GEOMAGNETIC SURVEY

2.638

GEOMAGNETIC SURVEY
TULLY #1 GROUP
HOLLINGER MINES LIMITED

Introduction:

During the period May 1970 to November 1970, a geomagnetic survey was performed over the Tully #1 Group. The instruments used included two ABEM MZ-4 torsion magnetometers and Sharpe's MF-1 Fluxgate magnetometer. The property consists of eighteen claims numbered:

P-102010-020 incl.; P-255751; and P-299633-638 incl.

Location and Access:

The claim group is located approximately twenty-two miles north-northeast of Timmins, in central Tully Township. The property is accessible via highways 101 and 610 and the Evelyn Township road.

Topography:

The main portion of the group is covered by an open spruce swamp with some areas of slash. The Buskegau River crosses the southeast corner of the property. Depths of overburden are generally less than one hundred feet, although further north depths greater than two hundred feet have been encountered.

Geology:

The Ontario Department of Mines Preliminary map of Tully Township infers that the group is underlain by Archean volcanics. The majority of the rocks are extrusive flows and pyroclastics, ranging from rhyolitic to andesitic in composition. Several graphitic horizons are noted and classified by the government under felsic metavolcanics.

A large mafic-ultramafic complex is situated in the central portion of the property. Rocks noted in this complex include diorite, gabbro, peridotite and serpentinite.

OCTOBER, 1971

East and west of the property, northerly trending quartz diabase dykes have been encountered during drilling.

Structurally, the group is bounded by two faults trending approximately north. The relative movement on the faults suggests a northerly displacement of the central block. All units trend in an easterly direction, with a general northerly dip. A major synclinal axis striking easterly is indicated just south of the property.

Previous Work:

The datum is presented in such a manner to provide several east-west cross sections around the property.

In 1965, Utica Mines Limited held nine claims northeast of the Hollinger Group, conducting geomagnetic and electromagnetic (Ronka MK I) surveys. Six electromagnetic conductors were outlined, five of which trend northeast. The sixth conductor, trending east is associated with a six hundred gamma magnetic anomaly. The anomaly resulted from a graphitic horizon, the magnetics being attributed to a zone of fifty percent pyrrhotite and pyrite in a rhyodacite breccia. Other rocks encountered in the hole include rhyodacite flows, tuffs and agglomerates with some greywacke.

In 1965, Consolidated Novell Mines Limited held four claims adjacent to the Utica property. Electromagnetic (VEM) surveys were performed, outlining three east-west conductors. Two holes were drilled, the first did not reach bedrock, the second was abandoned before reaching the conductor axis. Previous to abandoning the second hole, intermediate tuffs and agglomerates were encountered.

Further west, the Cincinnati-Porcupine nineteen claim group was surveyed and drilled in 1969. Electromagnetics (JEM) revealed several conductors of which two were drilled. The first conductor consisted of graphite with appreciable pyrite in the graphitic and rhyolite agglomerate zones. The second conductor drilled was essentially the same. The rocks encountered included acid to intermediate flows and tuffs, graphite and a small amount of peridotite.

Still a bit further west INCO drilled one hole encountering intermediate volcanics, graphite and diabase. The graphitic zone contained some pyrite.

Southwest of the Hollinger property, Canadian Australian Exploration Limited and Daering Explorers Corporation Limited surveyed eight claims in 1964. Geomagnetic (MF-1) and electromagnetic (Ronka MK IV) surveys were conducted and eight drill holes emplaced. The electromagnetic survey revealed four east-west bedrock conductors attributed to graphite with minor pyrite. The rocks encountered include intermediate to basic flows and pyroclastics generally carbonatized. High magnetics are coincident with peridotite.

Just east of the property, United Comstock drilled three holes on their six claim group in 1965. The two southernmost holes encountered gabbro and diabase and the northern hole intersected rhyolitic flows and pyroclastics, graphite and diabase.

Part of the property was previously held by Texas Gulf Sulphur. Three holes were drilled on the southern portion of the group. The first hole (furthest west) intersected a zone of graphite which carried massive pyrite when brecciated. The remainder of the hole contained siltstone, trachyte and diorite. The other two holes encountered dacite and andesite flows and tuffs, with minor rhyolite and graphitic horizons with pyrite. The northernmost hole collared in diorite.

Previous to this report, Hollinger filed three drill holes for assessment. All of the holes intersected andesitic and dacitic flows and tuffs with some graphitic horizons carrying pyrite. The hole emplaced in the central magnetic high contained several ultrabasic dykes.

<u>Personnel</u>:

The field survey was perform by R. C. Humphrey during the time interval previously disclosed. Drafting of the plans was done by W. B, Caughell and interpretation by the author. All are employed by Hollinger Mines Limited.

Instruments Used:

The survey was conducted using two MZ-4 torsion wire magnetometers (serial numbers 4539 and 4599), and an MF-1 fluxgate magnetometer (serial number 410114).

Instrument		Sensitivity
MZ-4	#4539	9.9 gammas per scale division
MZ-4	#4599	10.1 gammas per scale division
MF-1	#410114	1000 scale - sensitivity 10 gammas
		3000 scale - sensitivity 25 gammas

(For further information see accompanying brief on the instruments.)

Survey Method:

All of the instrument readings were obtained along cut and measured picket lines, spaced 200 feet apart, striking at 180 degrees. Individual stations were taken at 100 foot intervals along the picketed lines. The datum was organized such that the readings were converted from scale divisions to gammas and then plotted on the grid system. No fixed contour interval was adopted due to the variance in magnetic attractions.

A total of 2,108 readings were obtained from 1,732 stations over 33.65 miles of picketed lines. This 33.65 miles of line surveyed includes the Base Line which was surveyed to aid in the calculation of diurnal drift.

Results of the Survey:

The geomagnetic survey conducted reveals a large central zone of notable magnetic relief. Since diamond drilling has substantiated the existence of the mafic-ultramafic complex in one of the zones, the association is projected to the similar zones of high magnetic attraction. The higher magnetic values are assumed to be the more ultramafic member of the group.

The remaining area, with much less magnetic attraction, is subdivided into acid and intermediate to basic volcanics. Thus, interpretation rests with extrapolating drilling results in association with magnetic affinities.

The extremest magnetic lows, found adjacent to the mafic-ultramafic complex are usually attributed to a polarity change with great changes in magnetic attraction. Hence, assumed contacts need not be affected by this type of phenomena.

The holes drilled by Texas Gulf Sulphur are poorly located with respect to the grid system; therefore, the accuracy in locating formational trends is lessened.

The graphitic horizons do not appear to have any affinity for a particular rock type.

Conclusions:

Without bedrock exposures, or ample drilling data, the geology is usually contrived to fit the simplest interpretation of the data available. Thus only magnetic associations do not constitute a comprehensive picture of the complexities involved. Further electromagnetic work is normally necessitated, combined with a follow-up drilling programme.

A more detailed conclusion will follow with the electromagnetic survey results.

Bibliography:

(1) Ontario Department of Mines Preliminary Map P.699 "Tully Township", 1" = ¼ mile; 1971
.....E. G. Bright, D. S. Hunt.

(2) Assessment files - Resident Geologist's Office.

Dale R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO

42A14SE0146 2.638 TULLY

020

ELECTROMAGNETIC SURVEY

ELECTROMAGNETIC SURVEY
TULLY #1 GROUP
HOLLINGER MINES LIMITED

Introduction:

During the period March 1970 to November 1970, an electromagnetic survey was performed over the Tully #1 Group. The instruments used included an EM-17 and a Ronka Mark III horizontal loop units. The property consists of eighteen claims numbered:

P-102010-020 incl.; P-255751 and P-299633-638 incl.

Location and Access:

The claim group is located approximately twenty-two miles north-northeast of Timmins, in central Tully Township. The property is accessible via highways 101 and 610 and the Evelyn Township road.

Topography:

The main portion of the group is covered by an open spruce swamp with some areas of slash. The Buskegau River crosses the southeast corner of the property. Depths of overburden are generally less than one hundred feet although further north, depths greater than two hundred feet have been encountered.

Geology:

The Ontario Department of Mines Preliminary Map of Tully Township infers that the group is underlain by Archean volcanics. The majority of the rocks are extrusive flows and pyroclastics, ranging from rhyolitic to andesitic in composition. Several graphitic horizons are noted and classified by the government under felsic metavolcanics.

A large mafic-ultramafic complex is situated in the central portion of the property. Rocks noted in this complex include diorite, gabbro, peridotite and serpentinite.

OCTOBER, 1971

East and west of the property, northerly trending quartz diabase dykes have been encountered during drilling.

Structurally, the group is bounded by two faults trending approximately north. The relative movement on the faults suggests a northerly displacement of the central block. All units trend in an easterly direction, with a general northerly dip. A major synclinal axis striking easterly is indicated just south of the property.

Previous Work:

The datum is presented in such a manner to provide several east-west cross sections around the property.

In 1965, Utica Mines Limited held nine claims northeast of the Hollinger Group, conducting geomagnetic and electromagnetic (Ronka Mk. I) surveys. Six electromagnetic conductors were outlined, five of which trend northeast. The sixth conductor, trending east, is associated with a six hundred gamma magnetic anomaly. The anomaly resulted from a graphitic horizon, the magnetics being attributed to a zone of fifty percent pyrrhotite and pyrite in a rhyodacite breccia. Other rocks encountered in the hole include rhyodacite flows, tuffs and agglomerates with some greywacke.

In 1965, Consolidated Novell Mines Limited held four claims adjacent to the Utica property. Electromagnetic (VEM) surveys were performed, outlining three east-west conductors. Two holes were drilled, the first did not reach bedrock, the second was abandoned before reaching the conductor axis. Previous to abandoning the second hole, intermediate tuffs and agglomerates were encountered.

Further west, the Cincinnati-Porcupine nineteen claim group was surveyed and drilled in 1969. Electromagnetics (JEM) revealed several conductors of which two were drilled. The first conductor consisted of graphite with appreciable pyrite in the graphitic and rhyolite agglomerate zones. The second conductor drilled was essentially the same. The rocks encountered included acid to intermediate flows and tuffs, graphite and a small amount of peridotite.

Still a bit further west INCO drilled one hole encountering intermediate volcanics, graphite and diabase. The graphitic zone contained some pyrite.

Southwest of the Hollinger property, Canadian Australian Exploration Limited and Daering Explorers Corporation Limited surveyed eight claims in 1964. Geomagnetic (MF-1) and electromagnetic (Ronka Mk. IV) surveys were conducted and eight drill holes emplaced. The electromagnetic survey revealed four east-west bedrock conductors attributed to graphite with minor pyrite. The rocks encountered include intermediate to basic flows and pyroclastics generally carbonatized. High magnetics are coincident with peridotite.

Just east of the property, United Comstock drilled three holes on their six claim group in 1965. The two southernmost holes encountered gabbro and diabase and the northern hole intersected rhyolitic flows and pyroclastics, graphite and diabase.

Part of the property was previously held by Texas Gulf Sulphur. Three holes were drilled on the southern portion of the group. The first hole (furthest west) intersected a zone of graphite which carried massive pyrite when brecciated. The remainder of the hole contained siltstone, trachyte and diorite. The other two holes encountered dacite and andesite flows and tuffs, with minor rhyolite and graphitic horizons with pyrite. The northernmost hole collared in diorite.

Previous to this report, Hollinger filed three drill holes for assessment. All of the holes intersected andesitic and dacitic flows and tuffs with some graphitic horizons carrying pyrite. The hole emplaced in the central magnetic high contained several ultrabasic dykes.

Personnel:

The field survey was performed by R. C. Humphrey and R. Lewis during the time interval previously mentioned. Drafting of the plans was done by W. B. Caughell and interpretation by the author. All are employed by Hollinger Mines Limited.

Instruments Used:

The survey was conducted using an EM-17 (Geonics) and a Mark III (Ronka) horizontal loop electromagnetic unit. Both units are calibrated in percent, such that each reading is recorded to the nearest unit percent.

EM-17 - Geonics Limited, Toronto; Serial No. 0220

Mark III - Ronka Geophysical Instruments, Toronto; Serial No. 15.

A three hundred foot coil separation was used for both instruments during the survey. The claims surveyed by the Em-17 include P-299633-638 incl. and P-255751. The remaining claims were surveyed by the Ronka Mark III.

For further information see accompanying appendices.

Survey Method:

All of the instrument readings were obtained along cut and measured picket lines, spaced 200 feet apart, striking at 180 degrees. Individual stations were taken at 100 foot intervals, the reading relating to the point halfway between the transmitter and the receiver. Since the coil spacing was 300 feet, the instrument reading is plotted 150 feet from both the transmitter and the receiver.

The datum was then organized, such that the positive readings were plotted on the western side of the line, at an EM scale of one inch equals twenty percent. A total of 1603 readings were taken over 31.34 miles of surveyed line.

Results of the Survey:

The horizontal loop survey conducted depicts twenty-seven anomalies which trend in an easterly direction. Due to the strike of the anomalies, most of the conductors would appear to be stratigraphically controlled, bedrock conductors. The wavy profiles found on some of the lines tend to suggest conductive overburden or slope conductors. However, the effects of magnetic attraction (i.e. magnetite) will further complicate interpretation of instrument responses.

Description of the Anomalies:

Most of the medium to strong conductors found on the property have been previously drilled and attributed to graphitic horizons with or without sulphides. This previous work is concentrated in the south-central portion of the property.

These conductors are characterized by a strong inphase response with a relative to strong duplication of the inphase anomaly by the out-of-phase. It may be noted that most of the conductive zones do not plot directly over the corresponding drill information. This is related to the plotting of drill sections, where individual horizons are not plotted up dip, but in a vertical projection.

The anomaly in the northwest portion of this group, drilled by Hollinger Mines Limited, is not precisely correlating with the drill information. The only possible conductive material in the hole would be serpentine which is found in numerous stringers, and is locally sheared. However, in comparison with the Texas Gulf hole a bit southeast, a thin veneer of sediments may be located stratigraphically above the ultramafic complex. As in the Texas Gulf hole, the sediments may carry some graphitic material which would not be intersected by the Hollinger hole since it is stratigraphically below the sedimentary horizon. This would appear to be the most plausible explanation. Another theory may suggest that the instrument is actually mapping the ultrabasic complex at depth. However, this theory may not be applicable since contacts found upon drilling would not indicate any type of conductive material.

The second group of conductors is termed 'Zone A' and consists of all conductors south of the above group. Zone A contains numerous medium to poor conductors, separated by the difference in crossover interval and inphase - out-of-phase relationships. The three long conductors of medium, or medium to poor strength are believed to be a result of graphitic material - a weaker response than the above group indicating greater depth. The remaining poor anomalies may be attributed to conductive overburden or the slope of the bedrock-overburden interface. These conductors are characterized by being very wide with erratic out-of-phase responses.

Anomalies B and C are poor conductors and are largely noted through the out-of-phase responses. These conductors may be related to slope or the ultramafic-rhyolite contact.

Anomaly D and nearby short conductors also show weak responses and may be amalgamated into the group of slope conductors. They may, of course, be also due to graphitic material.

The presence of a conductor is indicated at E although the complete anomaly is not outlined. Further coverage of the conductive zone would indicate whether the anomaly is part of a wavy profile or a true conductive zone.

Anomaly F is poor in nature with the out-of-phase generally presenting a better anomaly. This negative out-of-phase may be indicative of magnetite due to the presence of an underlying ultrabasic. It is generally rather broad, with a poor inphase response, suggesting that the conductor is probably not due to graphite. Thus the zone may be a result of slope or serpentinized shears within the ultrabasic.

Conclusions:

The results of the horizontal loop survey show that most of the better conductors on the property have been drilled with little success of an economic deposit. This greatly restricts the possibilities for a future of the property.

It may be interesting, however, to re-examine the good conductor previously drilled by Hollinger (TU-2-70). This may warrant collaring the drill hole closer to the anomaly in hopes to pick up a near surface conductive zone.

Bibliography:

1. Ontario Department of Mines Preliminary Map P.699 "Tully Township"; 1" = ½ Mile; 1971.
.....E. G. Bright, D. S. Hunt.

2. Assessment Files - Resident Geologist.

Dale R. Alexander

HOLLINGER MINES LIMITED
TIMMINS, ONTARIO

APPENDIX I

The EM-17 horizontal-loop unit offers unique technical features, which greatly simplify field operations. It is a sophisticated, reliable, sensitive and accurate instrument, which can easily be handled by the normal type of field crew following the proper operating procedures.

The basic principle behind EM surveying is that certain orebodies are electrically conductive, and can be excited electrically by an "applied, primary EM field". The orebody then produces a "secondary EM field" which may be detected above ground.

In the ground EM method, the primary field is produced by the transmitting coil which is fed an oscillatory current by the transmitter itself. The secondary field, together with some primary field coming directly from the transmitter, is picked up by the receiving coil and is measured in the receiver console.

Because the secondary field is quite small, compared with the primary, it is necessary to "buckout" the primary field in the receiving coil before making secondary field measurements. This is done by means of the reference cable which carries some of the primary signal directly into the receiver. This signal also serves as a criterion by which the secondary field can be resolved into its two components (in-phase and out-of-phase,) and compared with the primary in amplitude. The relative strengths of these components become a guide to the conductivity-width product of the buried conductor, which usually reflects the quantity of conducting minerals present.

The strength of the secondary field increases as the orebody gets larger or more conductive (higher metallic or electrolyitic content). The secondary field is weaker if the orebody is deeper under the ground or if it is covered by a layer of absorbing material, such as conductive clay or salt water. By measuring the strength, character and distribution of the secondary field on the ground surface, it is possible to locate conductive orebodies and tell something about their size and nature.

The choice of coil separation is made primarily on the basis of depth of the conductor. If it is suspected that the overburden is deep or the conductor may be concealed by a layer of unmineralized rock, it is best to use a large coil separation. A conductor buried below 200 feet would not be detected without the 400 foot separation capability.

Coil separation and orientation errors are usually reflected in the in-phase readings. Coil misorientations always produce negative errors. Errors in coil separation usually produce positive in-phase errors because more often than not, survey pickets tend to be too close to one another, as a result of bends in the line and rough topography.

The EM-17 is a very sensitive, accurate instrument and is especially useful in detailing conductive zones. A one percent survey accuracy is maintained by keeping the coils coplanar within eight degrees, and a separation constant within one foot. This is often very possible in areas of little topographic relief.

APPENDIX II

Horizontal Loop - Ronka Mark III

This equipment is designed for the use of two persons on foot, for general EM work in connection with electrically conducting anomalies in the ground.

Each person carries a coil and associated equipment. The coils may be spaced 100, 200 or 300 feet apart and two frequencies of transmission are available. A null indicating meter at the receiving end will indicate the presence of a secondary field due to a conductor in the ground, as the two persons carrying the coils traverse the location.

The Receiver picks up a signal due to the primary field and the secondary field (if present) via the receiving coil, and a compensating signal inphase with the transmitted field via the compensating loop. The purpose of the receiving console is to compare these two signals and make a quantitative measure of the difference. This difference is a measure of the secondary field.

The generally accepted principles of HEM theory apply in interpreting conductors outlined by a MK III horizontal loop survey.

PERFORMANCE & CO\

42A14SE0146 2.638 TULLY

900

ASSESSMENT WORK DETAILS

Township or Area Tully Township

Type of Survey Mag.
A separate form is required for each type of survey

Chief Line Cutter or Contractor J.Chevalier and Ingamar Explorations
Name
Hwy 101, Hoyle, Ont. 362 - 7th Ave., Timmins, Ont.
Address

Party Chief R. C. Humphrey
Name
79 Tamarack Street, Timmins, Ont.
Address

Consultant
Name

Address

COVERING DATES
Line Cutting Chevalier - Dec.1/69 to Mar.31/70
Ingamar Explor. - Oct.27/70 to Nov.4/70

Field Mar.1970 (20.9 miles) Nov.1970 (12.75 mi.)
Instrument work, geological mapping, sampling etc.

Office

INSTRUMENT DATA
Make, Model and Type ABEM MZ4 Ser. #4599
" " " #4539
~~Sharpe Mf-1~~

Scale Constant or Sensitivity 10.48/S.D. & 9.98/S.D.
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count

Number of Stations Within Claim Group 1732

Number of Readings Within Claim Group 2108

Number of Miles of Line cut Within Claim Group 34.25

Number of Samples Collected Within Claim Group

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

DATE September 22, 1971

SIGNED W H Hansen
(W.H.Hansen)

P-102010
102011
102012
102013
102014
102015
102016
102017
102018
102019
102020
255751
299633
299634
299635
299636
299637
299638

If space insufficient, attach list

RECEIVED
OCT 12 1971
PROJECTS SECTION

TOTAL 18 claims

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

Performance and coverage credits do not apply to airborne surveys

SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS

AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS

Township or Area: Tully Township

Type of Survey: H.E.M.
A separate form is required for each type of survey

Chief Line Cutter or Contractor: Chevalier and Ingamar Explor.
Name: Hwy 101, Hoyle, Ont. 262 - 7th Ave., Timmins, Ont.
Address

Party Chief: R. C. Humphrey
Name
79 Tamarack Street, Timmins, Ont.
Address

Consultant:
Name

Address

COVERING DATES

Line Cutting:

Field: March 1970 (18.06 miles) Nov.1970(13.28 mi.)
Instrument work, geological mapping, sampling etc.

Office:

INSTRUMENT DATA

Make, Model and Type: Ronka H.E.M.-MK.3 & Ronka HEM-17

Scale Constant or Sensitivity: 300' Sep.

Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count:

Number of Stations Within Claim Group: 1732

Number of Readings Within Claim Group: 1603

Number of Miles of Line cut Within Claim Group:

Number of Samples Collected Within Claim Group:

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

DATE: September 22, 1971

SIGNED: W H Hansen
(W.H.Hansen)

MINING CLAIMS TRAVERSED
List numerically

P-102010
102011
102012
102013
102014
102015
102016
102017
102018
102019
102020
255751
299633
299634
299635
299636
299637
299638

TOTAL: 18

If space insufficient, attach list

RECEIVED
OCT 12 1971
PROJECTS SECTION

Send in duplicate to:
FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES & NORTHERN AFFAIRS
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(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

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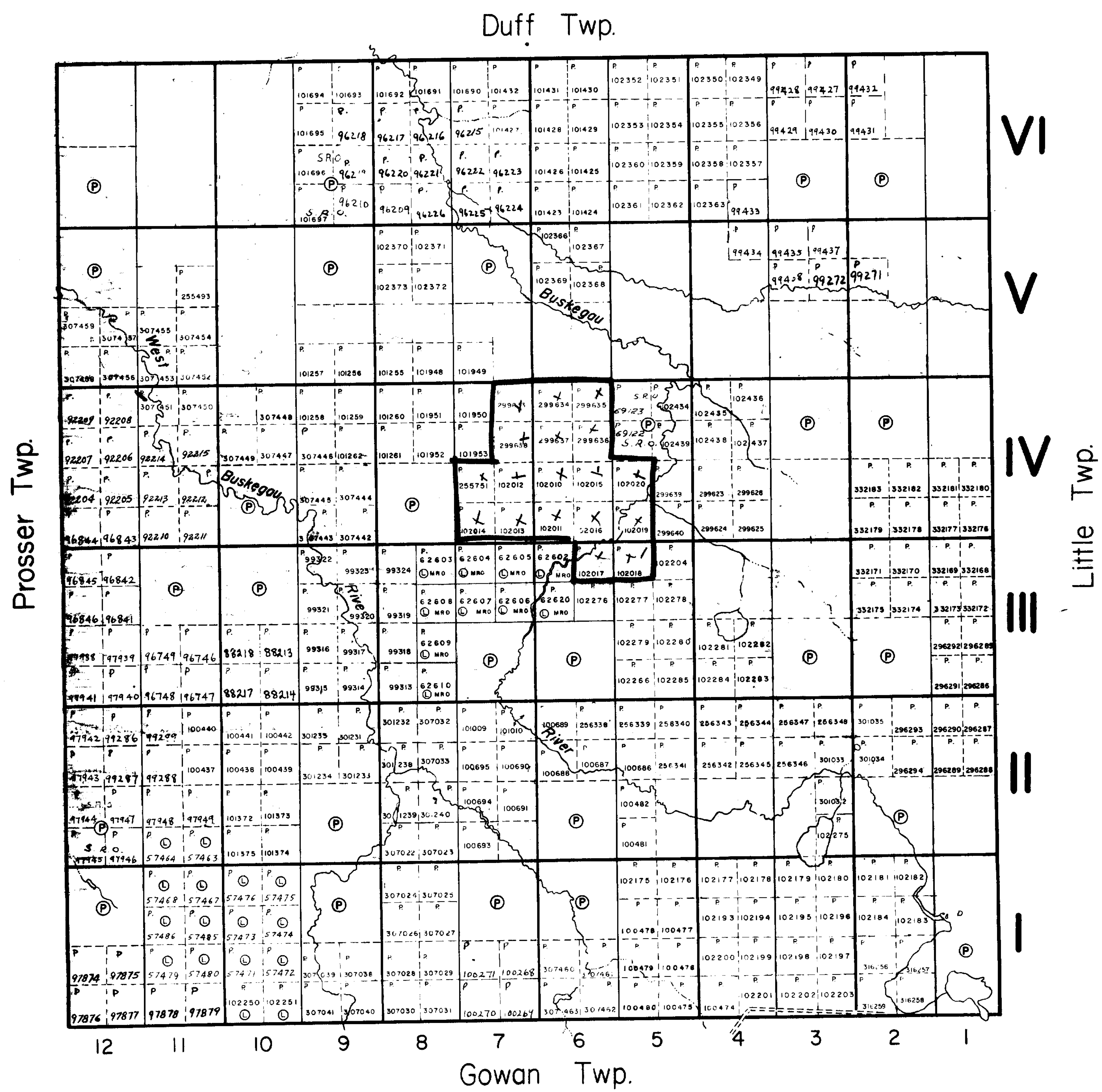
Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.



THE TOWNSHIP OF TULLY

Claim Map

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
TRAIL	

NOTES

400' Surface Rights Reservation around all Lakes and Rivers.

2.638

DATE OF ISSUE

OCT 14 1971

ONT. DEPT. OF MINES AND NORTHERN AFFAIRS

PLAN NO. – M.607

ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS

42A14SE0146 2.638 TULLY

200

M.607

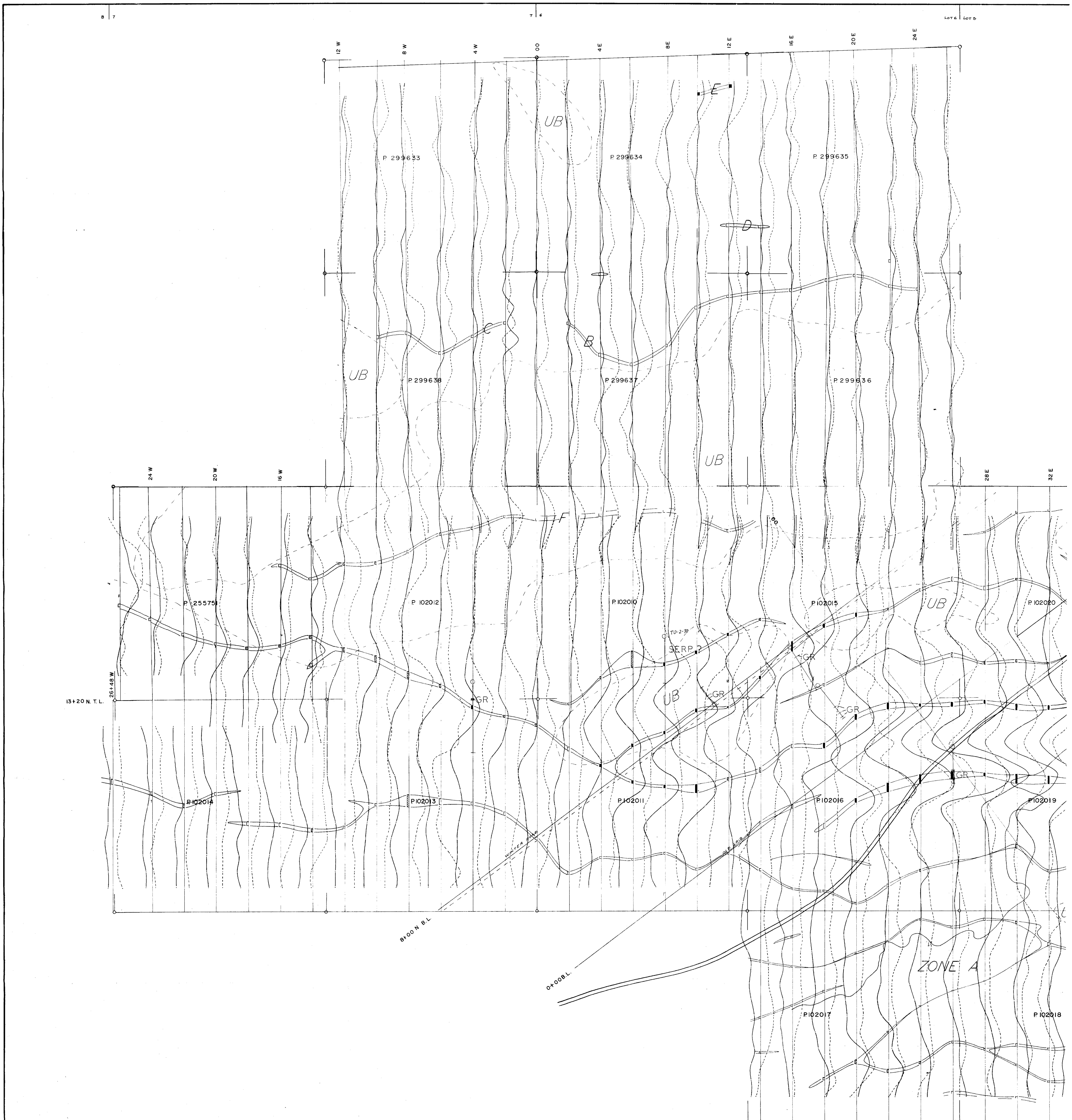
TULLY TWP.

M.607

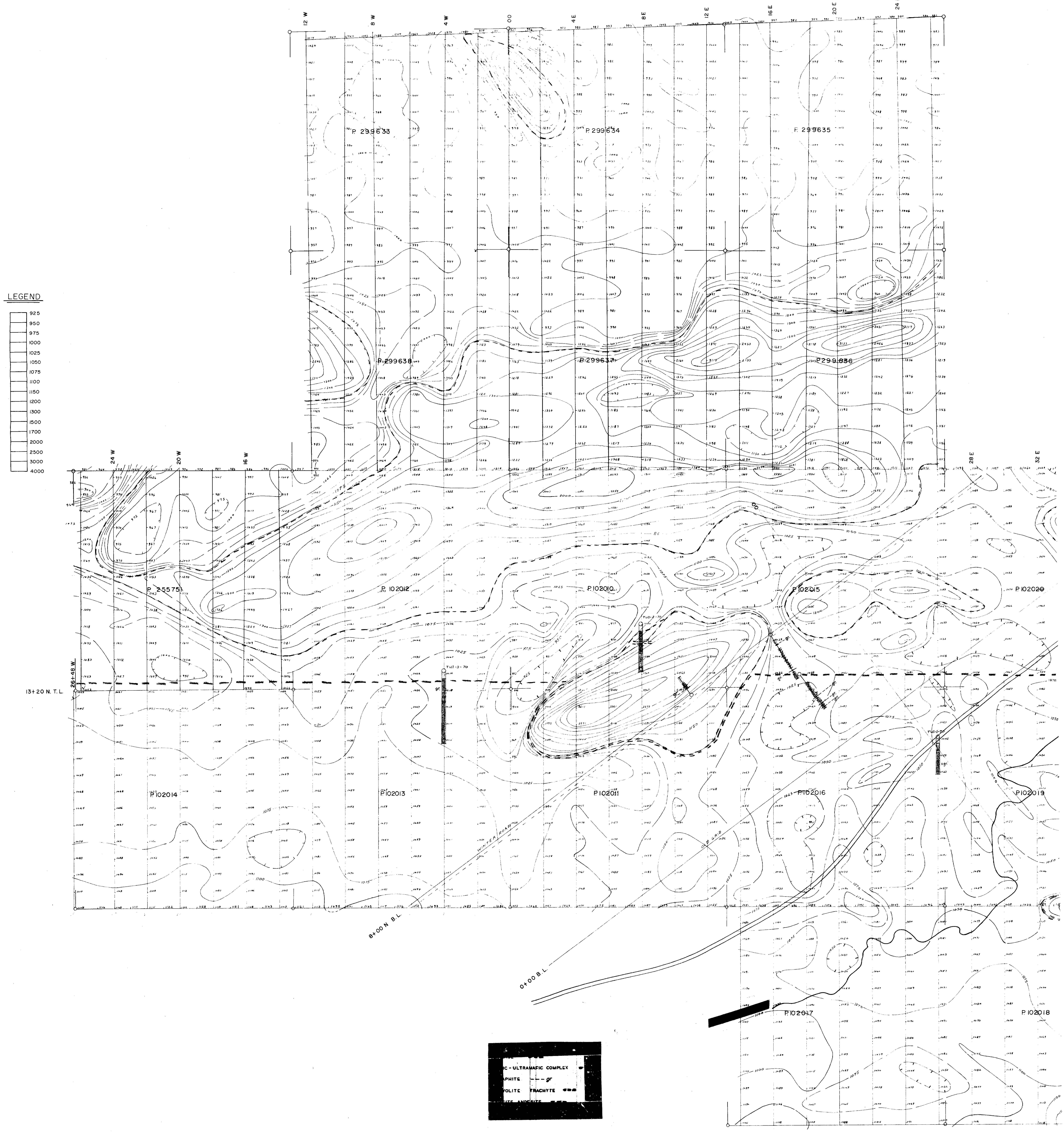
M.607

TULLY TWP.

M.607

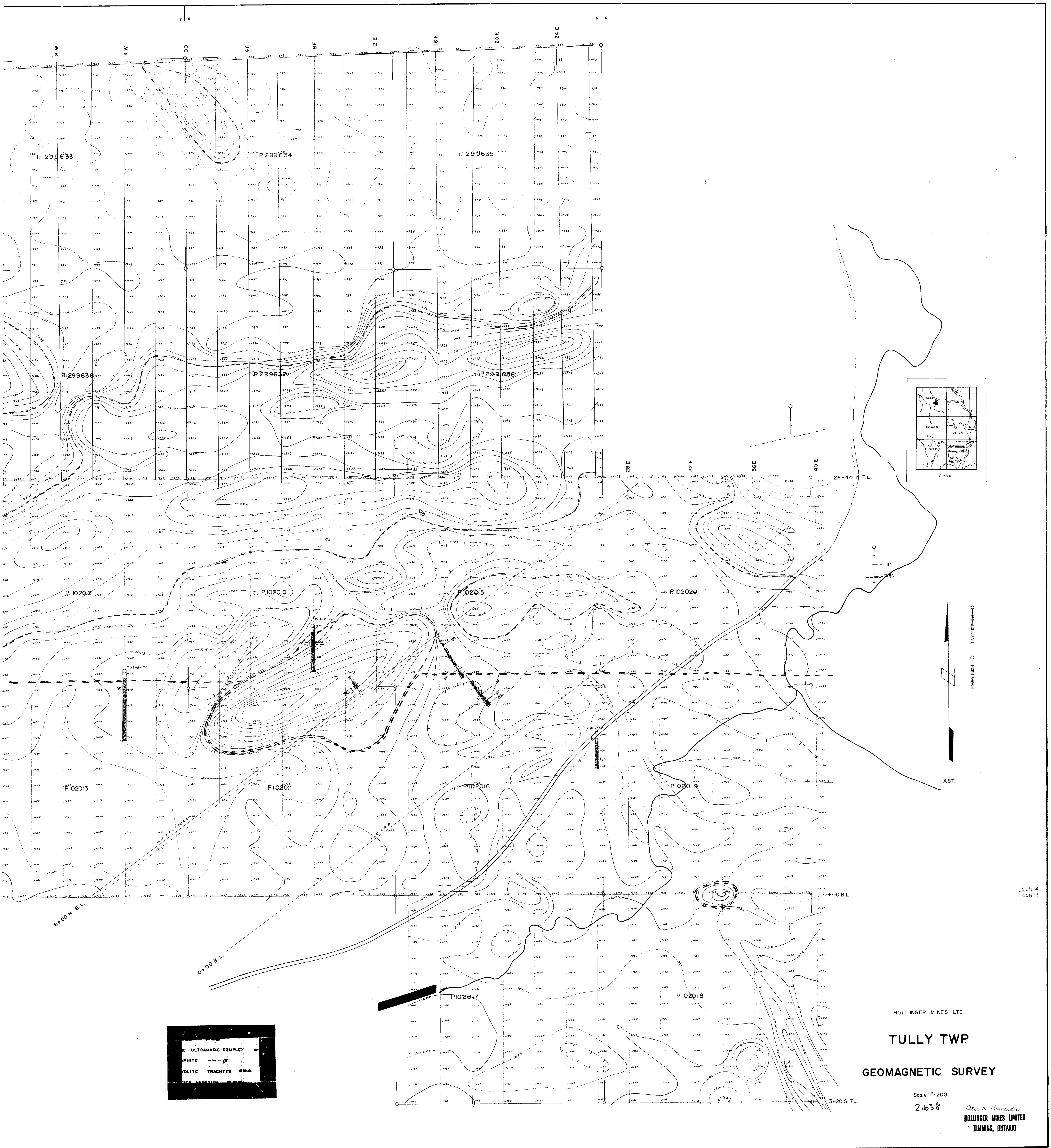


42A14SE0146 2.638 TULLY



LEGEND
925
950
975
1000
1025
1050
1075
1100
1150
1200
1300
1500
1700
2000
2500
3000
4000
12 W
8 W
4 W
00
4 E
8 E
12 E
16 E
20 E
24 E
28 E
32 E
24 W
20 W
16 W
P. 299633
P. 299634
P. 299635
P. 299638
P. 299637
P. 299636
P. 25575
P. 102012
P. 102010
P. 102015
P. 102020
P. 102014
P. 102013
P. 102011
P. 102016
P. 102019
P. 102017
P. 102018
26+48 W
13+20 N. T. L.
WINTER ROAD
OLD GRID
8+00 N B.L.
0+00 B.L.
TRACHYTE

7 | 6
LOT 6 | LOT 5
8W
4W
00
4E
8E
12E
16E
20E
24E
28E
32E
36E
40E
E
D
UB
P 299633
P 299634
P 299635
C
B
P 299638
P 299637
P 299636
F
26+40N. T.L.
P 102012
P 102010
P 102015
P 102020
SERP.?
GR
P 102013
P 102011
P 102016
P 102019
WINTER ROAD
0+00 B.L.
8+00 N B.L.
0+00 BL.
ZONE A
P 102017
P 102018
13+20 S. T.L.
CON 4
CON 3
TULLY
LITTLE
BOWMAN
EVELYN
HOYLE
MATHESON
N
AST.
GR- GRAPHITE
UB= MAFICS - ULTRAMAFICS
LEGEND
+10% 0 -10%
Coil
Coil
I.P.
In-Phase
Quadrature
GOOD ANOMALY
MEDIUM "
POOR "
HOLLINGER MINES LTD.
TULLY TWP.
H.E.M. SURVEY
Scale: 1" = 200'
2.638
Dan R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO


8 W
4 W
00
4E
8E
12 E
16 E
20 E
24 E
28 E
32 E
36 E
40 E
P. 299633
P. 299634
P. 299635
P. 299638
P. 299637
P. 299636
26+40 N.T.L.
P. 102012
P. 102010
P. 102015
P. 102020
P. 102013
P. 102011
P. 102016
P. 102019
P. 102017
P. 102018
WINTER ROAD
8+00 N. B.L.
0+00 B.L.
0+00 B.L.
13+20 S. TL.
CON 4
CON 3
TULLY
LITTLE
GOWAN
EVELYN
HOYLE
MATHESON
AST.
C - ULTRAMAFIC COMPLEX
PHITE --- gr
YOLITE TRACHYTE
HOLLINGER MINES LTD.
TULLY TWP.
GEOMAGNETIC SURVEY
Scale 1"=200
2.638
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO