

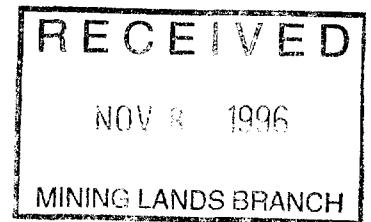
2.16886

REPORT ON
GEOLOGICAL MAPPING
AND
BEEP MAT SURVEY
SILVER CENTRE CLAIM
SOUTH LORRAIN TOWNSHIP
LARDER LAKE MINING DIVISION
ONTARIO

M. LEAHY
NOVEMBER, 1996

*Qual. #
8.2689*

2.16886



31M03NW0043 2.16886 SOUTH LORRAINE

TABLE OF CONTENTS

Location	1
Access	1
History	1
General Geology	2
Property Geology	2
Geological Survey	3
Beep Mat Survey	3
Conclusions and Recommendations	4
References	4
Claim Map	5
Geological Cross Section and Key Map	6
Table of Lithological Units	7
Plan of Geological and Beep Mat Surveys	8
Certificate	9



31M03NW0043 2.16886 SOUTH LORRAINE

010C

INTRODUCTION

LOCATION

The property herein described consists of one 20ha mining claim in South Lorrain Township, Larder Lake Mining Division, Ontario. The claim is numbered 1203524 and covers former claim numbers RL 458 and RL 459. The town of Cobalt lies about 25km to the northwest and Lake Temiskaming lies about 4 km to the east. The claim is at lat. 47 degrees 12 minutes north and long. 79 degrees 30 minutes west.

ACCESS

Secondary Highway 567 departs from Highway 11B at North Cobalt and leads south to the Lower Notch power dam at the mouth of the Montreal River. An unmaintained gravel road leads west from the highway to the property, a distance of about 1 km.

HISTORY

The property covers the former townsite of Silver Centre which is next to the Keely - Frontier mine property to the north. After the mines closed, the houses were gradually torn down until none remained. Some, including the Leahy home, were torn apart and rebuilt in Cobalt or Kirkland Lake. Several production shafts were sunk within 500m of the property on the adjacent claims. The Keely - Frontier was the biggest mine in the area with a production of almost 20 million ounces of silver. Former holders of the property include Montrose, Williams and Co. In 1925, C. W. Coe performed a geological survey of RL 458 and put down a vertical shaft 64 feet deep (Hill 60) near the southwest corner of his claim. At 40 feet, calcite stringers assayed 20 ounces of silver per ton. Several other test pits were also put down by Coe at that time. No production was ever recorded from the property.

Three other shafts, including the Nesbitt, were also sunk on the property in the early days. Diamond drill core found on the property indicates the continuance of some work that was never recorded, probably because the claims were patented for many years. The claims remained dormant until the mining rights were forfeited to the crown and they were staked on behalf of the author and B. Bishop in 1994.

GENERAL GEOLOGY

The property is in the southwestern end of the Abitibi Greenstone belt of the Superior Province. South Lorrain township is typical of the Cobalt silver camp in that it is predominantly underlain by Huronian sediments of the Gowganda and Lorrain formations. These relatively flat lying sediments rest unconformably over steeply dipping Archean volcanic rocks, mostly mafic to intermediate flows. Both the sediments and volcanics are intruded by a 300m thick, rolling sill of Nipissing diabase that covers several hundred square km in the Cobalt area. Many of the anticlinal portions of the sill have been eroded. Outcroppings of the sediments and diabase are numerous but most of the underlying volcanics are under cover. The Keely - Frontier was in a small window of volcanics that outcropped between the diabase and sediments in the north central part of the township. All of the silver mines in the Cobalt camp are in the diabase or adjacent to it, usually in sediments but sometimes in volcanics. The genesis of the silver deposits is still a subject of great debate since the diabase does not carry high silver values yet it is always present where the silver deposits occur. Most of the silver mined occurs with cobalt and nickel along with a bit of copper, arsenic and bismuth. Calcite veins are the most common host to the metallic deposits with the best values usually at the intersections of veins and other, earlier structures near the diabase contact.

South Lorrain township is within the Lake Temiskaming Rift system and is traversed by numerous northwest trending faults related to the rift. Other minor faults run perpendicular to the rift system and often truncate at rift related faults.

PROPERTY GEOLOGY

The property is entirely underlain by Nipissing diabase. Stratigraphic interpretations on a regional scale have inferred that the diabase may only be a few hundred feet deep at this point. Immediately to the north and west, mafic volcanics outcrop on the Keely - Frontier mine property. The diabase sill forms an anticlinal structure that dips to the west at 15 to 34 degrees. Several calcite veins, some with cobalt bloom and silver, are reported to occur on the property. The Wettlaufer fault traverses the east half of the claim and strikes at about N 15 E. The Nesbitt and Hill 60 shafts are close to this fault. About 500m south of the property, the Wettlaufer Mine produced 2,593,041 ounces of silver and 23,910 pounds of cobalt. This fault, especially at depth where it intersects the diabase contact with underlying sediments and volcanics, is the prime target for silver on the property.

GEOLOGICAL SURVEY

During the summer of 1996, a flag line grid was established over the property. Line spacing was 300 feet and stations were chained at 100 foot intervals. A total of 5700 feet of line was flagged and used for control of the geological and beep mat surveys. All lines were surveyed and some traverses were made between lines in areas of outcrop. A large hill of diabase outcropping occupies the north half of the property and a few low outcrops were found along the south and east boundaries. Much of the south half of the property is low, wet ground. The low ground is vegetated with black ash, cedar, balsam and cattails. The high ground is vegetated with pine, spruce, maple, poplar and balsam. An understory of alder, hazel and raspberry bushes grows as scattered patches.

The purpose of the geological survey was to map all outcrops, veins, pits, trenches and shafts. The only rock type encountered in the course of the survey was Nipissing Diabase cut by a few narrow stringers of calcite. The calcite stringers were only found in the rock dumps next to the shafts and pits. All the trenches mapped were filled with overburden and no attempt was made to clean them out at this time. Samples examined at the rock dumps contained only a trace of cobalt bloom and a few calcite stringers. All the rock dumps in the area have been extensively picked over by rockhounds with metal detectors and any good specimens have been taken from surface. The diabase varies from fine to medium grained and is dark gray to black. It is mainly quartz diabase with lath shaped plagioclase crystals of labradorite composition in a pyroxene groundmass. The quartz is present mainly as micrographic intergrowths with the plagioclase. Age has been determined by the OGS to be 2,095 million years. A few feet of small diameter diamond drill core were found just south of the #1 post near the lake. It appears that someone may have tried to drill a hole toward the Wettlaufer fault under the lake but no casing was found to confirm this theory. Outcrops on either side of the Wettlaufer fault were examined closely for calcite veins but the fault follows low ground and few outcrops are close enough to give any indication of the fault. The one notable exception is the Hill 60 shaft near the south boundary. It is the only place on the property where silver values are reported and cobalt bloom was found on the dump.

BEEP MAT SURVEY

A Beep Mat survey was conducted over the claim using the flag line grid for control. Brian (Tony) Bishop was the operator. Continuous readings were taken along all lines, along crossover traverses between lines and along the road. The purpose of the survey was to search for buried silver - cobalt veins and mineralized float. No veins or mineralized float were found. Since the claim was part of the townsite of Silver Centre there is a lot of garbage buried in the bush that gave false readings. The false readings were dug up, the debris removed, and the readings were retaken to make sure they did not mask any float or bedrock mineralization. All the rock dumps around pits and shafts were also checked with negative results.

CONCLUSIONS AND RECOMMENDATIONS

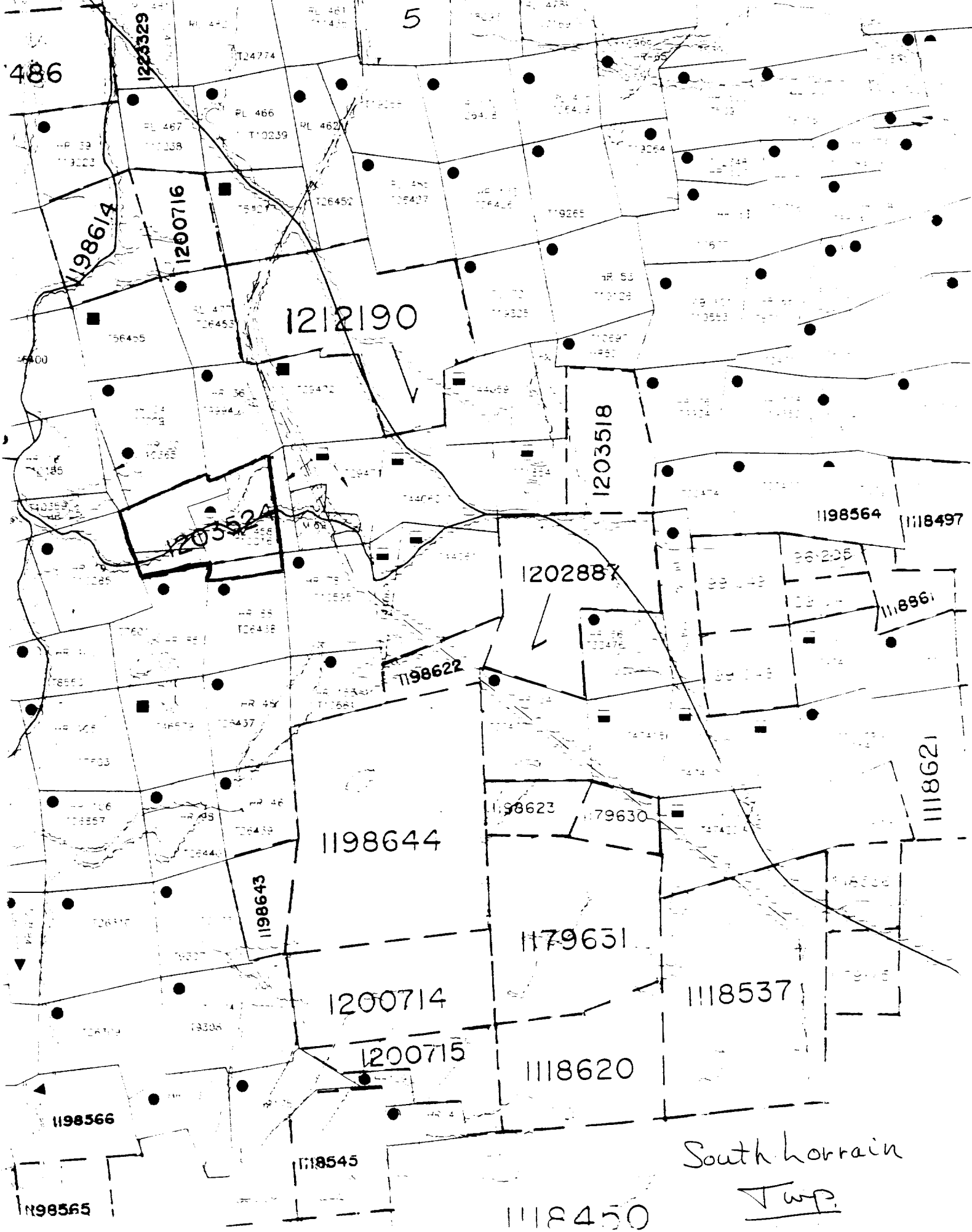
The geological survey was successful in mapping all geological features of interest on the property. Of particular interest were any pits, trenches or shafts in the vicinity of the Wettlaufer fault. The Beep Mat survey did not succeed in locating any new silver - cobalt veins or mineralized float.

Since previous operators and the present work have failed to uncover any near-surface showings on the property the focus for further exploration should be directed at deeper targets. Trenches near the Wettlaufer fault should be cleaned out in an attempt to locate any crosscutting structures or undocumented veins. Using the hypothetical cross section on Map 2194 (GR 83) as a model, a diamond drilling program is recommended to test the Wettlaufer fault at depth. The fault is interpreted to intersect the lower diabase contact at about 160m. Since this fault has already hosted a significant silver producer and since the property is next to the famous Keely - Frontier property, it is felt that the prospects for economic mineralization are quite good.

References

Geology of South Lorrain Township GR93 1970

Map 2194 - South Lorrain Township



5

486

1223329

1198614

1200716

1212190

1203524

1203518

1202887

1198622

1198644

1198643

1198623

1179631

1200714

1200715

1118620

1198566

1118545

1198565

1118450

1118621

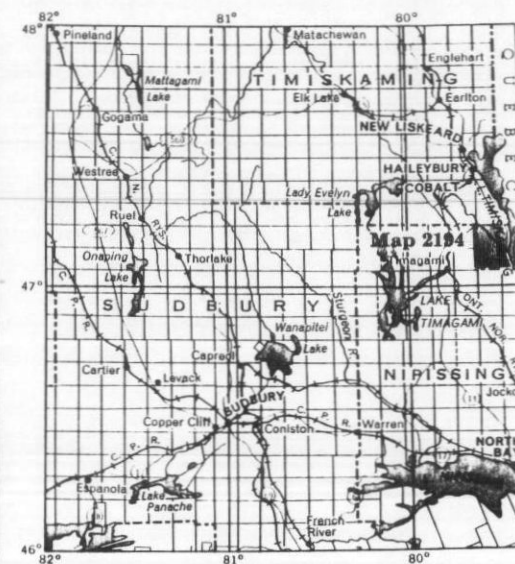
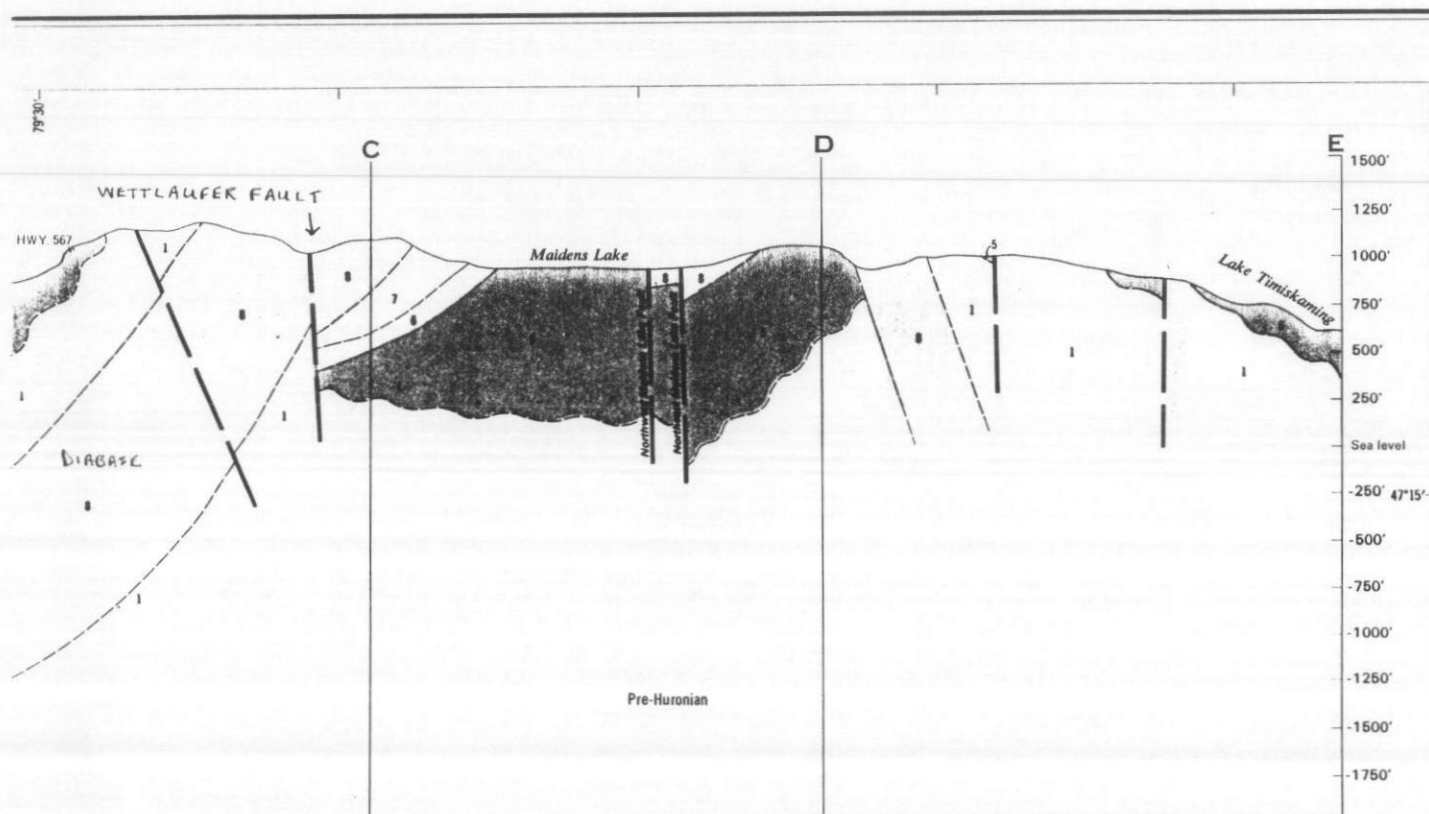
1198564

1118497

1118961

South Lorrain
Twp.

Map 2194
South Lorrain Township

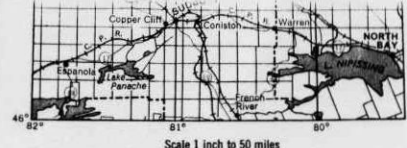
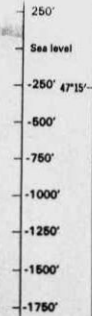


N.T.S. reference 31M/3, 31M/4

LEGEND

- CENOZOIC^a**
- PLEISTOCENE AND RECENT
Sand, gravel, till.
- UNCONFORMITY
- PRECAMBRIAN^b**

Pre-Huronian



LEGEND

CENOZOIC^a
PLEISTOCENE AND RECENT
 Sand, gravel, till.
 UNCONFORMITY

PRECAMBRIAN^b
GRENVILLE PROVINCE

METASEDIMENTS
 12 Biotite-quartz-feldspar paragneisses.
 FAULT CONTACT

ROCKS NOT ASSIGNED TO SUPERIOR OR GRENVILLE PROVINCES

UNCLASSIFIED METASEDIMENTS^c
 11 Quartzose and quartzose feldspathic paragneisses, characterized by open folds.
 FAULT CONTACT

SUPERIOR PROVINCE

PROTEROZOIC
LATE MAFIC INTRUSIVE ROCKS

10 Olivine diabase (Keweenaw).
 9 Diabase, undifferentiated (may be Matachewan age in part).
 9a Quartz diabase.
 8 Quartz diabase (Nipissing).
 INTRUSIVE CONTACT

HURONIAN
COBALT GROUP
LORRAIN FORMATION^d

7 Undifferentiated.
 7a Grey feldspathic quartzite.
 7b Pale green to white quartzite.
 7c Arkose.
 7d Red quartzite.

FIRSTBROOK FORMATION^d
 6 Undifferentiated.
 6a Laminated quartzite.
 6b Quartzite.

COLEMAN FORMATION^d
 5 Undifferentiated.
 5a Quartzose siltstone and greywacke.
 5b Arkose.
 5c Conglomerate.
 5d Schistose rocks.
 5e Laminated argillite.
 UNCONFORMITY

ARCHEAN
FELSIC TO INTERMEDIATE INTRUSIVE ROCKS^d

4 Quartz diorite.
 3 Granitic rocks, undifferentiated.
 3a Hornblende granite.
 3b Gneissic granite.
 3c Granodiorite.
 3d Quartz monzonite.
 INTRUSIVE CONTACT

EARLY MAFIC INTRUSIVE ROCKS^d

2 Lamprophyre, undifferentiated.
 2a Hornblende lamprophyre.
 2b Biotite lamprophyre.
 INTRUSIVE CONTACT

METAVOLCANICS AND METASEDIMENTS^d

1 Undifferentiated.
 1a Intermediate to mafic metavolcanics.
 1b Amygdaloidal basaltic rocks.
 1c Metadiabase, metagabbro, or diabasic flows.
 1d Quartzite and greywacke.
 1e Felsic metavolcanics with or without interbedded quartzite.
 1f Pyroclastic rocks.
 1g Quartz-feldspar porphyry.
 1h Schist, mainly chloritic.
 1j Pillow lava.




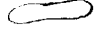



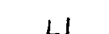
L
a
k
e

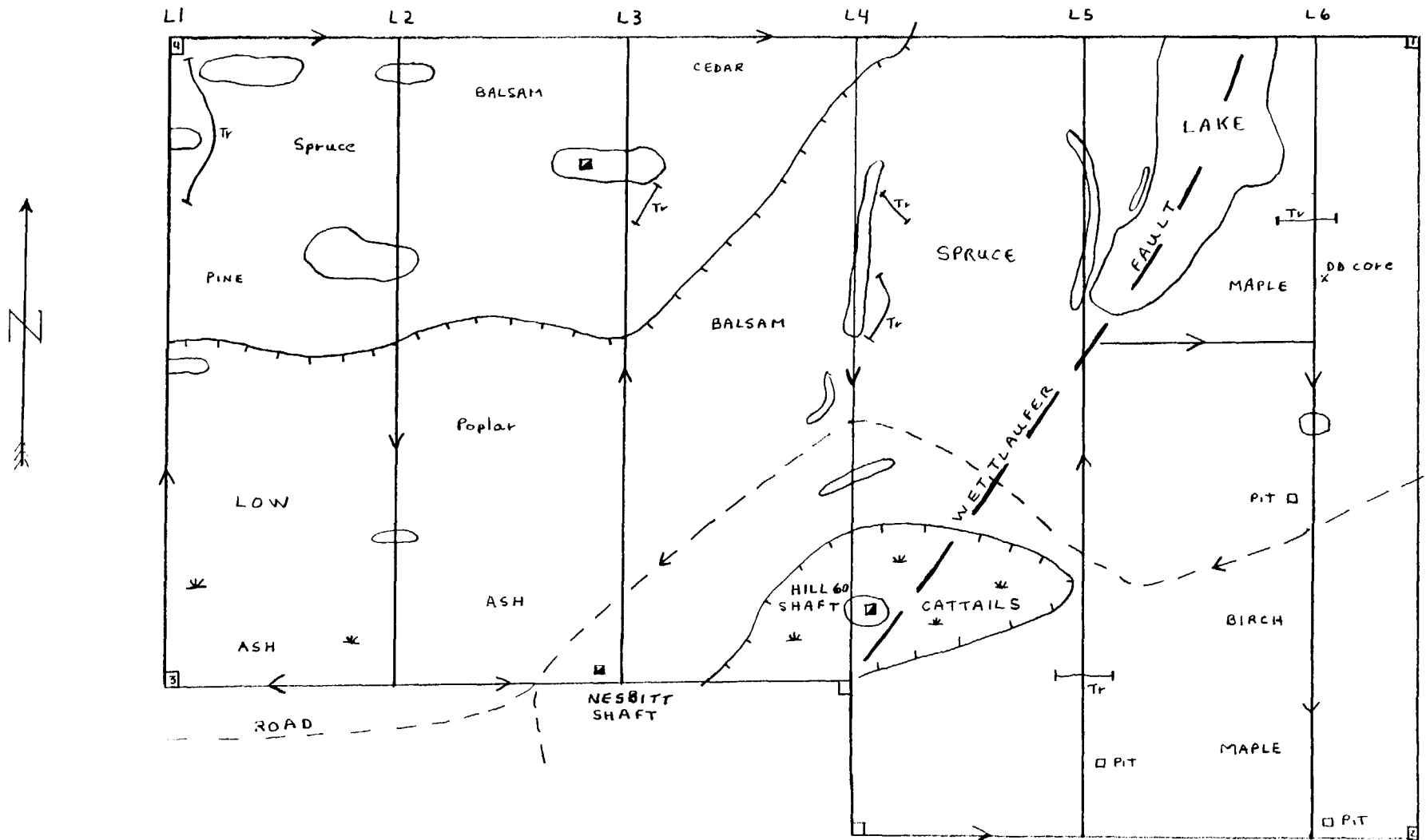
T
i
m
i
s
k
a
m
i
n
g

47'10"

Plan of Geological and Beep Mat Surveys
 Silver Centre Claim #1203524
 South Lorrain Township
 Ontario
 1" = 200'

Legend

- Beep Mat Traverse 
- Diabase outcrop 
- Diamond Drill core 
- Pit 
- Shaft 
- Trench 



80

CERTIFICATE

THIS IS TO CERTIFY:

1. I am a graduate in Prospecting Techniques from the Northern College of Applied Arts and Technology, Haileybury campus, 1976 and have completed the Haileybury School of Mines: Geophysical Field School, 1990, Interpretation of Ground and Airborne Geophysical Data Course, 1991, Kimberlite Exploration, 1993 and the Diamonds: Exploration, Sampling and Evaluation Short Course sponsored by the PDAC, 1993. I have been active as a prospector and exploration contractor since 1974.
2. I am President of the Northern Prospectors Association, Vice Chair of the Ontario Prospectors Association, a Director of the Prospectors and Developers Association of Canada, and a member in good standing of the Canadian Institute of Mining and Metallurgy.
3. I am President of and hold 100% interest in Raven Resources Inc. I reside, and Raven Resources Inc. holds office, at 139 Carter Ave., Kirkland Lake, Ontario.
4. Raven Resources Inc. has a 50% interest in the property and I personally supervised the work program.



Michael Leahy
Prospector
Kirkland Lake, Ontario
November, 1996

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number
W9680.00561

Cobalt

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 870-7264.

2.16886

- Instructions:**
- Please type or print and submit in duplicate.
 - Refer to the Mining Act and Regulations for Recorder.
 - A separate copy of this form must be completed.
 - Technical reports and maps must accompany.
 - A sketch, showing the claims the work is at.

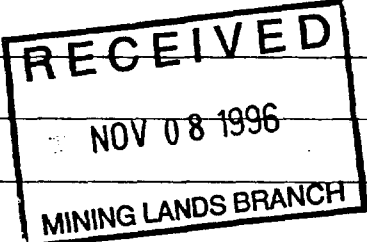


900

Recorded Holder(s) Raven Resources Inc		Client No. 186049
Address 139 Carter Ave Kirkland Lake Ont P2N2A1		Telephone No. 705-567-4696
Mining Division Kirkland Lake	Township/Area South Lorraine	M or G Plan No. G-3448
Dates Work Performed From: Aug 24 1996		To: Nov 6 1996

Work Performed (Check One Work Group Only)

Work Group	(Geol.) Type
<input checked="" type="checkbox"/> Geotechnical Survey	Geological and (Beep Mat) Surveys
<input checked="" type="checkbox"/> Physical Work, Including Drilling	Flag line grid
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	



Total Assessment Work Claimed on the Attached Statement of Costs \$ **887.00**

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
Michael Leahy	139 Carter Ave Kirkland Lake Ont P2N2A1
Brian Bishop	

(attach a schedule if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date Nov 7 1996	Recorded Holder or Agent (Signature) Michael Leahy
--	---------------------------	--

Certification of Work Report

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying Michael Leahy 139 Carter Ave Kirkland Lake Ont. P2N2A1		
Telephone No. 705-567-4696	Date Nov 6, 1996	Certified By (Signature) Michael Leahy

For Office Use Only

Total Value Cr. Recorded \$887	Date Recorded Nov 7 1996	Mining Recorder [Signature]	Received Stamp NOV 8 50
	Deemed Approval Date [Signature]	Date Approved [Signature]	
	Date Notice for Amendments Sent		

Personal information collected on this form is obtained under the authority of subsection 8(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B6.

2.16886

Work Type	Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.</small>	Cost Per Unit	Total Cost
Geological Survey	15 hrs @ 30/	\$30/hr	450
Beep Mat Survey	8 hrs	8 30/hr	240
Flag lines	101 miles	100/mile	110
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Truck	290 km @	\$.30/km	87.
Food and Lodging Costs			
Total Value of Assessment Work			887.00

RECEIVED
NOV 8 1996
MINING LANDS BRANCH

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total \$ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, Michael Leahy (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as President of Raven Res. Inc. I am authorized (recorded holder, agent, or state company position with signing authority) to make this certification.

Signature: Michael Leahy Date: Nov 7/96

January 28, 1997

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Roy Spooner
Mining Recorder
4 Government Road East
Kirkland Lake, ON
P2N 1A2

Telephone: (705) 670-5853
Fax: (705) 670-5863

Dear Sir or Madam:

Submission Number: 2.16886

Status

Subject: Transaction Number(s): W9680.00561 Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

NOTE: This correspondence may affect the status of your mining lands. Please contact the Mining Recorder to determine the available options and the status of your claims.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at beneteau_s@torv05.ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,



ORIGINAL SIGNED BY
Ron C. Gashinski
Senior Manager, Mining Lands Section
Mines and Minerals Division

Work Report Assessment Results

Submission Number: 2.16886

Date Correspondence Sent: January 28, 1997

Assessor: Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9680.00561	1203524	SOUTH LORRAIN	Approval	

Section:

12 Geological GEOL
9 Prospecting PROSP

Correspondence to:

Mining Recorder
Kirkland Lake, ON

Resident Geologist
Cobalt, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Michael Leahy
RAVEN RESOURCES INC.
KIRKLAND LAKE, Ontario

January 28, 1997

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Roy Spooner
Mining Recorder
4 Government Road East
Kirkland Lake, ON
P2N 1A2

AMENDED

Telephone: (705) 670-5853
Fax: (705) 670-5863

Dear Sir or Madam:

Submission Number: 2.16886

Status

Subject: Transaction Number(s): W9680.00561 Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

NOTE: This correspondence may affect the status of your mining lands. Please contact the Mining Recorder to determine the available options and the status of your claims.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at beneteau_s@torv05.ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,



ORIGINAL SIGNED BY
Ron C. Gashinski
Senior Manager, Mining Lands Section
Mines and Minerals Division

Work Report Assessment Results

Submission Number: 2.16886

Date Correspondence Sent: January 28, 1997

Assessor: Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9680.00561	1203524	SOUTH LORRAIN	Approval	January 16, 1997

Section:

12 Geological GEOL
9 Prospecting PROSP

Correspondence to:

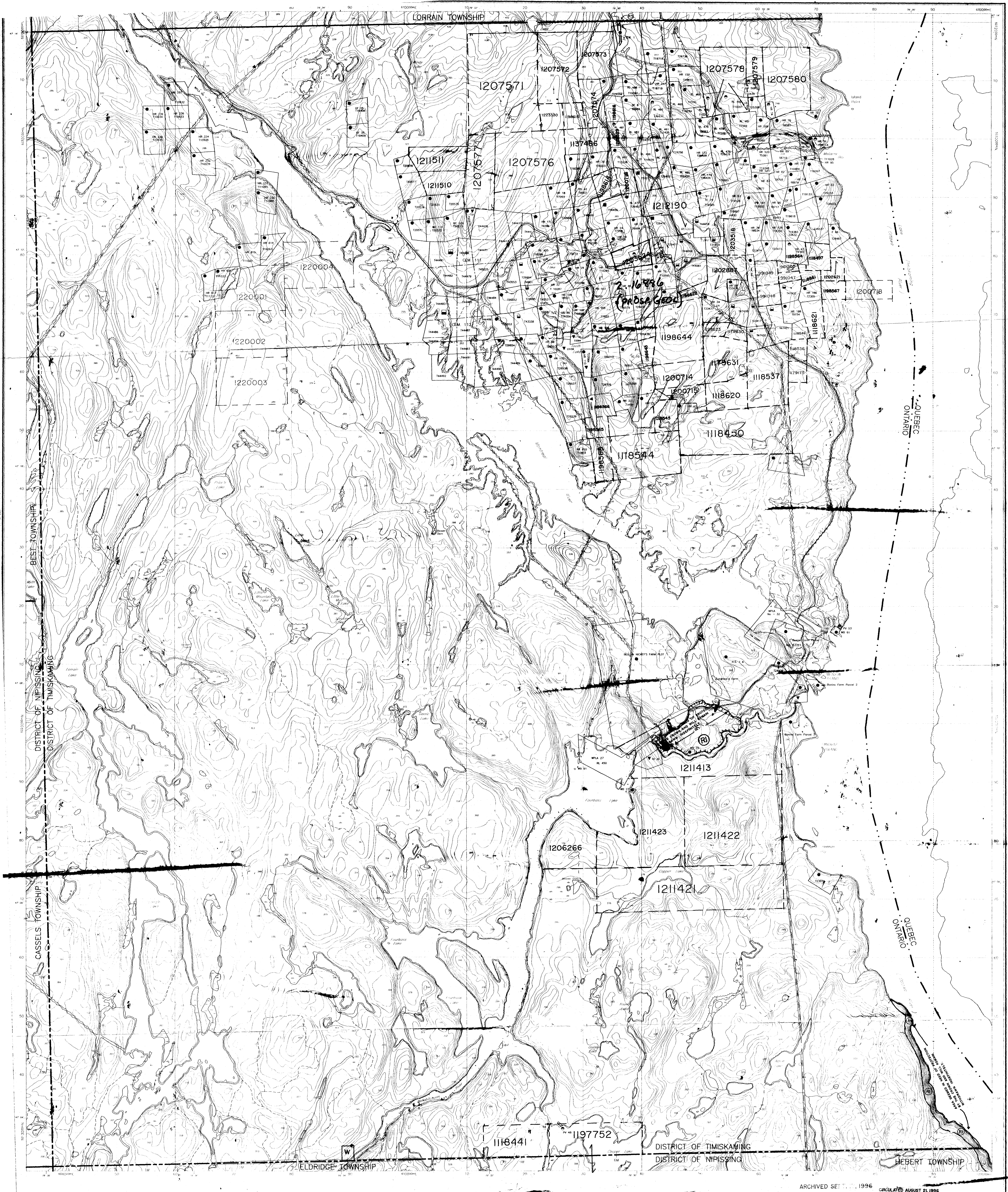
Mining Recorder
Kirkland Lake, ON

Resident Geologist
Cobalt, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Michael Leahy
RAVEN RESOURCES INC.
KIRKLAND LAKE, Ontario



ARCHIVED SET 1996 CALCULATED AUGUST 21 1996

AREAS WITHDRAWN FROM DISPOSITION

MRO - Mining Rights Only	Order No.	Date	Disposition	File
SRO - Surface Rights Only				
M+S - Mining and Surface Rights				
SEC 35/190 W-ONT 63/196		SEPT 17/96	M+S	COMPREHENSIVE PLANNING COUNCIL

DISPOSITION OF CROWN LANDS

Patent	●
Surface & Mining Rights	○
Surface Rights Only	◐
Mining Rights Only	◑
Lease	■
Surface & Mining Rights	◼
Surface Rights Only	◽
Mining Rights Only	◾
License of Occupation	▽
Order-in-Council	◊
Concession	◈
Reservation	◉
Sand & Gravel	◊
Land Use Permit	◌

Ministry of Natural Resources Ontario
 Ministry of Northern Development and Mines

INDEX TO LAND DISPOSITION PLAN

G - 3448

TOWNSHIP
SOUTH LORRAIN

M.N.R. ADMINISTRATIVE DISTRICT

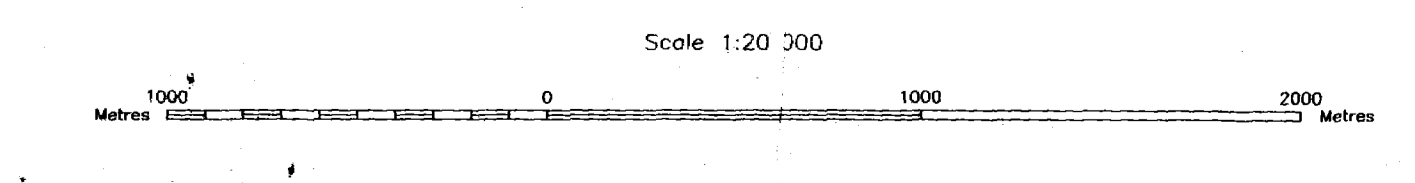
TEMAGAMI

MINING DIVISION

LARDER LAKE

LAND TITLES/REGISTRY DIVISION

TIMISKAMING



SYMBOLS

Boundary	—
Administrative District	—
Township, Meridian, Baseline	—
Road allowance, surveyed	—
Lot/Concession, surveyed	—
Parcel, surveyed	—
Parcel, unsurveyed	—
Right-of-way, road	—
Right-of-way, railway	—
Right-of-way, utility	—
Reservation	—
Cliff, P.L. File	—
Contour	—
Interpreted	—
Approximate	—
Depression	—
Control point (horizontal)	—

THIS TOWNSHIP FALLS WITHIN THE TEMAGAMI COMPREHENSIVE PLANNING AREA SPECIAL WORKING CONDITIONS MAY APPLY TO EXPLORATION ACTIVITIES. FOR MORE DETAILS PLEASE CONTACT: DISTRICT MANAGER, NORTH BAY DISTRICT, MINISTRY, NATURAL RESOURCES

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WORKING TO MAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.