



32D04SE0078 2.5332 MCFADDEN

010

RECEIVED
JAN 7 6 1 0
MINING LANDS SECTION

REPORT ON
SPECTROMETER SURVEY
HEARST AND MCFADDEN TOWNSHIPS, ONTARIO
by
R.A. MacGregor, P. Eng.
December 23, 1982

I. INTRODUCTION

A spectrometer survey was carried out on a group of claims in the south-east part of Hearst Township and south-west corner of McFadden Township during the summer of 1982. Results are plotted on the enclosed map.

II. LOCATION, ACCESS, AND OWNERSHIP

The property is located in the south-east part of Hearst Township and south-west corner of McFadden Township. There are 17 claims numbered L511691 to 511693; L531370; L532819; L532825 to L532826; L532835 to 532837; L545046 to 545050; L578358 to 578359. The claims are recorded in the name of Superior Northwest Inc., Box 1110, Sault Ste. Marie, Ontario.

The claims may be reached by following cut lines east from secondary Highway 624 about 6 miles south of Larder Lake, Ontario or by a trail which leads south along the east side of Sharp Creek from the bridge over Sharp Creek on the Martin-Bird road. The Martin-Bird road is a poor gravel road running east from Highway 624 about 5 miles south of Larder Lake.

III. PREVIOUS EXPLORATION

The claims have been explored by surface work in the past as evidenced by pits scattered over the claims and seen in the geological survey. A few old pipes and drill rods were seen in the bush, evidence that drilling may have been carried out in the past. There are no records available to the author on this past work.

IV. TOPOGRAPHY

The major part of the property is covered by Pleistocene drift, gravel and swamp. Rocky hills with cliffs of 50 to 100 feet high occur along the creek margins particularly in areas of Cobalt sediments or ultramafic volcanics. The cliffs probably represent fault scarps. Rock exposure is good in areas of Cobalt sediments and some porphyry outcrop, over much of the remaining area it is very poor. A large part of the claims are covered with drift, swamp or beaver ponds with scattered very small outcrops in some of the higher areas. The property is covered with a dense second growth of poplar, birch, alder and wild cherry with black spruce in the more swampy parts. With this is a thick growth of underbrush which makes the location of small outcrops difficult. A number of beaver ponds, or now dry beaver meadows cover many of the stream courses.

V. GENERAL GEOLOGY

The general geology of Hearst Township has been described by J.E. Thomson⁽¹⁾. The area is underlain by early Precambrian volcanics, sedimentary rocks and intrusives. The early Precambrian rocks are overlain in places by later middle Precambrian sediments.

Thomson classified the volcanic rocks as Keewatin and sediments as overlying Temiskaming. Both these rocks were cut by later Algoman intrusives. A group of diorite, gabbros and serpentized peridotites are classified as Post Keewatin intrusives.

(1) J.E. Thomson Geology of Hearst and McFadden Townships
O.S.M. Vol 56 pt. 8, 1947

V. General Geology (Continued)

The Geological succession of the area as proposed by Thomson is given in the "Table of Formations".

From the mapping, the sediments appear to be related to the volcanics and are probably the same relative age. If this is correct, they should not be correlated with the Temiskaming series.

VI. SURVEY PROCEDURE

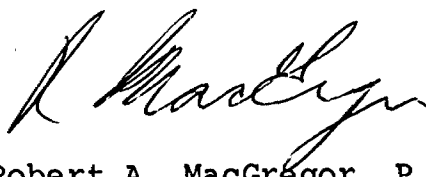
A baseline was laid out across the property at an Azimuth of approximately 345° . Crosslines were cut at 400-foot intervals perpendicular to the baseline north-east and south-west. The picket lines were chained and picketed every 100 feet. The pickets were marked with fluorescent red paint for easier observation. Surveying was also carried out on two lines from another Baseline running at approximately $S60^{\circ}E$ which ties into the grid.

A spectrometer survey was run using a Scintrex GIS-5 Digital Integrating Spectrometer, with a reading time of 10 seconds. Readings were taken at 100-foot intervals, and the type of terrain noted at each station. The looping method was used for control of variation.

VII. DISCUSSION OF RESULTS

The spectrometer readings are generally low in swampy areas and highest over outcrop. The survey was run to check for possible radioactivity in the sediments and particularly along the sedimentary contact. Based on the small areas covered, there is no radioactivity above background.

Respectfully submitted



Robert A. MacGregor, P. Eng.

December 23, 1982

TABLE OF FORMATIONS

QUATERNARY

Recent and Pleistocene: Clay, sand, gravel
Great unconformity

PRECAMBRIAN

Keweenawan or Matachewan: Diabase
Intrusive contact

Huronian (Cobalt Series) Conglomerate, greywacke, arkose
slate, quartzite.
Great unconformity

Algoman: Syenite; syenite porphyry; granite;
granite porphyry; felsite; aplite;
lamprophyre; basic syenite;
hornblende syenite; hornblende
diorite; amphibolite, hornblendite.
Intrusive contact

Temiskaming: Fine-grained sediments; greywacke,
arkose, slate, iron formation.
Conglomerate with interbedded
greywacke.
Great unconformity

Post-Keewatin: Diorite, diabase, gabbro, serpen-
tinized peridotite.
Intrusive contact

Keewatin: Early Intrusives: Quartz porphyry,
feldspar porphyry, dacite porphyry.
Basic and Intermediate Volcanics:
Greenstone, pillow lava; diabasic,
dioritic, and gabbroic lava, frag-
mental lava, agglomerate, pyroclas-
tics, dacite, talc-chlorite schists,
andesite, tuff, sheared basic lava.
Acid Volcanics: Rhyolite, cherty
tuff, rhyolite tuff, tuff agglom-
erate, fragmental lavas, trachyte.

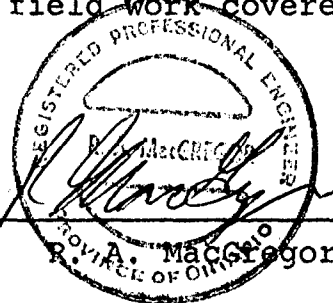
C E R T I F I C A T E

I, Robert A. MacGregor, certify:

1. I am a Mining Engineer residing at 134 Palace Drive, Sault Ste. Marie, Ontario. I have worked as a mining engineer and geologist for the past 17 years.
2. I am a member of the Association of Professional Engineers of the Province of Ontario and a member of the Canadian Institute of Mining and Metallurgy.
3. I attended Queen's University for two years in the Mining-Geology course.
4. I personally supervised the field work covered by this report.

Dec 23/82

DATE



SCINTREX

GIS-5

Integrating Gamma-ray Spectrometer

Function

The Scintrex GIS-5 Integrating Gamma-ray Spectrometer is designed specially as a portable field instrument for the detection and measurement of gamma radiation. Simple calibration procedures and switch selectable energy thresholds permit reliable differentiation between potassium (^{40}K), uranium (^{214}Bi) and thorium (^{208}Tl) radiation.

The instrument is mainly used in uranium exploration for reconnaissance prospecting, ground follow-up of airborne radiometric surveys, detailed ground radiometric surveys and semi-quantitative outcrop or laboratory assays. A secondary but important application is in geological mapping since the GIS-5 can detect changes in K, U and Th content of rocks not distinguishable by visual examination.

The GIS-5 has been designed along the lines of the successful Scintrex GIS-4 model, but with the following improvements: 1) 90 percent more crystal volume, 2) a fast-acting, loud, audio output whose pitch is proportional to the excess count rate over the threshold, rather than a constant pitch alarm, 3) a digital display with five rather than four digits, thus increasing tenfold the number of counts which can be processed in a counting period, 4) fastest display up-dating each second rather than each three seconds, 5) an improved, watertight, all metal housing, and 6) a simplified calibration procedure. Because of these improvements, the GIS-5 supersedes the GIS-4.

Operation Principle

The elements uranium, potassium and thorium as well as most of their daughter nuclides are naturally radioactive. This means that they constantly emit particles (alpha and beta) and energy (gamma rays) from their unstable nuclei. Gamma rays of specific energies are given off by the different nuclides.

Gamma rays striking the sodium iodide crystal of the GIS-5 give rise to flashes of light. These are sensed by a photomultiplier tube which converts them to electrical pulses. The amplitude of each pulse is in proportion to the energy of the incident gamma ray. These pulses are then amplified by a variable gain pulse amplifier. A digital scaler circuit counts the number of pulses during the selected counting period having amplitudes above the selected energy threshold level. This result is displayed on the front panel digital display until automatically updated by a new value at the end of the next counting period.

The GIS-5 has four different switch selectable threshold levels: Total Count, for the most sensitive, broadband detection measurements; K + U + Th, measuring energies from all three radioactive elements; U + Th, measuring energies from uranium and thorium; and Th, measuring energy from thorium only.

Semi-quantitative assays of K, U and Th in outcrops are simply made as follows: 1) At some point away from the anomalous source, calibrate the GIS-5 using the thorium oxide sample and front panel calibration control, then measure background radiation. 2) If possible, select an area of the outcrop about 1 m in diameter over which radiation levels do not vary greatly. 3) Select a counting time of 10 seconds or greater and measure the TC, K+U+Th, U+Th and Th. 4) Using the simple formulae given in the GIS-5 manual, the concentrations of K, U and Th can then be calculated.

Much more *quantitative* measurements can be made using the differential spectrometers and larger crystal detectors offered as part of the Scintrex line of radiometric instrumentation.

Qualitative measurements can easily be made with the GIS-5; for example, if only background counts are observed above the Th threshold, then the operator knows that there is little likelihood of the occurrence of thorium. Similarly, if only background counts are observed above the U + Th threshold, then the anomalous source contains neither uranium nor thorium and likely contains potassium only. Such determinations indicate the powerful advantage of using a simple instrument such as the GIS-5 rather than a scintillometer which is only capable of detecting total gamma radiation and can not distinguish the nature of the source.

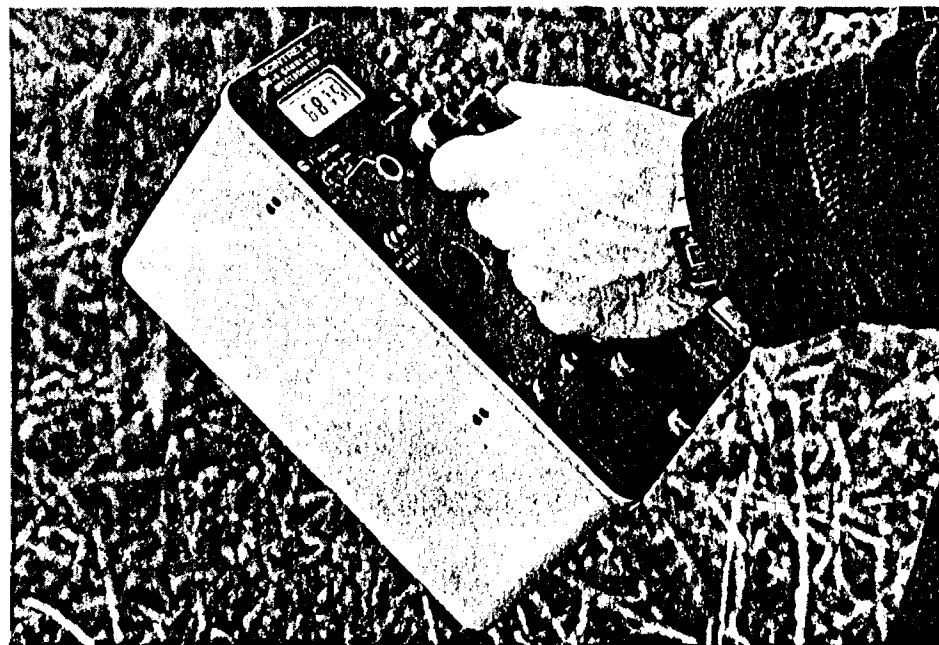
Features

Large Crystal Volume. The crystal-photomultiplier detector includes a 1.6" x 1.6" x 1.96" (5.0 cu. in, 82 cc) near-cubic, thallium activated sodium iodide crystal.

High Sensitivity. The 82 cc crystal volume and the fact that all energies above 0.05 MeV are measured in the Total Count mode provide sufficient sensitivity and statistical accuracy to detect very small changes from normal background radiation levels. Calibrations on the Geological Survey of Canada Radioactive Test Pads at Ottawa, indicate that the sensitivity of the GIS-5 in Total Count mode is 15 counts per second per ppm uranium equivalent. In comparison, an instrument containing a 1.5" x 1.5" (43 cc) cylindrical crystal with the same 0.05 MeV threshold has a sensitivity of only 5 cps per ppm U. These sensitivities are for infinite, half-space sources.

Statistical Accuracy. Good statistical accuracy for gamma-ray assaying of K, U and Th is ensured by the crystal volume, selection of counting times of up to 100 seconds and the digital readout up to 19,999 counts.

Rugged Detector. The detector is hermetically sealed, magnetically shielded and shock-mounted. It is also installed inside a sleeve of insulating foam to protect it from temperature and mechanical shocks. Instead of brittle epoxy, the photomultiplier-crystal interface bond consists of a special material of improved ruggedness and durability at low temperatures.



GIS-5

Integrating Gamma-ray Spectrometer

Loud Audio Output. The normal audio output is loud enough to attract attention even in noisy surroundings. However, when the novel resonator is screwed into place over the sound output port, the volume of the audio output is nearly doubled. Thus, the operator can control the volume of the audio output simply by deciding whether or not to use the resonator.

Fast Audio Indication. The audio output is connected directly to a precision ratemeter having a time constant of only $\frac{1}{4}$ second. This guarantees an instant response when local anomalous conditions are encountered.

Count-Rate Related Audio Output. The audio output varies in pitch with increasing count-rate above the threshold selected, providing the operator with a direct, audible, semi-quantitative indication of the relative radiation level at all times.

Variable Threshold Audio Output. The threshold level of the audio output is adjustable so that it can be operated to give a background sound continuously or to remain silent until sufficiently anomalous radiation is encountered.

LCD Digital Display. The Liquid Crystal Display consists of $4\frac{1}{2}$ digits allowing displays up to 19,999, about 250 times background in Total Count. The readings are displayed continuously and updated at the end of each counting period, as fast as once per second. Compared to an analogue meter display, the GIS-5 digital display reduces operator errors in recording since there are no scale changes. The LCD has very low power consumption and is especially selected for low temperature operation. When used in rough conditions, the solid state digital display would be more rugged and reliable than an analogue meter. Another advantage of this display is its excellent legibility.

Operator/Display Interaction. If a counting period longer than one second is selected, a colon flashes each second so that the operator knows counting is under way. Each time the display updates, a bar is seen to indicate the display of a new value. An arrow indicates an overflow condition as soon as it occurs.

Convenient Package. The handle, proven in Scintrex designs over 15 years, makes it convenient to hold and point the GIS-5, even when wearing gloves. The instrument is light and its center of gravity is such that it feels like a natural extension of the arm. A carrying strap is supplied for hands-free operation. Alternatively, it can be carried in a packsack using the audio output as an indicator of above background radiation.

Robust Construction. The case construction is of strong aluminum; the face plate is milled from thick aluminum and the handle is ABS plastic for long service life. The internal mechanical design protects the detector from mechanical and thermal shock.

Waterproofing. Waterproofing is ensured through the following features: 1) Gasket seals where the faceplate meets both the housing and the battery cover; 2) all controls have dual seals; 3) the alarm sound port is covered by a screen, backed by plastic film, 'O' ring sealed to the faceplate; and 4) the display glass is permanently mounted with silicon rubber. Most importantly, however, if dropped in water, the GIS-5 will float, thus ensuring its recovery.

Advanced Electronic Design. The electronic design is modern and stable. Advanced high quality integrated circuits of the low power consumption C/MOS and BI/MOS families have been used. Both high and low voltage supplies are accurately regulated to maintain precision. All wires leading from the main circuit board are attached with screwed down connectors for ease in servicing. The audio output transducer is a dual coil rocking armature device of very efficient design.

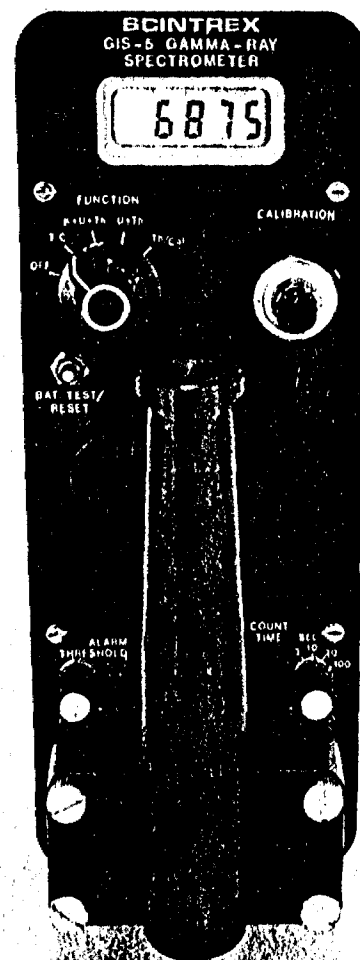
Batteries. The GIS-5 offers about 40 hours of operation from 4 'D' Cells. The batteries are housed in their own compartment, completely separate from the electronics, to ensure that instrument damage does not occur due to battery leakage. The battery condition can be read on the display so that it is easy to tell how much life is left in a set of batteries.

Selectable Counting Periods. There are five switch selectable counting periods increasing in a statistically meaningful manner from 1 to 100 seconds. The 1 second period gives rapid updating for reconnaissance work while the longer counting times ensure the appropriate statistical accuracies for assays. The reset feature allows counting to be stopped and restarted at any time.

Calibration Sample. A disc-shaped ThO_2 sample is included with each GIS-5. This sample is clipped firmly into place on the GIS-5 housing when a calibration is to be carried out.

Simple, Meaningful Calibration. The calibration procedure is simply done using a ThO_2 sample and the front panel gain control. Normally, the thorium threshold is used which has these advantages: 1) sufficient counts are received from the thorium peak to ensure a reasonably rapid calibration; 2) the calibration is made for a high energy threshold where the calibration is most accurate. Alternatively, the Total Count threshold can be used for a faster, if somewhat less accurate calibration.

Quality Control. Each GIS-5 is calibrated and tested by a Quality Control Department entirely separate from Manufacturing. This includes twenty-four hours of operation, complete visual inspection and, most importantly, a rigorous shake table test. Temperature and humidity tests are carried out in our environmental chamber on selected instruments in a production run. The Scintrex Quality Control Department represents many man-years of experience with geophysical instruments and has been accepted by the Atomic Energy of Canada Limited for the testing of electronic instrumentation for nuclear power stations.



Technical Description of the GIS-5 Integrating Gamma-Ray Spectrometer

Detector	Thallium Activated sodium iodide crystal and photomultiplier assembly, hermetically sealed, magnetically shielded and encapsulated to keep temperature and mechanical shocks to a minimum. Special ruggedized bond between crystal and photomultiplier tube.
Crystal Volume	5.0 cubic inches; 82 cc.
Crystal Dimensions	Near-cubic, 1.6" x 1.6" x 1.96". 40.5 x 40.5 x 48.5 mm.
High Voltage Supply	Generated by internal converter. Nominally 750 V.
Energy Thresholds	T.C.; all gamma energies above 0.05 MeV. K+U+Th; all energies above 1.38 MeV. U+Th; all energies above 1.66 MeV. Th+CaI; all energies above 2.44 MeV. The four thresholds are switch selectable.
Counting Periods	1, 3, 10, 30 or 100 seconds, switch selectable.
Time Base	Crystal oscillator control.
Equivalent Uranium Response For 2π Geometry	15 cps/ppm eU in T.C. 0.1 cps/ppm eU in U+Th.
Equivalent Thorium Response For 2π Geometry	5 cps/ppm eTh in T.C. 0.02 cps/ppm eTh in Th.
Equivalent Potassium Response For 2π Geometry	15 cps/% K in T.C. 1 cps/% K in K+U+Th.
Calibration	A ThO ₂ calibration source is supplied. Calibration is carried out by front panel adjustment of a ten turn, calibrated and lockable potentiometer.
Audio Output	Response time constant is 1/4 second. The frequency of the output is proportional to the excess count-rate over the threshold. The threshold is continuously variable. The frequency will increase from a few counts per second to 2000 cps. The audio output is controlled by the threshold setting. Thus, if saturation (2000 cps) is reached in T.C., a higher threshold can be used to bring the audio output within range.
Digital Display	Liquid crystal display up to 19,999.

Technical Description of the GIS-5 Integrating Gamma-Ray Spectrometer

Temperature Range	With the exception of the display, all technical specifications are met over the range of -20° to $+55^{\circ}\text{C}$. It is also recommended to store the instrument within this temperature range to protect the detector. The liquid crystal display digits may begin to change slowly at about -10°C and slow even more at lower temperatures.
Power Supply	4 'D' cells installed under removable handle assembly. Alkaline cells give 40 hours of continuous use at 20°C , without alarm. Battery condition displayed on digital display.
Dimensions	250 x 190 x 95 mm overall, including handle.
Weight	2.8 kg including batteries.
Standard Accessories	Clip-on shoulder strap for hands-free operation. Thorium test sample.
Optional Accessory	Foam-lined, fibre or metal carrying case.
Shipping Weight	Approximately 4 kg; 6 kg with carrying case.

SCINTREX

222 Snidercroft Road
Concord Ontario Canada
L4K 1B5

Telephone: (416) 669-2280
Cable: Scintrex Toronto
Telex: 06-964570

Geophysical and Geochemical
Instrumentation and Services



Report of Work *Lands adme*
(Geophysical, Geological,
Geochemical and Expenditures)



32004SE0078 2.5332 MCFADDEN

900

L 511684
W8308-004
The Mining Act

DO NOT USE SHADDED AREAS BELOW.

Type of Survey(s) RADIOMETRIC		Township or Area Hearst & McFadden	
Claim Holder(s) SUPERIOR NORTHWEST INC.		Prospector's Licence No. T-626	
Address P.O. Box 1110, Sault Ste. Marie, Ont. P6A 5N7			
Survey Company Colex Explorations Inc.	Date of Survey (from & to) Day 06 Mo. 82 Day 12 82		Total Miles of line Cut
Name and Address of Author (of Geo-Technical report) R.A. MacGregor, 134 Palace Dr. Sault Ste. Marie, Ontario			

Credits Requested per Each Column at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic - Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric - Other	
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical - Electromagnetic - Magnetometer - Radiometric - Other	Days per Claim
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Radiometric	Days per Claim

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
L	511691	<i>max credit allowed</i>			
	511692	<i>max credit allowed</i>			
	511693	<i>max credit allowed</i>			
	531370				
	532019				
	532025				
	532026				
	532035	<i>max credit allowed</i>			
	532036	<i>max credit allowed</i>			
	532037				
	545046				
	545047				
	545048				
	545049				
	545050				
	578358				
	578359				

RECEIVED
JAN 24 1983
MINING LANDS SECTION

LARDER LAKE MINING DIV.
RECEIVED
JAN 6 1983
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

See statement

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$ ÷ 15 = Total Days Credits

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.

Total number of mining claims covered by this report of work. **12 27**

Date **Jan. 4 /83** Recorded Holder or Agent (Signature) *R.A. MacGregor*

For Office Use Only

Total Days Cr. Recorded 240	Date Recorded JAN 7 1983	Mining Recorder <i>[Signature]</i>
Date Approved as Recorded	Branch Director	

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 Position of Person Verifying
R.A. MacGregor, 134 Palace Dr. S.S. Marie, Ont. P6B 5H5

Date Certified **Jan. 4/83** Certified by (Signature) *R.A. MacGregor*

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS -- If more than one survey, specify data for each type of survey

Number of Stations 605 Number of Readings 605

Station interval 100 feet Line spacing 400 feet

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: Fixed transmitter Shoot back In line Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION

RESISTIVITY

Instrument _____

Method Time Domain Frequency Domain

Parameters - On time _____ Frequency _____

- Off time _____ Range _____

- Delay time _____

- Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

SELF POTENTIAL.

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument Scintrex GIS-5

Values measured Total Count

Energy windows (levels) 10 seconds

Height of instrument 3 feet Background Count _____

Size of detector 5.0 cu. in

Overburden variable outcrop to swamp
(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____
(specify for each type of survey)

Accuracy _____
(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

Technical Assessment Work Credits

File 2.5332
Date 1983 11 30
Mining Recorder's Report of Work No. 4

Recorded Holder
SUPERIOR NORTHWEST INC

Township or Area
HEARST AND McFADDEN TOWNSHIPS

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric <u>15</u> days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L 531370 532819 532825-26 532837 545046 to 50 inclusive 578358-59

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77 (19)—80:



Ontario

Ministry of Natural Resources

Technical Assessment Work Credits

File 2.5332

Date 1983 10 17

Mining Recorder's Report of Work No. #4

Recorded Holder: SUPERIOR NORTHWEST INC

Township or Area: HEARST AND McFADDEN TOWNSHIPS

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric <u>15</u> days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	L 531370 532819 532825-26 532837 595046 to 50 inclusive 578358-59 <i>545046 to 50 inclusive</i>

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The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77 (19) — 60:



May 24/83

Mining Lands Comments

- no outcrop map
 - data not contoured or profiled
 - no legend

To: Geophysics *Mr. Roger Barlow*

Comments
 - Should outline zones of outcrop
 - Should contour total count readings

see file 2.4761 for memo by R. Barlow.

Approved Wish to see again with corrections Date *July 26/83* Signature *Douglas H. Pitcher*

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections Date Signature

To: Geochemistry

Comments

LD

Approved Wish to see again with corrections Date Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

1983 02 04

2.5332

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical
(Radiometer) Survey submitted under Special Provisions
(credit for Performance and Coverage) on Mining Claims
L 511691 et al in the Townships of Hearst and McFadden.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

DW:sc

cc: R.A. MacGregor
134 Palace Drive
Sault Ste Marie, Ontario
P6B 5H7



Ministry of
Natural
Resources

**Notice of Intent
for Technical Reports**

1983 10 17

2.5332/4

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Lands Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.



Ministry of
Natural
Resources

Nov 7/83

Your file: #4

Our file: 2.5332

1983 10 17

Mr. George J. Koleszar
Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. F.W. Matthews at 416/965-1380.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

R. Pichette:mc

Encls:

cc: Superior Northwest Inc
P.O. Box 1110
Sault Ste. Marie, Ontario
P6A 5N7

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

2.5332

#4

2.5332

1983 11 09

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Geophysical (Radiometric) survey on mining claims
L 511691 et al in the Townships of Hearst and
McFadden

The Geophysical (Radiometric) Survey assessment work credits
as listed with my Notice of Intent dated October 17, 1983
have been approved as of the above date.

Please inform the recorded holder of these mining claims
and so indicate on your records.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-1380

R. Pichette:mc

cc: Superior Northwest Inc
P.O. Box 1110
Sault Ste. Marie, Ontario
P6A 5N7

cc: Resident Geologist
Kirkland Lake, Ontario

#4

2.5332

1983 11 30

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Geophysical (Radiometric) survey on mining claims
L 511691 et al in the Townships of Hearst and
McFadden

The Geophysical (Radiometric) Survey assessment work credits
as listed with my Notice of Intent dated October 17, 1983
have been approved as of the above date. *Nov. 30*

Please inform the recorded holder of these mining claims
and so indicate on your records.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-1380

R. Pichette:mc

cc: Superior Northwest Inc
P.O. Box 1110
Sault Ste. Marie, Ontario
P6A 5N7

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Resident Geologist
Kirkland Lake, Ontario

1983 12 29

Your File: #4

Our File: 2.5332

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Geophysical (Radiometric) survey
on Mining Claims L 511691 et al
in the Townships of Hearst and
McFadden

The Geophysical (Radiometric) Survey assessment
work credits as listed with my Notice of Intent
dated November 30, 1983 have been approved as of
the above date.

Please inform the recorded holder of these mining
claims and so indicate on your records.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-1380

R. Pichette:mc

cc: Superior Northwest Inc
P.O. Box 1110
Sault Ste. Marie, Ontario
PGA 5N7

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Resident Geologist
Kirkland Lake, Ontario

2.5332

January 13, 1984

Your File: #4

Our File : 2.5332

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Geophysical (Radiometric) Survey on Mining Claims
L 511691 et al in the Townships of Hearst & McFadden

Please disregard my letter of December 29, 1983 with respect to the above mentioned survey. The approval date to be recorded on these claims is November 30, 1983.

Yours very truly,

J.R. Morton
Acting Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

R. Pichette:sc

cc: Superior Northwest Inc
P.O. Box 1110
Sault Ste. Marie, Ontario
P6A 5N7

Rad.

2531370

3/4

~~3/4~~

532819

3/4

~~3/4~~

532825

1/2

~~1/2~~

532826

1/2

~~1/2~~

532837

1/2

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545046

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545047

1/4

✓

545048

✓

✓

545049

✓

✓

545050

1/4

1/4

578358

✓

578359

✓

✓

12x20
16-25
B.
4.25

(15)

12x20

16-25

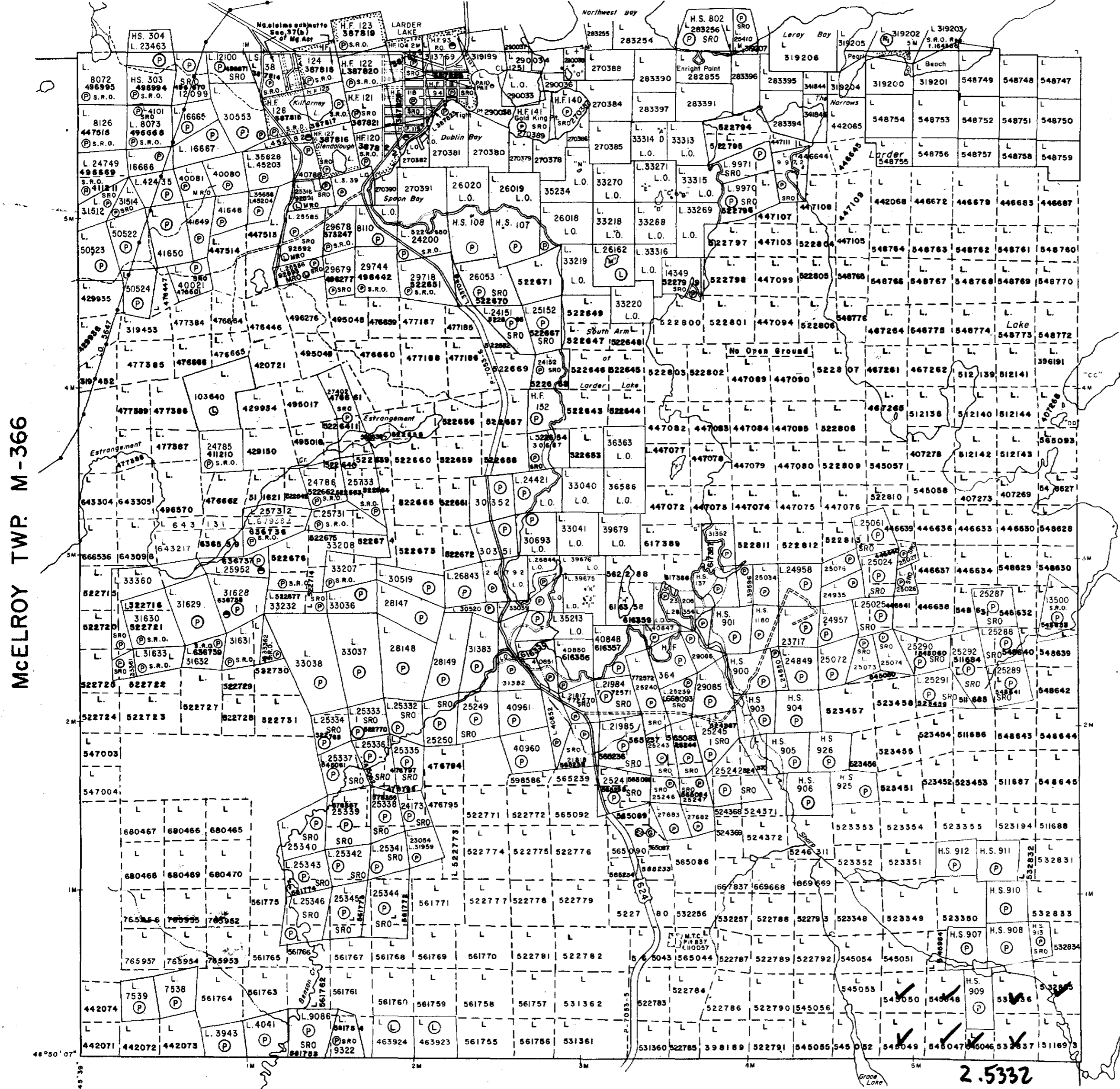
McVITTIE TWP. M-370

THE TOWNSHIP OF
OF
HEARST

DISTRICT OF
TIMISKAMING

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS



LEGEND

- PATENTED LAND ● or (P)
- CROWN LAND SALE C.S.
- LEASES (L)
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED
- PATENTED S.R.O.

NOTES

400' Surface Rights reservation along the shores of all lakes and rivers.

Township of Hearst lies entirely within the CORPORATION of the TOWNSHIP of LARDER LAKE. File: 129282.

Staking of mining claims within the Town of Larder Lake shown thus subject to Sec. 37(b) of the Mining Act (R.S.O. 1970).

SAND AND GRAVEL

- (Q) QUARRY PERMIT

Areas withdrawn from staking under Section 43 of the Mining Act (RSO1970)

OrderNo.	File	Date	Disposition
(N) W14/80NR.	164586	26/11/80	S.R.O.

DATE OF ISSUE

SEP - 8 1983

Ministry of Natural Resources
TORONTO

PLAN NO. **M-354**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

McELROY TWP. M-366

McFADDEN TWP. M-368

SKEAD TWP. M-387

2.5332



320645E0078 2.5332 MCFADDEN

McGarry Twp.

THE TOWNSHIP OF
OF
McFADDEN

DISTRICT OF
TIMISKAMING

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND Ⓟ
- CROWN LAND SALE C.S.
- LEASES Ⓛ
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES X
- CANCELLED C.

NOTES

400' Surface rights reservation around all lakes and rivers.

L.O. 12010 shown thus: L.O.

Agents with drawn from staking under Sect 4 of the Mining Act, 1850

	File	Date	Disp.
Ⓟ	W 52/74 142124	15/10/74	S.R.O.
Ⓛ	W 11/79 188522	19/6/79	S.R.B.M.R.

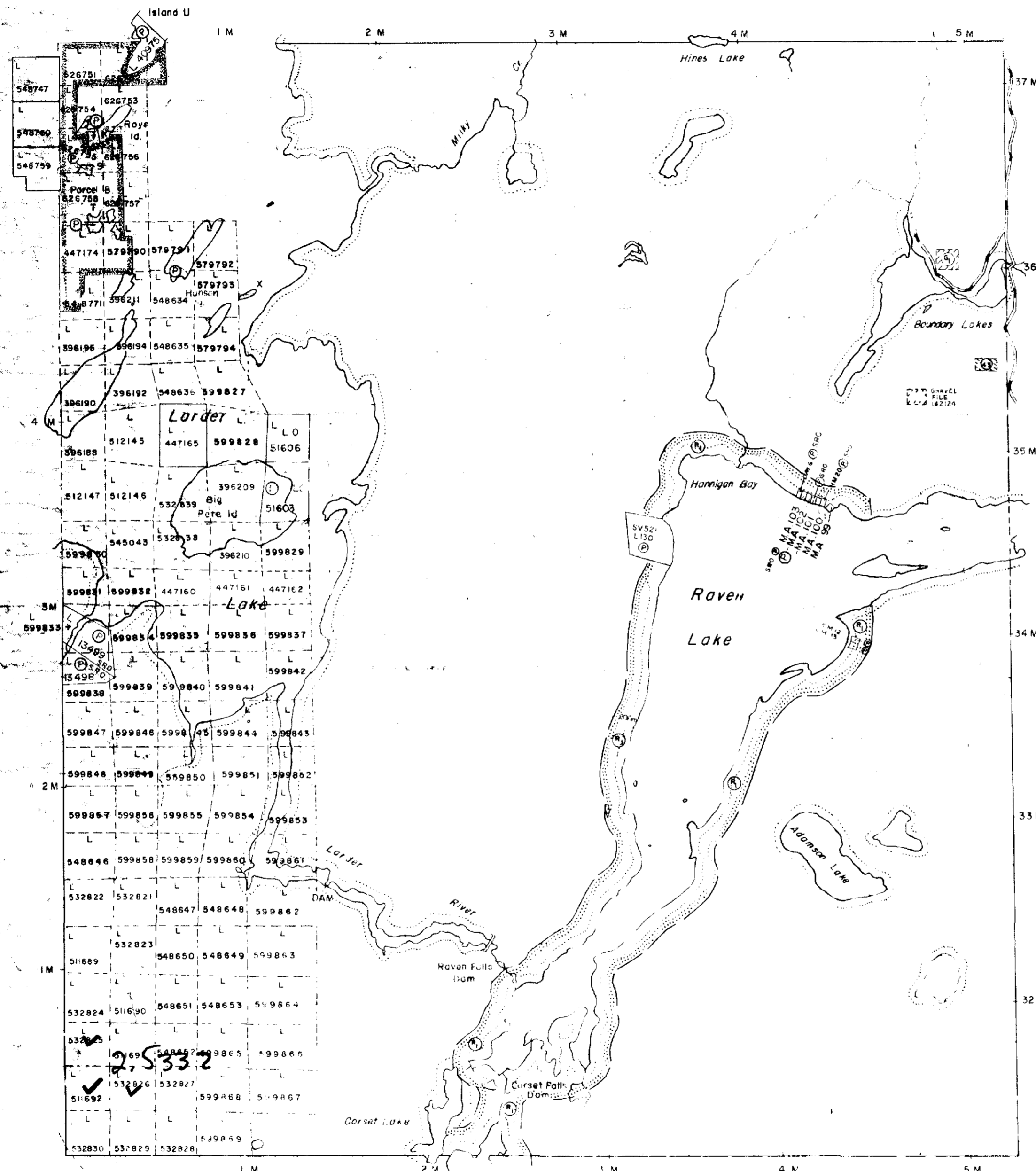
SAND and GRAVEL

Ⓟ M.N.R. GRAVEL RESERVE 30-13

DATE OF ISSUE
SEP - 8 1983
 Ministry of Natural Resources
 TORONTO

PLAN NO - M.368

PROVINCE OF QUEBEC



Hearst Twp.

Ratray Twp.



3204SE0078 2.5332 MCFADDEN

783.M

9T DAEK2

783.M

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

All unpatented mining claims accepted subject to survey, Section 118 of the Mining Act (R.S.O. 1970)

SAND and GRAVEL

(6) MTC PIT No. 1230

Areas withdrawn from mining under Section 43 of the Mining Act (R.S.O. 1970)

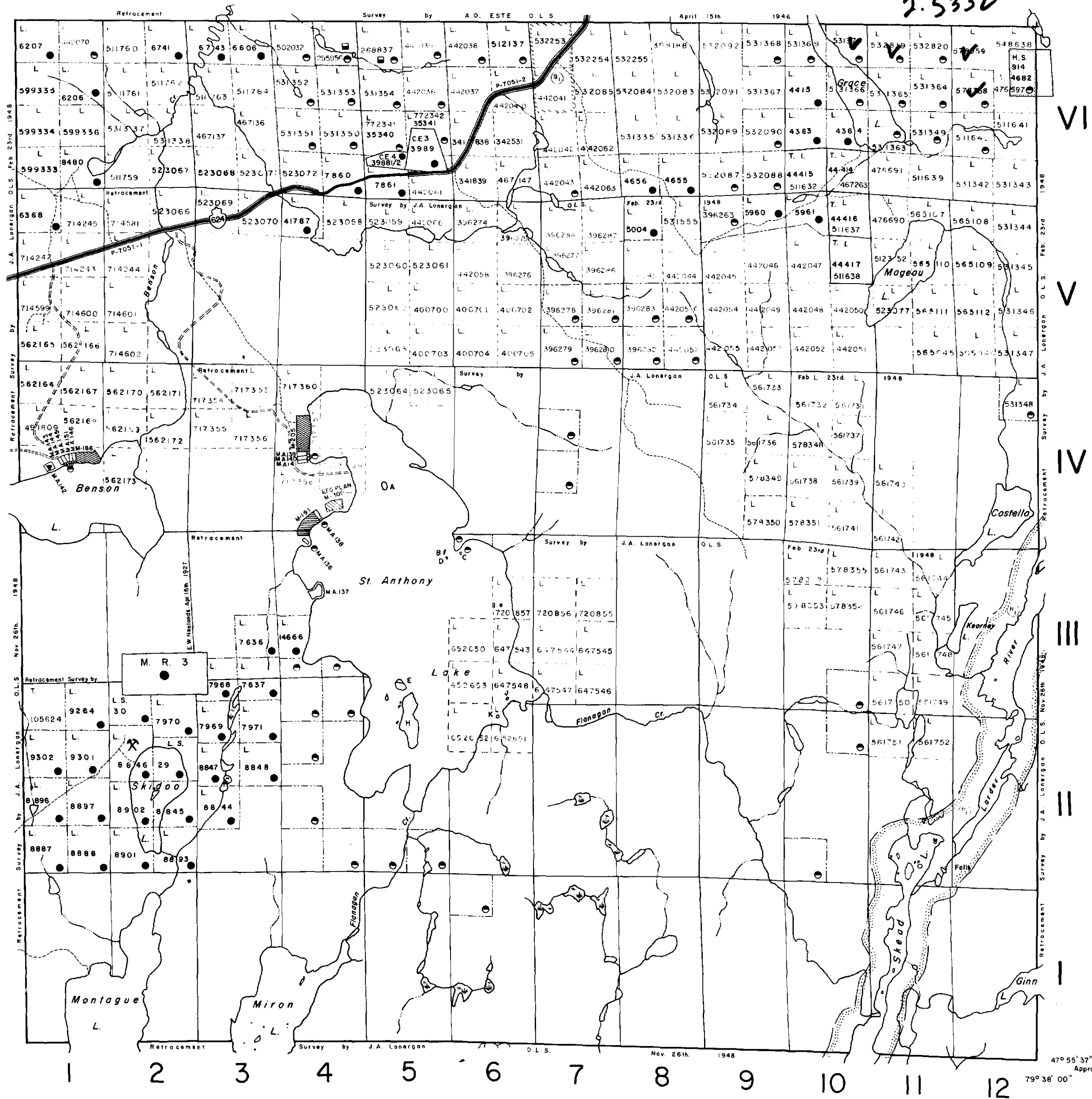
Ord. No	File	Date	Description
(6) W/79	188522	June 1979	surface & mining rights

DATE OF ISSUE
SEP 16 1983
 Ministry of Natural Resources
 TORONTO

HEARST TP. M.354

CATHARINE TP. M.336

BAYLY TP. M.323



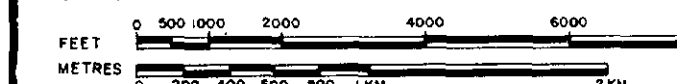
LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, BASE LINES, ETC.
 - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
 - LOT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
CROWN LAND SALE	C.S.
ORDER-IN-COUNCIL	O.C.
RESERVATION	
CANCELLED	
SAND & GRAVEL	

SCALE: 1 INCH = 40 CHAINS



ACRES HECTARES

40	16
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TOWNSHIP

SKEAD

DISTRICT

TIMISKAMING

MINING DIVISION

LARDER LAKE



Ministry of Natural Resources

Ontario Surveys and Mapping Branch

Date 10/4/74

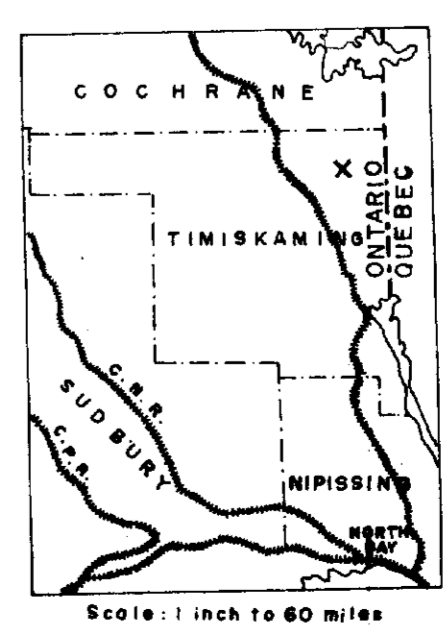
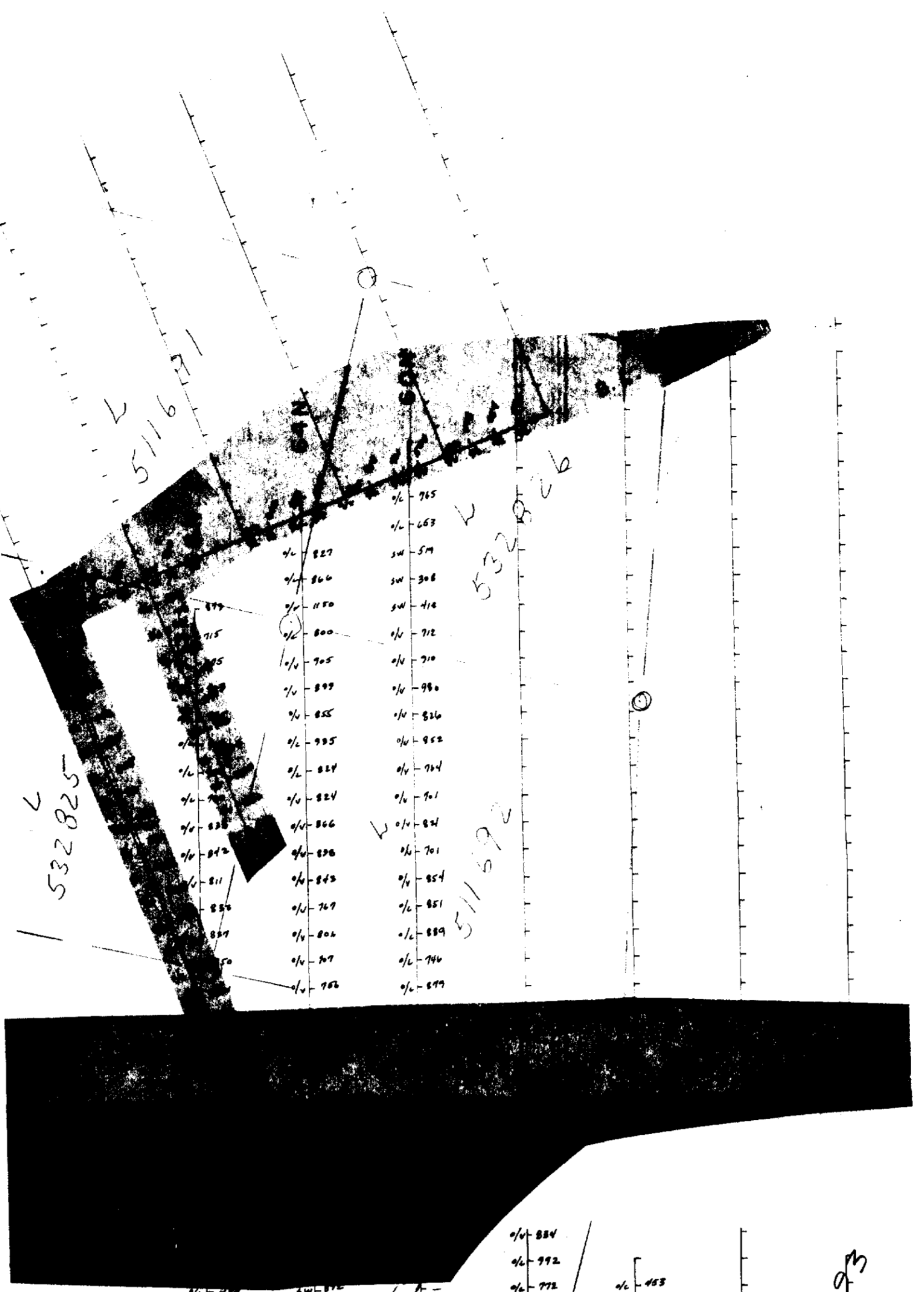
Plan No.

Whitney Block
Queen's Park, Toronto

M.387



32045E0078 2.5332 MCFADDEN



RADIOMETRIC SURVEY
 GRACE LAKE BASELINE
 SKEAD & HEARST TOWNSHIPS
 SCALE 1" = 400'

INSTRUMENT: SCINTREX GIS-5
 TOTAL COUNT
 READING TIME: 10 SECONDS

