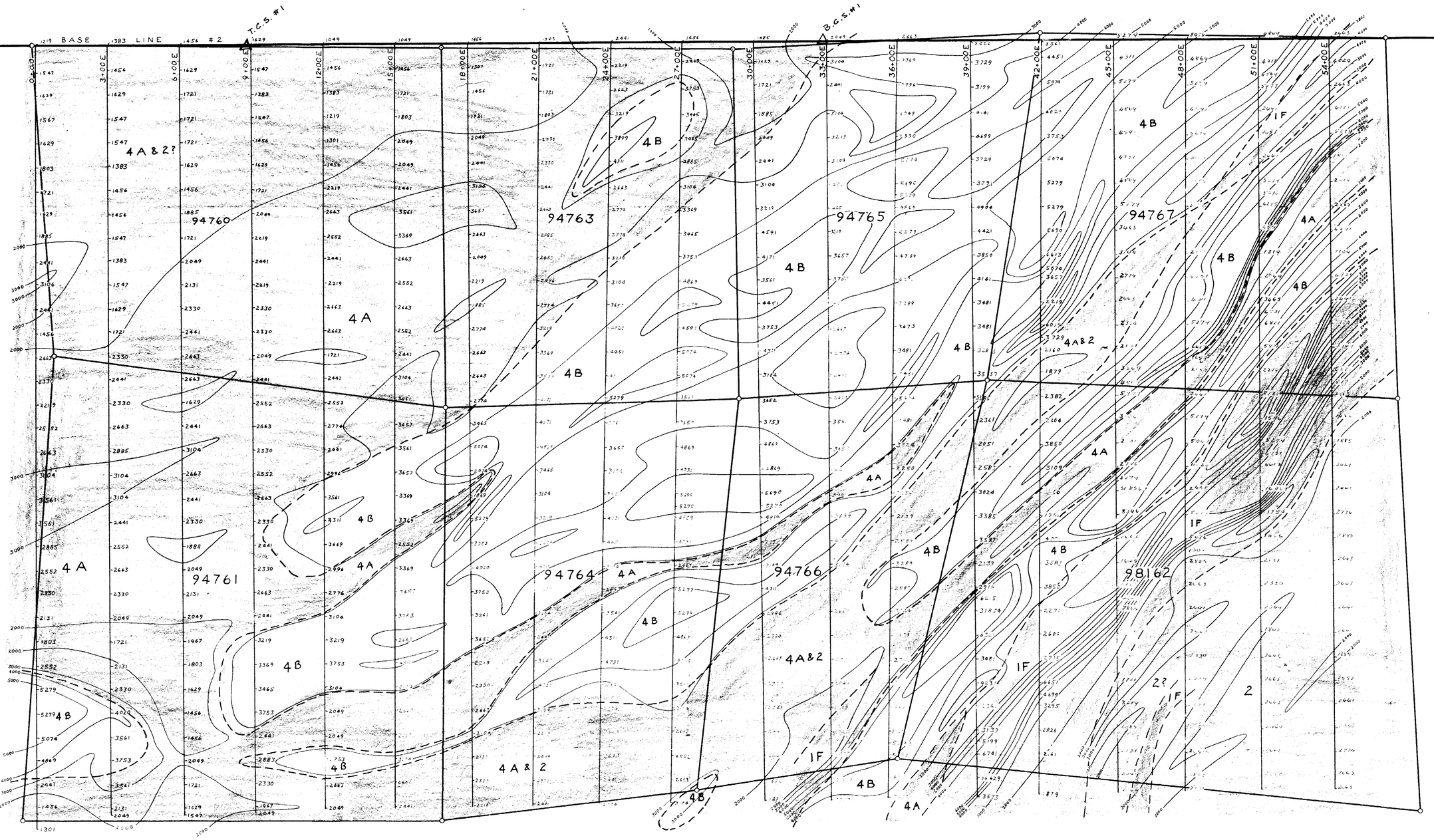
J. Y.

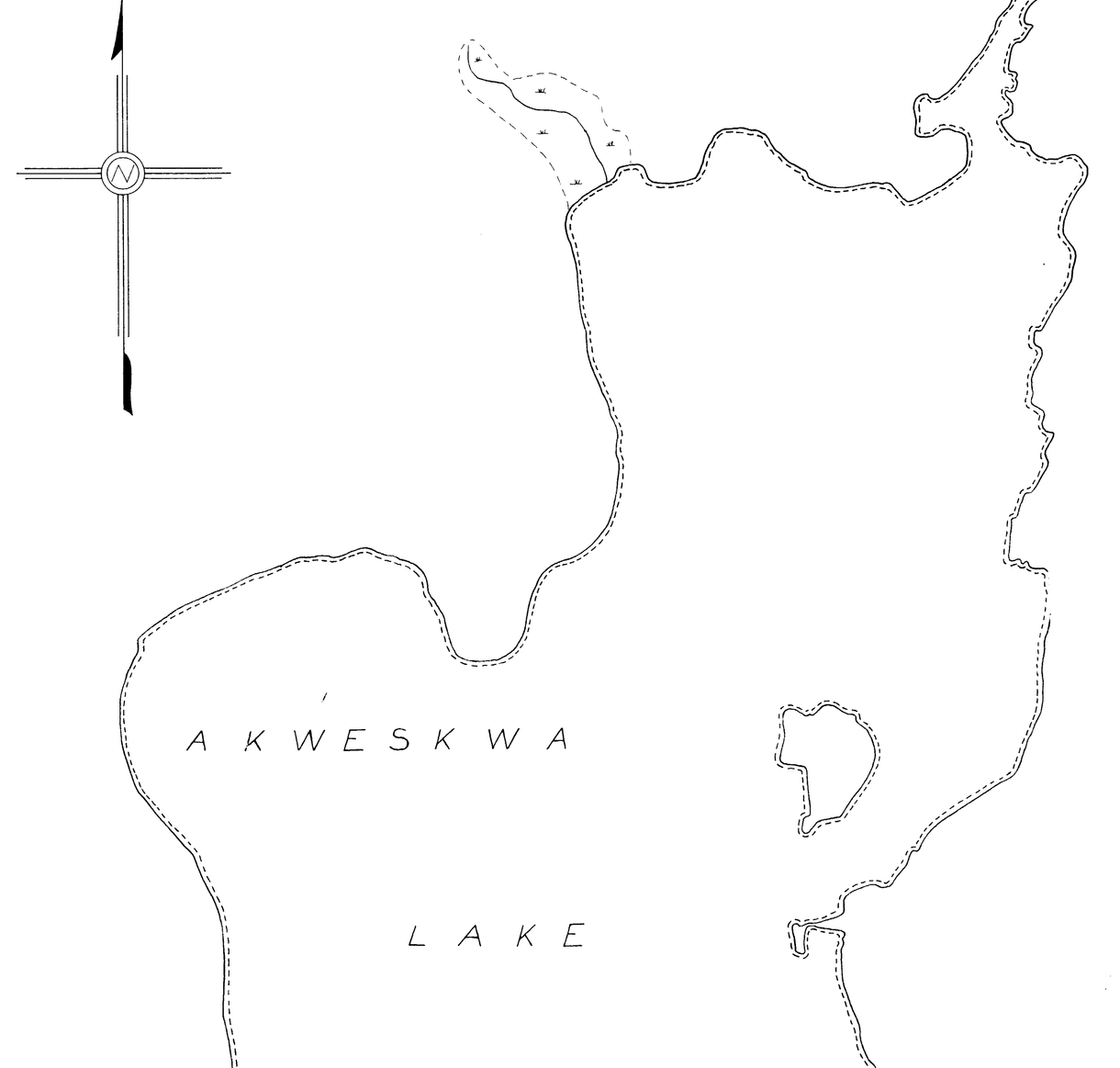
H. R. Kenogaming Twp.

F. J. E.

Sketch locating claims of the EAST SHEET within the CRAWFORD RIVER GROUP

SEWELL TWP.
KENOGAMING TWP.





GEO-MAGNETIC PLAN
CRAWFORD RIVER GROUP
(EAST SHEET)
1" = 200'
Feb 1957
R T
J Y
Kenogaming Township
F J E

LOCATION SKETCH
Scale 1" = 50 m.

SYMBOLS

- Magnetic base station
- Contacts (M = topographic, M = magnetic, G = geological)
- Fault zone
- Magnetic contour lines, Contour interval 1000 gammas

LEGEND

1. Undifferentiated sediments
2. Volcanics (a = andesite, b = basalt, c = rhyolite)
4. Ultramafics (a = gabbro, b = serpentinized peridotite, c = gr gabbro - diorite)
1F Iron formation

Magnetometer survey by L. ALLISON

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