



32D05NW0398 2.8787 HARKER

010

REPORT ON GEOLOGICAL SURVEY
HARKER LAKE WEST GROUP OF CLAIMS
HARKER TOWNSHIP
LARDER LAKE MINING DIVISION
PROVINCE OF ONTARIO.

by

F.J. Evelegh

Qual. 2063-1067

Manville Canada Inc.
Matheson, Ontario

December 10th, 1985

RECEIVED
JAN 08 1985
MINING LANDS SECTION



32D05NW0398 2.8787 HARKER

010C

Table of Contents

	<u>Page</u>
Introduction	1
Property	1
Location and Accessibility	1 - 2
Topography	2
Previous Work	2 - 3
Line Cutting and Chaining	3
General Geology	3, 4 & 5
Geological Survey	5, 6 & 7
Conclusions and Recommendations	7

- 0 - 0 - 0 - 0 -

List of Maps Accompanying Report

Geological and Topographic Plan - scale: 1" = 200'
Legend Sheet

- 0 - 0 - 0 - 0 -

REPORT ON GEOLOGICAL SURVEY
HARKER LAKE WEST GROUP OF CLAIMS
HARKER TOWNSHIP
LARDER LAKE MINING DIVISION
PROVINCE OF ONTARIO

Introduction:

The following report describes the geological survey completed during the field season of 1985 on eight mining claims recorded in the name of Manville Canada Inc. and located in Harker Township, Larder Lake Mining Division.

Cutting and chaining of grid lines were carried out by Company employees working from the Matheson office. This program was completed in 1981. Where required, picket lines were brushed out and rechained prior to completion of the geological survey in 1985.

Geological mapping was conducted by R.F. Kaltwasser, Senior Fieldman with Manville Canada Inc. The writer examined key outcrops, alteration zones, the showing area and hand specimens of all rock types during the course of this work.

Interpretation of the data and compilation of the report were the responsibility of the writer, Exploration Manager with Manville Canada Inc., based at Matheson, Ontario.

Property:

The claims surveyed are contiguous, are situated in Harker Township and are numbered L-579572-73, L-598854-55-56 and L-579583-84-85. Acreage totals approximately 320.

Staking was carried out during mid-January 1981, and the claims were recorded on January 19th and 21st. All eight claims have been transferred to Manville Canada Inc.

Location and Accessibility:

The property is located in the central part of Harker Township, immediately to the north and west of Harker Lake.

Ready access is provided by a sand and gravel road which branches off to the south from Highway No. 101 approximately twenty-five miles east of Matheson (just east of the Ghost River bridge). This secondary road leads to the property, a distance of about five

Location and Accessibility: (cont'd)

miles southeast of the highway, and passes through the claims from west to east.

Topography:

With the exception of the extreme southwestern part of the group, which is mainly spruce swamp, the claims are covered with sand and gravel till. Rock outcrops form a low hill in the northwestern section of the property.

A reforestation program has been carried out during recent years and the area is now covered with young jackpines.

Previous Work:

Geological mapping by Government geologists in the Lake Abitibi Area dates back to 1907 (Miller) with further work being carried out in 1919 (Knight et al), in 1925 (Gledhill) and in the period 1949 to 1953 (Satterly).

More recently, during the period from 1968 to 1973, L.S. Jensen, Geological Branch, Ontario Division of Mines, mapped a block extending from Rand, Garrison, Thackeray and Bisley Townships on the west to the Quebec border on the east. The results of this work have now been published in Ontario Geological Survey Miscellaneous Paper 123 entitled "Geology and Petrogenesis of the Archean Abitibi Belt in the Kirkland Lake Area, Ontario". Maps P.2433 and P.2434 covering the Lightning River and Magusi River areas, respectively, accompany this report. The Manville claims are located on the Magusi River sheet.

High Resolution Aeromagnetic Maps (O.D.M. & G.S.C.) covering the area were issued in the mid-1970's. A more recent series was issued in 1984.

Map No. 2205 - The Timmins-Kirkland Lake Sheet of the Geological Compilation Series - on a scale of one inch to four miles - includes Harker Township.

In the late 1970's the Ontario Geological Survey issued a Preliminary Map of the Kirkland Lake Data Series covering Harker Township.

Since acquisition of the Harker Lake West property in 1981 the following exploration work has been completed and submitted to the Ministry for assessment purposes; -

Previous Work: (cont'd)

- 1) power stripping in the showing area
- 2) drilling, using gasoline-powered pluggers, blasting, mucking of trenches, sampling and assaying
- 3) establishment of a picket line grid followed by magnetic and electromagnetic surveys
- 4) diamond drilling of five holes totalling 569 feet

The geological survey described in this report was completed during the field season of 1985.

Note that no records of previous work on the Manville property were on file in the Resident Geologist's office in Kirkland Lake.

Line Cutting and Chaining:

The base line was started from the No. 3 post of claim L-598854 and cut east and west to the property boundaries. Right-angled offset lines, spaced at 400' intervals, were cut and chained to the north and south of this line to cover the claims.

Marked pickets were established every 100' along the base and picket lines by chainage. Note that claim lines along the east side and the north part of the west side of the group were brushed out, chained and used for survey purposes.

The ends of several of the longer lines were chained in along the south boundary of the claims to increase the accuracy of the grid.

Total miles of base (0.99) and picket lines (6.1) cut and chained on the Harker Lake West Group was 7.09.

Where required, picket lines were brushed-out and rechained prior to completion of the geological mapping program in 1985.

General Geology:

The geology of Harker Township is described in the Sixtieth Annual Report of the Ontario Department of Mines, being Vol. LX, Part III, compiled by J. Satterly and published in 1952. The following "Table of Formations" has been taken from Page 7 of this report;-

General Geology: (cont'd)

Table of Formations

CENOZOIC:

Recent : Peat
Pleistocene : Sand, gravel, boulders; boulder clay; varved clay.

Great unconformity.

PRECAMBRIAN:

Keweenawan (?): Olivine diabase

Intrusive contact

Matachewan (?): Quartz diabase, diabase.

Intrusive contact

Algoman (?): Syenite, feldspar porphyry, lamprophyre.

Intrusive contact

Haileyburian (?): Diabase, gabbro, peridotite and dunite (serpentinized) pyroxenite.

Intrusive contact

Volcanics:

(Rhyolite: fragmental lava, porphyritic rhyolite.
(Andesite, basalt: pillow lava, diabasic lava,
(spherulitic lava, fragmental lava, tuff and
(chert; talc-chlorite schist, carbonate-
(chlorite schist.

Faulted (?) contact

Sediments:

Greywacke, arkose, iron formation.

As part of the mapping program conducted by L.S. Jensen the rocks of the Abitibi Belt have been reclassified and the Archean theolitic metavolcanics have been divided into several groups based upon earlier work carried out in Quebec. In our immediate area the Blake River Group, which is comprised of iron-rich and magnesium-rich basic to intermediate metavolcanics and metasediments overlies the older Kinojevis rocks to the north. These volcanics are located along the north limb of an easterly plunging synclinorium which is bounded to the north by the Destor-Porcupine fault zone.

General Geology: (cont'd)

The southwesterly extension of the Ghostmount fault cuts across the southern and eastern part of the Manville property. This structure is parallel to and is located to the south of the Consular-Ben Arch-McDermott structure.

Geological Survey:

Detailed geological mapping was carried out on the Harker Lake West Group of claims, intermittently, during the field seasons of 1981, 1984 and 1985. Both R.F. Kaltwasser and the writer were involved in the work. The results of the survey are shown on the accompanying Geological and Topographic Plan on a scale of 1" = 200'. Geophysical survey data (ground and air), regional geology and aerial photographs were studied prior to compilation of this report. Rock types, structures and economic geology are described in the following paragraphs.

Intermediate to mafic metavolcanics, striking approximately N60°E and dipping from 65° to 70° to the south-southeast, are exposed on the four westerly claims of the property. Thickness of individual flows ranges from a few feet to several hundred. This assemblage is comprised of andesites and basalts showing spherulitic, pillow and diabasic textural features.

Several narrow, spherulitic bands were mapped in the north-west part of the group where they form low, rounded outcrops. Weathering is to a light grey colour with spheroids ranging up to two inches in diameter. Pillowed and coarse diabasic flows occur in this sequence which appears to be repeated going from north to south. These rocks are massive and relatively unaltered with only minor evidence of chloritization and carbonatization.

The central portion of the outcrop area is underlain by pillowed andesites and basalts which are best exposed along the base line between picket lines 16+00W and 24+00W. Pillows are well formed and indicate that the flows face to the south-southeast. The rims are mainly quartz-calcite with disseminated to massive pyrite, forming an oxidized halo around the pillows. Narrow, scattered, quartz-filled fractures, striking in a southeasterly direction and dipping at shallow angles to the southwest, cut across these outcrops. Both chloritization and carbonatization have increased sharply in relation to the series of flows to the north.

Geological Survey: (cont'd)

As a result of mapping the outcrops in the south part of claims L-579572 and 579573 and a review of the ground magnetic data, a broad band of relatively massive iron-rich basaltic rocks has been interpreted as striking conformably across the property. Magnetic values over the basalts vary from 2,500 to 4,500 gammas while values over the formations to the north and south fall within the 1,200 to 2,100 range. The thickness of this horizon reaches a maximum of 1,000 feet in the central fault block thinning abruptly beyond the cross structures to the northeast and southwest.

Weathering of these basalts is dark grey to brown with the fresh surface being dark green to black. Magnetite and minor disseminated pyrite were noted in hand specimens. Pillows show a lesser degree of alteration than in the flows to the north.

Using the classification of L.S. Jensen and applying data obtained from A. Workman, geologist with Barrick Resources, the Archean theolitic mafic metavolcanics on the Harker Lake West Group of claims would be part of the Blake River Group and would be divided into Fe-rich and Mg-rich types.

Two small exposures of diorite ? were mapped near the contact between spherulitic and pillowed flows. These rocks weather to a dark green and are coarse grained. There is a sharp contact with the pillowed andesite on picket line 20+00W at 100 feet north of the base line while the south contact is carbonatized and mineralized with disseminated pyrite adjacent to the northeasterly trending fault zone.

A quartz-porphyry dike, mineralized with fine pyrite, outcrops to the south of the base line on claim L-579584. Minor carbonate alteration is associated with this intrusive.

Structurally, the southwesterly extension of the Ghostmount fault, which closely parallels major strike faults in Harker and Holloway Townships, has been interpreted as cutting across the property through the iron-rich, mafic, metavolcanics. A tight, parallel structure has been mapped in the showing area on line 20+00W at the base line.

Geological Survey: (cont'd)

Two steeply, northwesterly-trending cross faults have been delineated by both ground and aerial magnetic surveys and are located in the east and west parts of the claims. A parallel structure has been outlined on claim L-579584 by geological mapping. These late faults offset the volcanics in the map area.

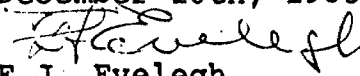
Economically, the detailed exploration programs conducted over the showing on picket line 20+00W at the base line failed to reveal any mineralization of significance. There appears to have been a lack of fracturing in the rocks adjacent to the fault zone and insufficient alteration -chloritization, carbonatization, silicification, pyritization - for precious metals mineralization.

Conclusions and Recommendations:

The results of the exploration programs conducted by Manville Canada Inc. on the Harker Lake West property have failed to reveal any mineralization of economic significance. However, the claims, which are largely overburden-covered, are strategically located in relation to the recent gold discoveries made by Barrick Resources and CANAMAX to the northeast in Holloway Township.

The Ghostmount fault is parallel to and located to the south of the McKenna fault which appears to be the controlling structure for the Barrick deposit. Since the Ghostmount structure is obscured by overburden on the Manville claims it is recommended that this fault zone be explored by diamond drilling during the 1986 field season.

Submitted : December 10th, 1985

by : 
F.J. Evelegh
Exploration Manager

LEGEND FOR DETAILED GEOLOGICAL MAPPING























Geological Legend

6	Quartz diabase, diabase
5	Granite 5a; Syenite 5b; Syenite porphyry 5-bl; Feldspar porphyry 5c; Quartz feldspar 5d; Felsite 5e; Lamprophyre 5f; Granodiorite, granitic gneiss 5g; Quartz diorite 5h.
4	Diorite 4a; Gabbro diabase 4b.
4C	Peridotite & Dunite (Serpentinized)
4D	Pyroxenite
3	Rhyolite fragmental lava
2	Andesite basalt pillow lava 2a; Diabasic lava 2b; Spherulitic lava 2c; Fragmental lava 2d; Tuff & Chert 2e; Talc-chlorite schist 2f; Amphibolite 2g.
1	Greywacke 1a; Arkose 1b; Quartzite 1c; Argillite or shale 1d; Conglomerate 1e; Iron formation 1f; Chlorite schist 1g.
CB	Carbonate rock.

Abbreviations

Asbestos	Asb	Oxidized	Ox'd
Brecciated	Brec'd	Pyrite	Py
Carbonated	Carb'd	Pyrrhotite	Po
Chalcopyrite	Cpy	Peridotite	Perid
Disseminated	Diss	Pyroxenite	Pyrox
Dark	Dk	Quartz	Qtz
Feldspar	Fp	Serpentinite	Serp
Foliated	Fol'd	Sheared	Sh'd
Grained - fine	F gr'd	Serpentinized	Serp'd
- medium	M gr'd	Strongly	Str
- coarse	C gr'd	Schistose	Sch'se
Graphite	Graph	Stringers	Strs
Gneiss	Gn	Schist	Sch
Gneissic	Gn'c	Sericitized	Ser'd
Hornblende	H'bl	Typical	Typ
Light	Lt	Thread vein	T.V.
Magnetite	Magn	Texture	Text
Moderately	Mod	Trace	Tr
Medium	Med	Volcanics	Volc
Massive	Mass	Weakly	Wk

TOPOGRAPHIC SYMBOLS

	Direction in which lava flows face, indicated by shape of pillows		Bush road		Geological Contact - assumed
	Outcrop		High ground		- definite
	Swamp or muskeg		Cabin		Swamp border
	Scarp		Shaft		Shear zone
	Creek		Pit or trench		Fault - assumed
	Drill hole		Esker		- definite
	Quartz veins				Attitudes - bedding
					- shearing
					- jointing

DEC 10 1985

MANVILLE CANADA INC.

2-8787



W850800497

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

ALY
2
Mii



32D05NW0398 2.8787 HARKER

900

Type of Survey(s) Geological		Township or Area Harker	
Claim Holder(s) Manville Canada Inc.		Prospector's Licence No. T-1330	
Address Box 610, Matheson, Ontario POK 1N0			
Survey Company same as above		Date of Survey (from & to) 10 Day 6 Mo. 8 Yr. 20 Day 9 Mo. 8 Yr.	
Total Miles of line Cut 7.09			
Name and Address of Author (of Geo-Technical report) F.J. Evelegh, Box 610, Matheson, Ontario POK 1N0			

Credits Requested per Each Claim in Columns at right

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

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

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
L	579572				
	579573				
	579583				
	579584				
	579585				
	598854				
	598855				
	598856				

RECORDED
JAN 08 1985
MINING LANDS SECTION

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. **8**

For Office Use Only

Total Days Cr. Recorded **160** Date Recorded **DEC 11 1985** Mining Recorder *[Signature]*

Date Approved as Recorded *[Signature]* Branch Director *[Signature]*

Date **Dec. 10/85** Recorded Holder or Agent (Signature) *[Signature]*

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
F.J. Evelegh Box 610 Matheson, Ontario POK 1N0

Exploration Manager

Date Certified **Dec 10/85** Certified by (Signature) *[Signature]*

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations _____ Number of Readings _____
Station interval _____ Line spacing _____
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 _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(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 _____

Mining Lands Section

File No 28787

Control Sheet

TYPE OF SURVEY

- GEOPHYSICAL
- GEOLOGICAL
- GEOCHEMICAL
- EXPENDITURE

MINING LANDS COMMENTS:

lga
r.A.

J. Hurst

Signature of Assessor

Jan 17/86

Date

GL.

2.8787

579512	✓																		
73	✓																		
83	✓																		
84	✓																		
85	✓																		
598854	✓																		
55	✓																		
56	✓																		

A.

LAMPLUGH TWP M-358

THE TOWNSHIP OF

Jan. 9/86

HARKER

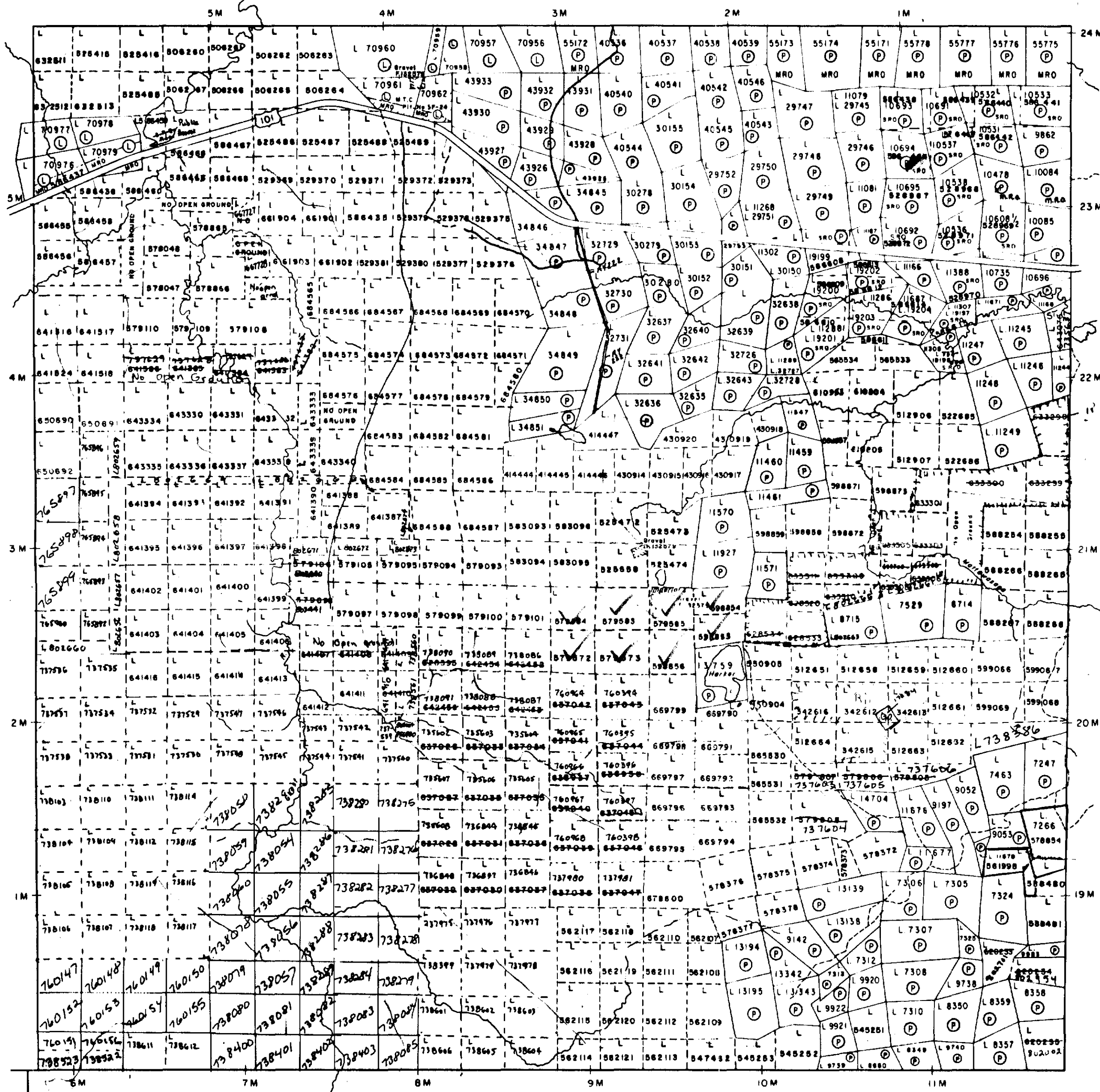
DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH 40 CHAINS

GARRISON TWP. M-349

HOLLOWAY TWP. M-356



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.

Mod.	File	Date	Disposition
R	NRW/45	Mar 5/86	MRO
R	NRW 15/85	11-28 pm	MRO
	See 36/80	Nov 4/85	MRO
		4:00 pm	withdrawing

ELLIOTT TWP M-347



32D05NW0396 2.8787 HARKER

PLAN NO. **M-353**
 ONTARIO
 MINISTRY OF NATURAL RESOURCES
 SURVEYS AND MAPPING BRANCH

#2

