



42J06SW2001

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SOUTH OF RIDGE
LAKE

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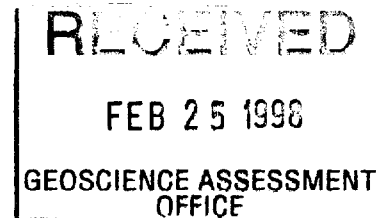
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MCK Mining Corp.

Martison Project

Assessment Report on Lake Sediment Sampling Program

NTS 42 J/SW



February 18, 1998

Todd Keast F.G.A.C.

TABLE OF CONTENTS

	Page
Introduction.....	1
Location and Access.....	1
Property.....	4
Topography.....	5
Geology.....	5
Previous Work.....	8
1998 Exploraton Program.....	9
Results.....	9
Conclussions and Recommendations.....	12
References.....	15
Certificate of Qualification.....	18

Figures

Figure 1	Project Location.....	2
Figure 2	Project Access.....	3
Figure 3	Claims.....	6
Figure 4	Sample Location.....	10
Figure 5	Geochemical Signature.....	13

Tables

Table 1	Claim List.....	4
Table 2	Lithologic Units.....	7
Table 3	1998 Expenditures.....	11

Appendices

Appendix I	Sample preparation and analysis
Appendix II	ICP, XRF, and Au assays



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SOUTH OF RIDGE
LAKE

010C

INTRODUCTION

Between January 15 and January 17 1998, MCK Mining Corp. completed a lake sediment sampling program on the Martison Project. The Martison Project is situated approximately 75 km north of Hearst Ontario, in the South of Ridge Lake Area. The Martison Project overlies the Martison Carbonate Complex which hosts a global resource of 223,918,000 tonnes of 13.80% P_2O_5 , 0.34% Nb_2O_5 , at a 0% P_2O_5 cutoff. The purpose of the lake sediment survey was to determine if there exists a geochemical signature over the Martison Phosphate deposit. If a distinct signature exists than it may represent the presence of the residuum (ore material). The exploration technique may then be used to explore for residuum in other portions of the carbonatite complex.

The survey indicates a distinct multi-element geochemical signature associated with the Martison Phosphate deposit. An orientation soil survey is recommended to determine if the soil medium returns a similar geochemical signature. Soil samples should be collected over areas of the complex where residuum has been intersected in drilling, and compared to soil samples collected where residuum has not been intersected in drilling. The overall goal of the program is to develop an inexpensive exploration technique, which can be used to evaluate unexplored areas of the Martison Complex, and to explore for additional carbonatite complexes in the region.

LOCATION AND ACCESS

The property is situated 75 kilometres north of Hearst, Ontario (**Figure 1**). The project is situated in the South of Ridge Lake Area (G- 1716), within the Porcupine Mining Division. The latitude and longitude of the project is NTS 42 J / SW, 50° 20' N 83° 25' E.

The project is accessed via a network of roads and trails, which originate from the Fushimi Road, approximately 30 km west of Hearst. At the end of the Fushimi Road is a winter road 45km in length, which accesses the property (**Figure 2**). Access to the project is not possible via the winter road during the summer, and lakes on the project are not large

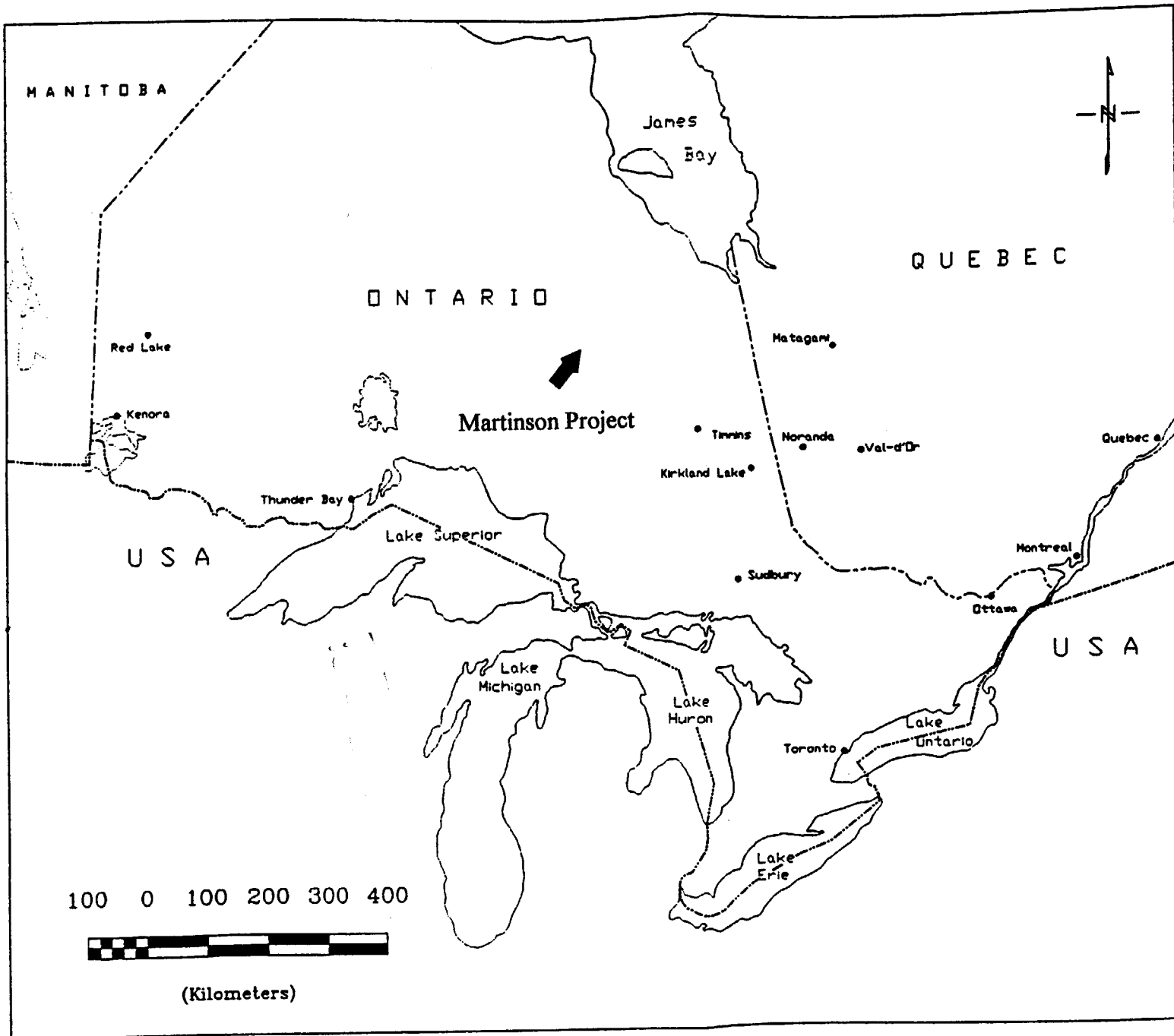


Figure 1

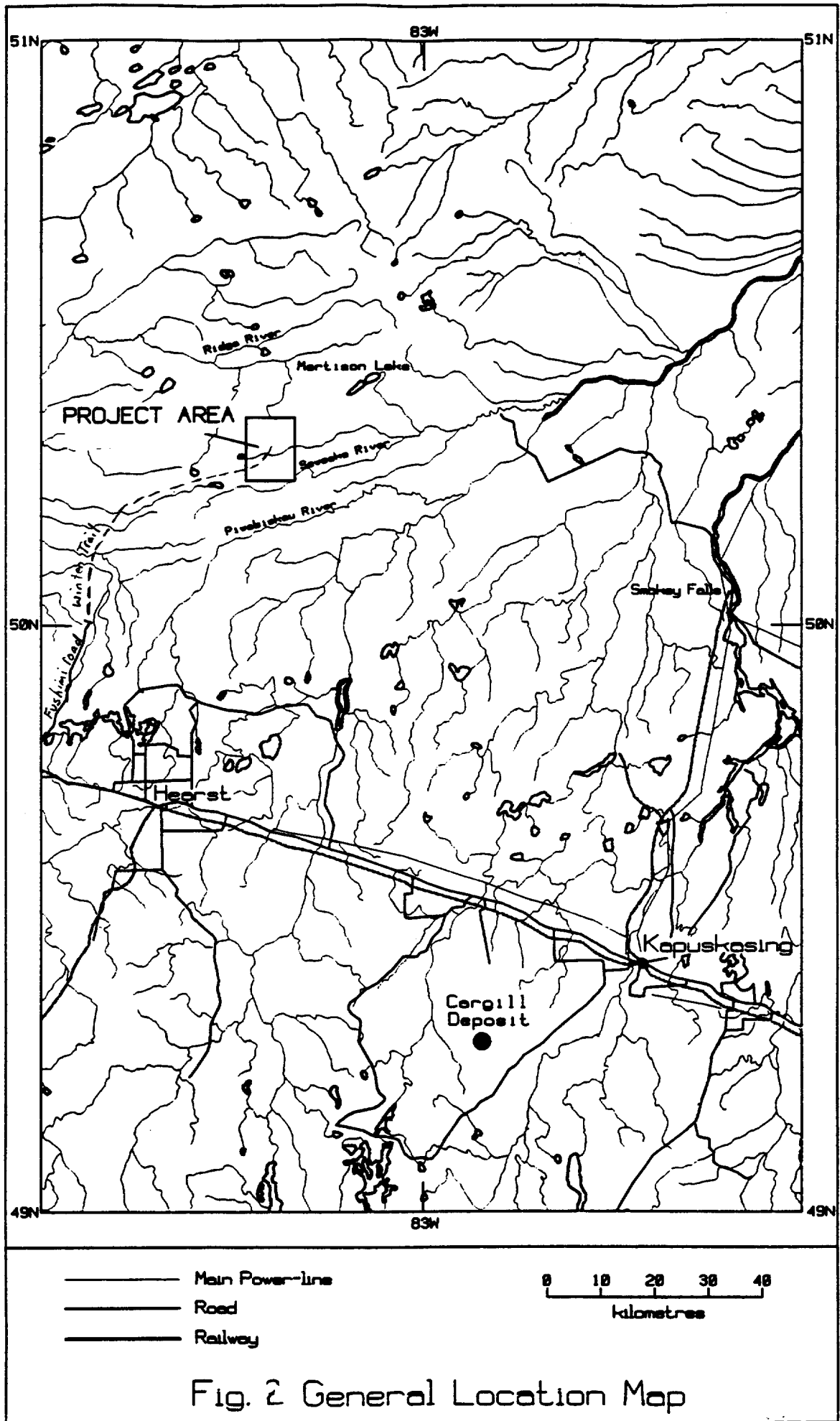


Fig. 2 General Location Map

enough to land a float plane.

The topography of the project is typical of the James Bay Lowlands, flat with widespread spruce bog and muskeg cover. A number of north flowing narrow streams and rivers connect a series of small shallow lakes.

PROPERTY

The Martison Project consists of 31 unpatented mining claims comprising 5,583 hectares. The claims are situated in the South of Ridge Lake Area (G-1716), of the Porcupine Mining Division (**Figure 3**). The claims are held by D.McKinnon, of Timmins Ontario, **Table 1**.

Table 1: Martison Project Claim List

Claim #	Units	Hectares
P 1201625	12	192
P 1223550	15	240
P 1223551	15	240
P 1223552	6	96
P 1223553	15	240
P 1233554	12	192
P 1233555	15	240
P 1233556	15	240
P 1233557	15	15
P 1233558	12	192
P 1235559	8	128
P 1235560	10	160
P 1235561	16	256
P 1226550	16	256
P 1226551	16	256
P 1226552	12	192
P 1226553	12	192
P 1226554	8	128
P 1226555	8	128
P 1226556	10	160
P 1226557	9	144
P 1226558	12	192
P 1226559	8	128
P 1226562	9	144

P 1226563	16	256
P 1226564	16	256
P 1226565	8	128
P 1226566	3	48
P 1226567	6	96
P 1226568	12	192
P 1226569	16	256
	363	5583

GEOLOGY

The Martison Project is situated within the Moose River Basin of the James Bay Lowlands. The Martison Carbonatite Complex is located 150 km west of the Kapuskasing Structural Zone, which hosts numerous alkalic complexes. The Martison Complex appears to lie along an extrapolated northeast extension of the Garden River Fault Zone (Sage 1986). The lack of outcrop prevents any evaluation of the granitic rocks, which likely enclose the Martison Complex. One drill hole by Shell Canada Resources Limited encountered trondhjemite or quartz diorite. The Martison Complex is tentatively classed as Proterozoic in age, as are all carbonatite complexes in Ontario.

Due to the widespread glacial cover in the area, very little is known of the property geology. The geology is interpreted from the previous drill programs and geophysical surveys. The Martison Carbonatite Complex has been weathered with the development of residuum filled karst like features. The karst topography is interpreted from the rapid changes in residuum thickness over short distances. Weathering is interpreted to have taken place during the Cretaceous time (Sage 1991).

The Martison Carbonatite Complex consists of three separate carbonatite intrusions, or one large carbonatite complex. The Martison Carbonatite consists of three closely spaced circular aeromagnetic anomalies known to be underlain by carbonatite rocks, named subcomplexes A, B, and C. The largest circular aeromagnetic anomaly exceeds 4 km in diameter (19 km²), and represents a very large carbonatite intrusion. The known deposit is situated on subcomplex A.

All diamond drilling at the Martison Carbonatite Complex which penetrated bedrock intersected carbonatite and possibly lamprophyre dykes. Core samples of fresh carbonatite show that it varies from a fine to coarse grained biotite soelite (calcite-rich carbonatite) to beforosite (dolomite rich carbonatite), with accessory apatite and magnetite. The carbonatite displays local fracturing and brecciation. Occasionally glacial drift lies directly on the weathered carbonatite bedrock, but in most cases a layer of residuum formed as a result of the weathering and dissolution of carbonate rich intrusion.

The residuum varies in thickness from less than a metre to more than 100 metres. The residuum was classified by shell geologists into five types: (1) apatite sand; (2) phosphatic silt and clay; (3) cemented phosphate; (4) fragments of 3 in 1 or 2; and (5) non-phosphatic clay. The most common mineral in the residuum is apatite, occurring as small euhedral grains and fragments. Other minerals include magnetite, hematite, ilmenite, goethite and clays. The niobium mineral, pyrochlore, occurs as tiny yellow and red grains in the fine fractions. **Table 2** is a list of lithologic units for the Martison Carbonatite Complex.

Table 2 Lithologic Units of Martison Complex

Cenozoic

Quaternary

Recent

Swamp and stream deposits

Pleistocene

Glacial drift, clay, boulders, gravel, sand, silt

Glaciolacustrine deposits

Unconformity

Mesozoic

Diatremes of lamprophyre, carbonitic and kimberlitic affinity

Intrusive contact (?)

Pre-glacial quartz sands, organic clay and kaolinite

Unconformity

Phosphate and niobium enriched residuum

Unconformity

Precambrian (Proterozoic?)

Martison Carbonatite Complex

Precambrian (Archean)

Granitic Gneisses

PREVIOUS WORK

Exploration was first undertaken on the property by Uranium Ridge Mines in 1965. The company completed a single drill hole an aeromagnetic anomaly (magnetic anomaly B). The drill hole intersected a boulder of cemented secondary phosphate, considered to have been derived from a carbonatite.

In 1980 Selco drilled a number of diamond drill holes in the region as part of a diamond exploration project. Four of these holes were within three kilometres of the Martison complex. Carbonatite was reported to have been intersected in one hole.

In 1981 Shell Canada flew an airborne survey over the property. Five Reverse circulation holes for a total of 478 metres were drilled. Phosphate rich residuum derived from weathered carbonatite was intersected in the drilling. Shell conducted seismic tests and resistivity surveys. In 1982 Shell resumed drilling with an additional 38 holes totaling 2,954 metres. Drilling included reverse circulation and sonic. Shell calculated a total resource of 145,000,000 tonnes of 20.01% P_2O_5 , 0.35% Nb_2O_5 . In 1982 Shell withdrew from mineral exploration, and the property was acquired by Camchib Mines.

In 1983 Camchib drilled 29 holes for a total of 2783 metres. In 1984 Camchib Mines drilled an additional 37 holes including a 48 inch diameter churn hole used for a bulk sample. Camchib calculated a proven probable and possible resource of 145,00,000 tonnes of 20.1% P_2O_5 , 0.35% Nb_2O_5 at a 0% P_2O_5 cutoff.

In 1997, Mr. Don McKinnon contracted J.H. Reedman & Associates Ltd to complete an updated computation of the open pitable phosphate resource for the Martison Project. A global resource of 223,918,000 tonnes of 13.80% P_2O_5 , 0.34% Nb_2O_5 , at a 0% P_2O_5 cutoff.

1998 EXPLORATION PROGRAM

Between January 15 –17, 1998, a lake sediment sampling survey was completed on the Martison Project by MCK Mining Corp. The survey was completed by T. Keast of Porcupine Ontario, and D. Healey of Kirkland Lake Ontario.

A total of four lakes situated over the known mineral resource were targeted for sampling (**Figure 4**). The small lake situated east of Lake 1 was dry and therefore not possible to sample. A total of seven samples, 2-3 samples per lake were collected for analysis from the three lakes overlying the Carbonatite Complex. One sample was collected on Caribou Lake, approximately 20 km east of the carbonatite complex. This sample was used to compare the geochemistry of samples overlying the carbonatite to that of a sample outside the carbonatite.

The survey was completed using a lake sediment sampling device. An ice auger was used to cut an 8-inch diameter hole in the ice. The sampling tool was lowered through the ice, and dropped into the substrate. The sampler was retrieved, the sample material removed, the sampler rinsed, and the procedure repeated. Two sample drops were completed at each station in order to ensure a large enough sample. The sampled material at all sites was fine grained brown material, gravel and clay horizons were not intersected.

The samples were analyzed by Swaztika Laboratories by multi element ICP, gold assay and whole rock XRF. A description of the sample preparation, and analysis procedures are included in **Appendix I**.

The total cost of the program was **\$5,140.49**, with details enclosed in **Table 3**.

RESULTS

The results of the lake sediment sampling program indicates a strong multi-element geochemical signature of samples which overlie the Martison Carbonatite Complex. The results suggest that this method may be applied to exploration on other portions of the

Table 3. Martison Project Lake Sediment Sampling Program

Equipment Rentals		
	Truck, snow machines, sled, sampler, auger.	\$ 1,011.61
Supplies		
	Fuel, food, meals	\$ 325.00
Labour		
	Geologist 6 days @\$300/day	\$ 1,800.00
	Assisstant 3.5 days @\$200/day	\$ 700.00
Assays		\$ 303.88
Report		\$ 1,000.00
	Total Expenditures	\$ 5,140.49

project and to explore for additional carbonatite complexes. The results of the samples taken over the Martison carbonatite are compared against a sample taken from Caribou Lake, located approximately 20 km east of the Martison Carbonatite Complex.

Seven samples (49232, 49233, 49234, 49235, 49236, 49238, 49239), from the different lakes overlying the complex show similar chemical compositions in SiO_2 , Al_2O_3 , Fe_2O_3 , CaO , Na_2O , MgO , K_2O , MnO , P_2O_5 , TiO_2 , Ba, Sr, and Zr (**Appendix II**). In addition, the samples have a strong loss on ignition (LOI), as would be expected from a carbonate rich bedrock source. In comparison to the sample from Caribou Lake (49240), situated 20 km east of the project area, Martison samples show low values in SiO_2 , Fe_2O_3 , MgO , K_2O , TiO_2 , Ba, Sr, and Zr relative to the Caribou Lake sample (**Figure 5**). The Martison samples show a high LOI compared to a low LOI from the Caribou Lake sample.

As the geochemical signature is apparent in numerous elements, it appears that geochemical surveys may be a useful exploration technique for further exploration on the Martison Project. Although there are few other lakes on the property for sampling, soil sampling should be completed to determine if a similar geochemical trend is apparent. In addition, the information may be useful for exploring for additional carbonatite complexes in the Moose River Basin. The lake sediment surveys in conjunction with airborne magnetometer surveys may prove to be a useful screen to evaluate the potential of the magnetic anomalies without having to complete expensive drilling.

CONCLUSIONS AND RECOMMENDATIONS

Further work is recommended for the Martison Project. An orientation soil survey is recommended to determine if the soil medium returns a similar geochemical signature. Soil samples should be collected over areas of the complex where residuum has been intersected in drilling, and compared to soil samples collected where residuum has not been intersected in drilling. The overall goal of the program is to develop an inexpensive exploration technique which can be used to evaluate unexplored areas of the Martison Complex, and to explore for additional carbonatite complexes in the region.

Martison Project Lake Sediment Geochemical Signature

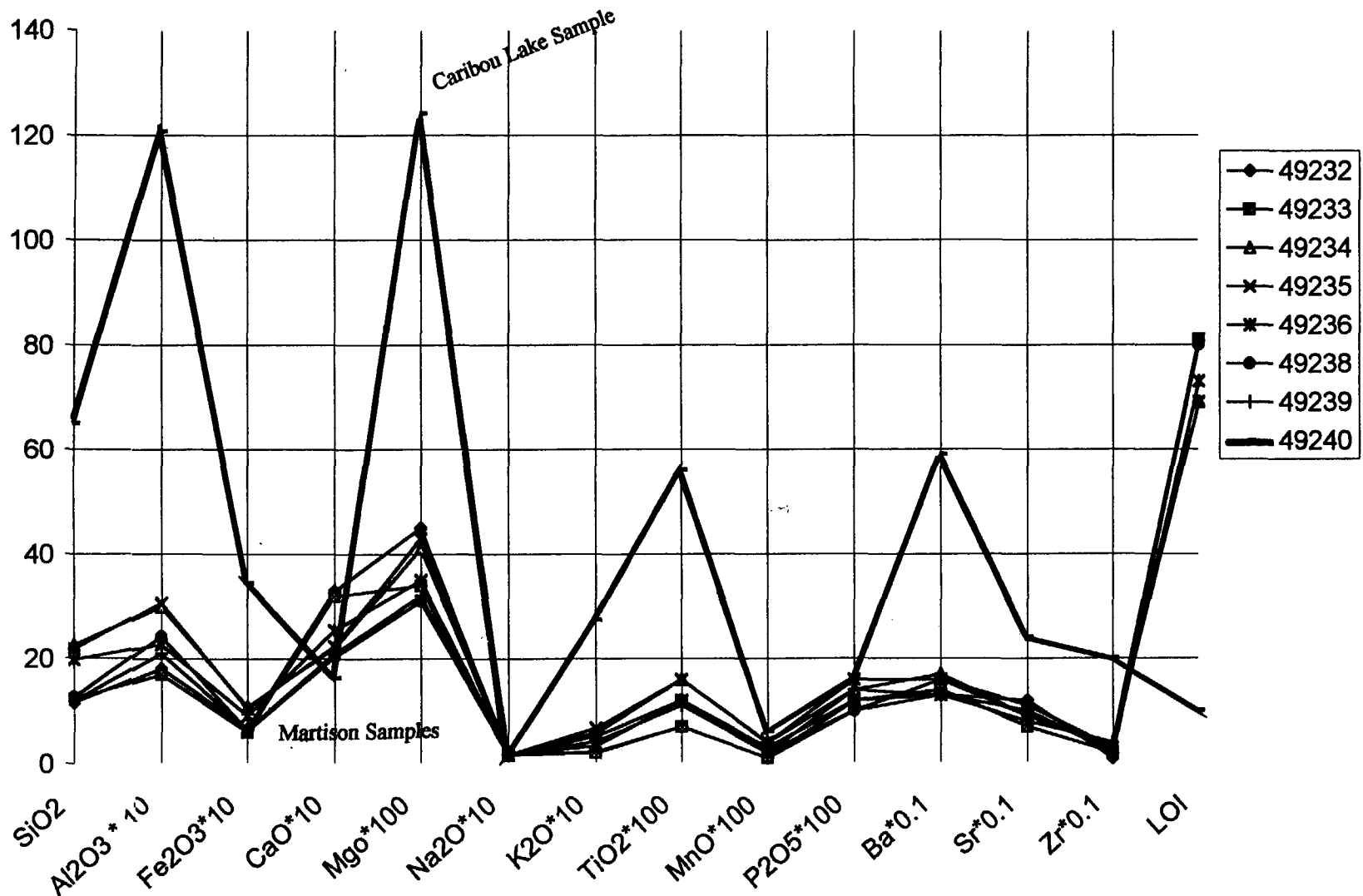


Figure 5

A soil sampling program is recommended to follow up on the results of the lake sediment sampling program. The estimated budget for the soil survey is **\$7,500**.

REFERENCES

1981 October: **"Summary Report of the Martison Project"** by D.F. Fisher, Shell Canada Resources Limited. 79 p. T-2405
DDH Logs 8008-81-01, 8008-81-02, 8008-81-03, 8008-81-04, 8008-81-05,

1982 May: **"Report of Drilling Work on the Martison Project During 1981"** by D.F. Fisher, Shell Canada Resources Limited. 22 p. T-2405
DDH Logs 8008-81-01, 8008-81-02, 8008-81-03, 8008-81-04.

1982 July: **"Summary Report of the Martison Project"** by D.F. Fisher, Shell Canada Resources Limited. T-2405

1984 June: **"Summary Report: Martison Project July 1 to December 31, 1983"** by P. Potapoff, Camchib Mines Inc. T-2935 26 p plus assays.

1984 November 12: **"Summary Report: Martison Project January 1 to June 30, 1984"** by P. Potapoff, Camchib Mines Inc. T-2935. 29 p.
DDH Logs. 84-67, 84-68, 84-69, 84-70, 84-71, 84-72, 84-73, 84-74A, 84-74B, 84-74C, 84-75, 84-76, 84-77, 84-78, 84-79, 84-80, 84-81, 84-82A, 84-82B, 84-83, 84-84, 84-85, 84-86, 84-87, 84-88, 84-89, 84-90, 84-91, 84-92, 84-93, 84-94, 84-95A, 84-96, 84-97, 84-98, 84-99,

1983 November **"Summary Report: Martison Project"** by P. Potapoff, Camchib Mines Inc. T-2935. 40 p. 83-38-29, 83-38-30, 83-38-31, 83-38-32, 83-38-33, 83-38-34, 83-38-35, 83-38-36, 83-38-37, 83-38-38, 83-38-39, 83-38-40, 83-38-41, 83-38-42, 83-38-43, 83-38-44, 83-38-45, 83-38-46, 83-38-47, 83-38-48, 83-38-49, 83-38-50, 83-38-51, 83-38-52, 83-38-53, 83-38-54, 83-38-55, 83-38-56, 83-38-57, 83-38-58, 83-38-59, 83-38-60, 83-38-61, 83-38-62, 83-38-63, 83-38-64, 83-38-65, 83-38-66, 83-38-67, 83-38-68, 83-38-69, 83-38-70, 83-38-71, 83-38-72, 83-38-73, 83-38-74, 83-38-75, 83-38-76, 83-38-77, 83-38-78,

1997 March; **"A computation of the Open Pit Phosphate Resource at the Martinson Carbonatite, Northern Ontario."** By J.H. Reedman and Associates Ltd. for Donald McKinnon.

Metallurgical Reports

1982 June 11: **"Investigation of the Recovery of Phosphate and Pyrochlore from Martison Lake Samples Submitted by Shell Canada Resources; Progress Report No. 1"** by Lakefield Research of Canada. T-2905 126 p.

Map Ore Reserves

Mp Drill Plan Compilation

1983 July 22: **"Mineralogical Examination of Phosphate Samples submitted by Camchib Resources Limited: Progress Report"** by Lakefield Research of Canada. 9 p. T-2935

1983 Nov 7: **"Quantitative Microprobe Analysis of Mineral Samples for Campbell Resources Inc."** 9 p.

1983 August 24: **"Results of 1983 Field Programme and Environmental Review"** by Environmental Applications Group Limited. 24 p.

1983 September: **"Access Road Study Interim Report"**. 11 p , 1 terrane map.

1983 August: **Water Quality of the Martinson Project Site in August 1983.** 5 p. 1 location map.

1983 November 22: "Recovery of Phosphate and Niobium from Samples Submitted by Camchib Resources Limited (per A.H. Ross & Associates) - Progress Report No. 1" T-2935 364 p.
1983 November 29: "Metallurgical Investigations and Cost Estimates for Martison project" by A.H. Ross & Associates for Campbell Resources, Inc. 41 p T-2935

1985 May 22: Assessment work report filed by Camchib Mines Inc., T-2935 recording beneficiation studies done in 1982 (for Shell) and 1983 (for Camchib) by Lakefield Research.
Beneficiation Studies 1982 and 1983 Phosphate Niobium Concentrate Recoveries. 7 p.

GEOTECHNICAL REPORTS

1983 October: "Preliminary Geotechnical Assessment of a Martison Phosphate Deposit, Hearst, Ontario" by Golder Associates for Camchib Resources Inc. 36 p T-2935
DDH Logs 83-38, 83-39, 83-40, 83-41, 83-42, 83-43, 83-44, 83-45, 83-46, 83-47, 83-48, 83-49, 83-50, 83-51, 83-52, 83-53, 83-54, 83-55, 83-56, 83-57, 83-58, 83-59, 83-60, 83-61, 83-62, 83-63, 83-64, 83-65, 83-66.
Borehole Location Plan May 1983
Site Plan Martinson Project Feb 1983
Section A-A' May 1983
Section B-B' May 1983
10 plots of Grain size distribution.
Schematic Pit Slope Section.

DRILL LOGS AND ASSAYS

1982: Drill logs, Shell Canada Resources. T-2405
DDH Logs 8008-82-01 to 8008-82-37 with assays.

1982: Drill logs, no assays. Nine core holes. Shell Canada Resources. T-2935
8008-82-02, 8008-82-07, 8008-82-11, 8008-82-32, 8008-82-33, 8008-82-34, 8008-82-35, 8008-82-36, 8008-82-37.
83-38, 83-39, 83-40, 83-41, 83-42, 83-43, 83-44, 83-45, 83-46, 83-47, 83-48, 83-49, 83-50, 83-51, 83-52, 83-53, 83-54, 83-55, 83-56, 83-57, 83-58, 83-59, 83-60, 83-61, 83-64, 81-05.

GEOPHYSICAL REPORTS

1981: "Data Summary 1981 Resistivity Test Programme, Martison Lake Area" by DTF Consultants for Shell Canada Resources. 8 p. 2 maps. T-2405

1981: "Report on Airborne Geophysical Survey of the Martison Lake Project Area I, etc." by Kenting Earth Sciences Ltd. for Shell Canada Resources. T-2405.

1982: Map: "Airborne Magnetic Survey, Martison Lake Project, Area I" by Kenting Earth Sciences for Shell Canada Resources. Map 1.

1982: Map: "Airborne Electromagnetic Survey, Martison Lake Project, Area I" by Kenting Earth Sciences for Shell Canada Resources. Map 2.

1982: Map: "Tridem Profile - Airborne Electromagnetic Survey, Martison Lake Project, Area I" by Kenting Earth Sciences for Shell Canada Resources. Map 3.

1982: Map: "Airborne Magnetic Survey Downward continuation, Martison Lake Project, Area I" by Kenting Earth Sciences for Shell Canada Resources. Map 4.

1982: "Appendix B: Martison Project, DC Resistivity and Seismic Refraction" by Andrea Allison. 20 p. T-2405

1983: "Report on Aeromagnetic interpretation, Martison Lake Project, Ontario" by Allan Spector & Associates for Camchib Resources Inc. T-2938.

1971; Magnetometer Survey on the R.E. Kucera Claim Group. T-540 8 p.

1968, Helicopter – Aeromagnetic Survey Soveska Claim Group. Goldray Mines Limited T-1457 10 p. 1 map

1965 Geophysical Investigations of Airborne Magnetic and Electromagnetic Anomalies, South of Ridge Lake. Uranium Ridge Mines. 4 p. T-1235 Ground HLEM and Mag maps. South magnetic body.

1969 Assay sheets and drill hole Falconbridge. 6 p. T-1235

GOVERNMENT AND INDUSTRY PAPERS

1991 R.P. Sage, **Geology of the Martinson Complex**; Ontario Geological Survey, Open File Report 5420 74 p.

1987 **Geology of Carbonatite - Alkalic Rock Complexes in Ontario: James Bay Lowlands, Ontario** Geological Survey Study 42. 49 p.

1986: "**Industrial Minerals of the Cargill Township and Martison Lake Carbonatite Complexes**" by M.J. Ford, Ontario Geological Survey. O.G.S. Miscellaneous Paper 132 435 p.

1987 July: "**Final Report:Northern Ontario Phosphate Study**" by Jacobs International and Blue, Johnson & Associates, for Ontario Ministry of Northern Development & Mines. 366 p

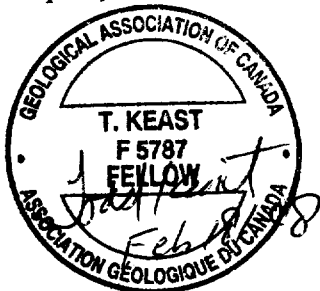
1985 **Industrial Mineral Resources of the North Clay Belt**" by G.R. Guillet. For North Clay Belt Development Association October 1985.

CERTIFICATE OF QUALIFICATIONS

I, **Todd Keast**, of 1204 Grace Ave., Porcupine, Ontario, do hereby certify that:

1. I am the author of this report.
2. I am a graduate of the University of Manitoba, Winnipeg, Manitoba, having received an Honors Bachelor of Science (Geology), in 1986.
3. I have practiced in the field of mineral exploration since 1987, for a number of exploration companies throughout Manitoba, Ontario, and Quebec.
4. I am a Fellow of the Geological Association of Canada.
5. I am a member of the Canadian Institute of Mining and Metallurgy.
6. I do not hold any interest in the Martison Project, nor any interest in any properties within ten kilometres of the Martison Project.

Dated at Porcupine, Ontario this 18th day of February 1998.



Todd Keast, F.G.A.C.

Appendix I

Assay Procedure for Lake Sediment Samples



Established 1928

Swastika Laboratories

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Assaying - Consulting - Representation

WHOLE ROCK BY INDUCTIVELY COUPLED ARGON PLASMA

PACKAGE FEATURES

Element as Oxide

Major Constituents			Detection Limit
Silica	(SiO ₂)	%	0.01%
Aluminum	(Al ₂ O ₃)	%	0.01%
Iron	(Fe ₂ O ₃)	%	0.01%
Calcium	(CaO)	%	0.01%
Magnesium	(MgO)	%	0.01%
Sodium	(Na ₂ O)	%	0.01%
Potassium	(K ₂ O)	%	0.02%
Titanium	(TiO ₂)	%	0.01%
Manganese	(MnO)	%	0.01%
Phosphorus	(P ₂ O ₅)	%	0.02%

Minor Constituents

Barium	(Ba)	ppm	10 PPM
Strontium	(Sr)	ppm	10 PPM
Zirconium	(Zr)	ppm	10 PPM
Yttrium	(Y)	ppm	2 PPM
Scandium	(Sc)	ppm	1 PPM
Beryllium	(Be)	ppm	1 PPM
Nickel	(Ni)	ppm	5 PPM
Chromium	(Cr)	ppm	5 PPM
Copper	(Cu)	ppm	5 PPM
Vanadium	(V)	ppm	5 PPM
Cobalt	(Co)	ppm	5 PPM
Zinc	(Zn)	ppm	5 PPM
Niobium	(Nb)	ppm	10 ppm
LOI		%	0.01%



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**LITHIUM METABORATE FUSION TECHNIQUE
FOR DETERMINATION OF METALLIC CONSTITUENTS OF ROCK
BY ARGON PLASMA EMISSION SPECTROSCOPY
(AS PER ASTM: D4503)**

SCOPE

This practice covers the drying, ashing and solubilization of solid waste using a lithium metaborate (LiBO_2) fusion for the subsequent determination of inorganic constituents by argon plasma emission spectroscopy.

PROCEDURE

- The solid waste (or rock) is dried, weighed and ashed @ 550°C to remove water and organic constituents, and reweighed.
- A known portion of the ground pulverized ash is mixed with LiBO_2 in a graphite crucible and fused @ 1000°C .
- Immediately after fusion, the molten mass is poured directly into stirred dilute HNO_3 solution, dissolved, filtered and made to appropriate volume of subsequent analysis.

Note: See attached ICAP Whole Rock elements and the lower detection limits.

APRIL 1997

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0



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ICP MULTI-ELEMENT PACKAGE

This analytical package uses an aqua regia digestion that liberates most of the metals except those marked with an asterisk where the digestion will not be complete.

<u>Element</u>	<u>Detection Limit</u>
Ag	1 ppm
*Al	10 ppm
As	5 ppm
*B	10 ppm
*Ba	1 ppm
*Be	1 ppm
Bi	5 ppm
*Ca	20 ppm
Cd	1 ppm
*Co	1 ppm
*Cr	1 ppm
Cu	1 ppm
*Fe	10 ppm
*K	10 ppm
*Mg	10 ppm
*Mn	1 ppm
Mo	2 ppm
*Na	10 ppm
*Ni	1 ppm
*P	2 ppm
Pb	2 ppm
Sb	5 ppm
*Sc	1 ppm
*Sn	10 ppm
*Sr	1 ppm
*Ti	1 ppm
*V	1 ppm
*W	10 ppm
*Y	1 ppm
*Zn	1 ppm
*Zr	1 ppm



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GOLD BY FIRE ASSAY (General Description)

Both gold assay and geochemical gold analysis begin with a fusion using a flux mixture of litharge (PbO_2), sodium carbonate, borax, silica, fluorspar with further oxidants (nitre) or reductants (flour) added as required. The relative concentrations of the fluxing materials are adjusted to suit the type of sample being analyzed. An aliquot of silver is added as a final collection agent. The resultant lead button containing the precious metals is reduced to PbO , and absorbed into a cupel in a cupellation furnace. The precious metals collected in the silver aliquot are now ready for either geochemical analysis using an atomic absorption spectrometer or a gravimetric assay finish. The geochemical method involves dissolving the precious metal and analyzing by atomic absorption. Gravimetric assays are completed by dissolving the silver of the dore bead in nitric acid and leaving the gold to be weighed on a micro balance.

When geochemical beads are visually estimated to be 1500 ppb or more, we have the option of retrieving and weighing them. This option has been quite useful in getting the best of both methods.

Quality control consists of using inhouse or Canmet standards, blanks and by reassaying at least 10% of all samples. The supervisor may also have additional pulps prepared from stored reject and assayed. All data is evaluated by the fire assay supervisor and additional checks may be run on anomalous values. All values obtained are reported.



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Assaying - Consulting - Representation

ROUTINE SAMPLE PREPARATION

- 1) Dry samples if required.
- 2) Crush total sample to 1/2 inch (Jaw Crusher)
- 3) Crush total sample to 10 mesh (Rolls Crusher)
- 4) Split Approximately 350 grams using a Jones riffle.
- 5) The remaining reject is placed in a plastic bag, and packed in cartons with sample numbers listed on the outside.
- 6) Pulverize the 350g sample using a disc pulverizer. Ring mill pulverization is optional.
- 7) Homogenize the pulp, it is then ready for assay.

Sample preparation quality is assured by regular inspection, maintenance of crushing equipment, training and supervision of our staff to ensure that proper technique is utilized.

We prepare and analyze second pulps from stored rejects. The resulting data is compared with original results to verify sample sequence and also that repeatability is within acceptable limits.

To ensure that there is no dilution or concentration of various minerals, dust loss is kept at a minimum. For the critical pulverizing step, we have equipped our pulverizers with automatic draft shut off damper to eliminate sample pulp loss.

To prevent cross contamination, we use compressed air jets to clean the equipment between samples. The rolls crusher is cleaned using a wire brush combined with air jets. this system does a thorough cleaning. Also barren abrasive material is crushed between batches as an extra precaution.

Appendix II

Assay Results for Lake Sediment Samples for Martison Project

TODD GEOLOGICAL SERVICES INC.

PROJ: MARTINSON

SAMPLE: LAKE SEDIMENT

BW-0179-RG1

TSL\ASSAYERS Laboratories

1270 PEWSTER DRIVE, UNIT 3, MISSISSAUGA ONTARIO L4W 1A4

PHONE #: (905) 602-8236 FAX #: (905) 206-0513

I.C.A.P. PLASMA SCAN

Aqua-Regia Digestion

REPORT No. : M97150

Page No. : 1 of 1

File No. : F805MA.DN

Date : FEB-10-1998

SAMPLE #	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sc	Sn	Sr	Ti	V	W	Y	Zn	Zr
	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	%	ppm %	ppm %	ppm %	ppm %	%	%	ppm %	ppm %	%	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %	ppm %
49232	< 1	0.86	10	< 10	101	< 1	< 5	2.71	< 1	4	11	20	0.42	0.32	63	< 2	0.02	15	520	1	< 5	< 1	< 10	104	12	9	< 10	6	52	< 1
49233	< 1	0.76	30	< 10	107	< 1	< 5	2.80	< 1	2	15	14	0.32	0.23	82	< 2	0.02	10	510	3	< 5	< 1	< 10	64	18	11	< 10	5	78	2
49234	< 1	0.75	5	10	81	< 1	< 5	2.20	< 1	5	16	8	0.57	0.30	301	< 2	0.01	13	642	8	< 5	< 1	< 10	64	43	10	< 10	4	64	< 1
49235 & 49237	< 1	0.74	15	< 10	65	< 1	< 5	1.98	< 1	4	18	11	0.66	0.29	234	< 2	0.02	16	628	6	5	1	< 10	70	187	12	< 10	4	71	2
49236	< 1	0.54	25	< 10	66	< 1	< 5	2.11	< 1	3	10	9	0.50	0.20	199	< 2	0.01	15	396	7	< 5	< 1	< 10	80	124	7	< 10	3	80	< 1
49238	< 1	0.47	30	< 10	79	< 1	< 5	1.83	< 1	3	11	9	0.40	0.18	94	< 2	0.02	14	494	6	< 5	< 1	10	79	171	4	< 10	2	31	2
49239	< 1	0.42	40	< 10	64	< 1	< 5	1.79	< 1	2	11	9	0.41	0.17	112	< 2	0.01	15	638	12	< 5	< 1	< 10	59	129	4	< 10	2	36	< 1
49240	< 1	1.99	< 5	< 10	95	< 1	< 5	0.69	< 1	11	44	9	1.96	0.79	297	< 2	0.02	23	668	2	< 5	5	< 10	22	1029	41	< 10	7	111	1

A .5 gm sample is digested with 2 ml of 3:1 HCL/HNO3 at 95 C for 120 min and diluted to 10 ml with DI H2O This method is partial for many oxide materials

Paul Maguire

TODD GEOLOGICAL SERVICES

PROJ: MARTINSON
 SAMPLE: LAKE SEDIMENT
 SW-0179-RG1

TSL\ASSAY Laboratories

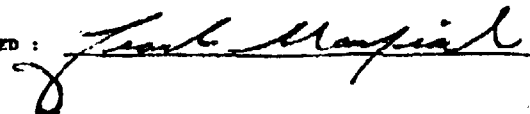
1270 FEUSTER DRIVE, UNIT 3, MISSISSAUGA ONTARIO L4W 1M4
 PHONE #: (905) 602-8236 FAX #: (905) 206-0513

REPORT No. : M9715
 Page No. : 1 of 1
 File No. : PBO9NA.DM
 Date : FEB-10-1998

I.C.A.P. TOTAL OXIDE ANALYSIS

Lithium Metaborate Fusion

SAMPLE #	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	TiO2	MnO	P2O5	Ba	Sr	Zr	Y	Sc	Nb	Be	Ni	Cr	Cu	V	Co	Zn	LOI	TOTAL
	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
49232	11.53	1.81	0.68	3.29	0.45	0.16	0.22	0.07	0.01	0.10	130	120	10	6	1	< 30	< 1	15	20	20	20	5	60	81.32	99.66
49233	12.16	1.70	0.60	3.19	0.34	0.12	0.20	0.07	0.01	0.12	140	70	20	6	2	< 30	< 1	10	15	15	15	5	75	81.25	99.74
49234	22.63	2.99	1.08	2.21	0.41	0.36	0.58	0.16	0.04	0.14	170	90	30	6	4	< 30	< 1	15	15	5	10	5	70	69.40	99.88
49235&49237	21.74	3.06	1.05	2.24	0.43	0.34	0.68	0.16	0.04	0.16	160	90	30	4	3	< 30	< 1	15	15	10	20	5	70	69.70	99.56
49236	19.78	2.27	0.92	2.55	0.35	0.21	0.34	0.12	0.03	0.12	130	100	20	4	2	< 30	< 1	15	10	10	20	< 5	75	73.07	99.76
49238	12.54	2.42	0.63	2.04	0.31	0.38	0.52	0.12	0.02	0.10	160	110	30	6	3	< 30	< 1	15	30	10	15	< 5	35	80.78	99.87
49239	11.82	2.10	0.65	2.10	0.32	0.25	0.42	0.11	0.02	0.14	130	80	40	6	1	< 30	< 1	20	< 5	10	25	< 5	40	81.66	99.58
49240	64.92	12.07	3.44	1.84	1.24	2.24	2.76	0.56	0.06	0.16	590	240	200	12	8	< 30	1	15	55	10	50	10	100	10.58	99.87

SIGNED : 



Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

8W-0179-RG1

Company: **TODD GEOLOGICAL SERVICES INC**
Project: **Martinson**
Attn: **T. Keast**

Date: FEB-03-98

We hereby certify the following Geochemical Analysis of 8 Lake Sediment samples submitted JAN-26-98 by .

Sample Number	Au PPB	Au Check PPB	Multi Element	WRA
49232	7	-	Results	Results
49233	3	-	to	to
49234	2	-	follow	follow
49235 & 49237 *	3	-		
49236	5	-		
49238	7	10		
49239	Nil	-		
49240	3	-		

Please note * indicates there were two tags in one sample bag.

Certified by



42J06SW2001 2.18239 SOUTH OF RIDGE LAKE 900

ity of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the d to review the assessment work and correspond with the mining land holder. ing Recorder, Ministry of Northern Development and Mines, 6th Floor,

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Name Donald McKinnon	Client Number 168276
Address Box 1130 Airport Rd	Telephone Number 705-268-8822
TIMMINS ONT	Fax Number
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

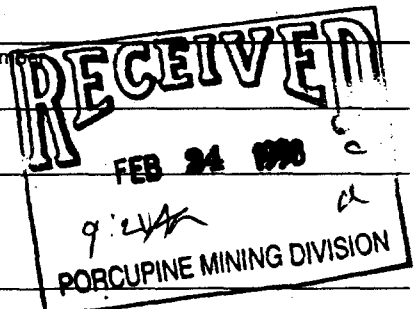
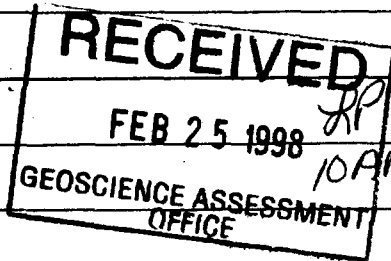
Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

Work Type Lake sediment surveys	Office Use
	Commodity
	Total \$ Value of Work Claimed \$15,140
Dates Work Performed From 15 01 98 To 17 01 98	NTS Reference
Global Positioning System Data (if available)	Mining Division Porcupine
Township/Area South of Ridge Lake Area	Resident Geologist District Timmins
M or G-Plan Number G-1716	

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name Todd Keast	Telephone Number 235-2590
Address 1204 Grace Ave Porcupine ON	Fax Number 235-2991
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number



4. Certification by Recorded Holder or Agent

I, Donald McKinnon (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent <i>[Signature]</i>	Date Feb 19/98
Agent's Address Timmins	Telephone Number 705-8822

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$8,892	\$4,000	0	\$4,892
1 1223561	16	\$1,469		\$1,469	
2 1223559	8	\$2,202		\$2,202	
3 1223554	12	\$1,469		\$1,469	
4					
5 1201625	12		\$5,140		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Column Totals		5,140	\$5,140	5,140	

I, Todd Keast, do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: [Signature] Date: Feb 19/98

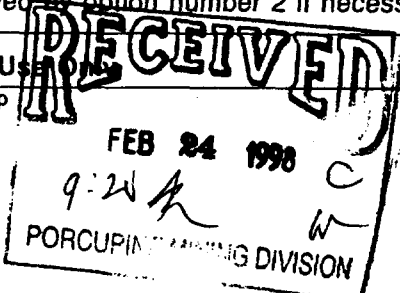
6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached map as follows (describe):

RECEIVED
 FEB 25 1998
 GEOSCIENCE ASSESSMENT
 OFFICE

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Received Stamp 	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	



Statement of Costs for Assessment Credit

Transaction Number (office use) W9860.00/36

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this 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 a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Table with 4 columns: Work Type, Units of work, Cost Per Unit of work, Total Cost. Includes entries for Lake Sediment Survey, Associated Costs, and Food and Lodging Costs.

RECEIVED FEB 25 1998 10 AM GEOSCIENCE ASSESSMENT OFFICE

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.

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.

Certification verifying costs:

I, Donald McKinnon, 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 [Signature] I am authorized to make this certification.

RECEIVED FEB 24 1998 9:20 AM PORCUPINE DIVISION

Signature [Signature] Date Feb 18/98

May 1, 1998

DONALD MCKINNON
BOX 1130
TIMMINS, Ontario
P4N-7M5

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

Telephone: (888) 415-9846
Fax: (705) 670-5881

Dear Sir or Madam:

Submission Number: 2.18239

Status

Subject: Transaction Number(s): W9860.00136 Deemed 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.

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

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.18239

Date Correspondence Sent: May 01, 1998

Assessor: Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9860.00136	1223561	SOUTH OF RIDGE LAKE	Deemed Approval	April 29, 1998

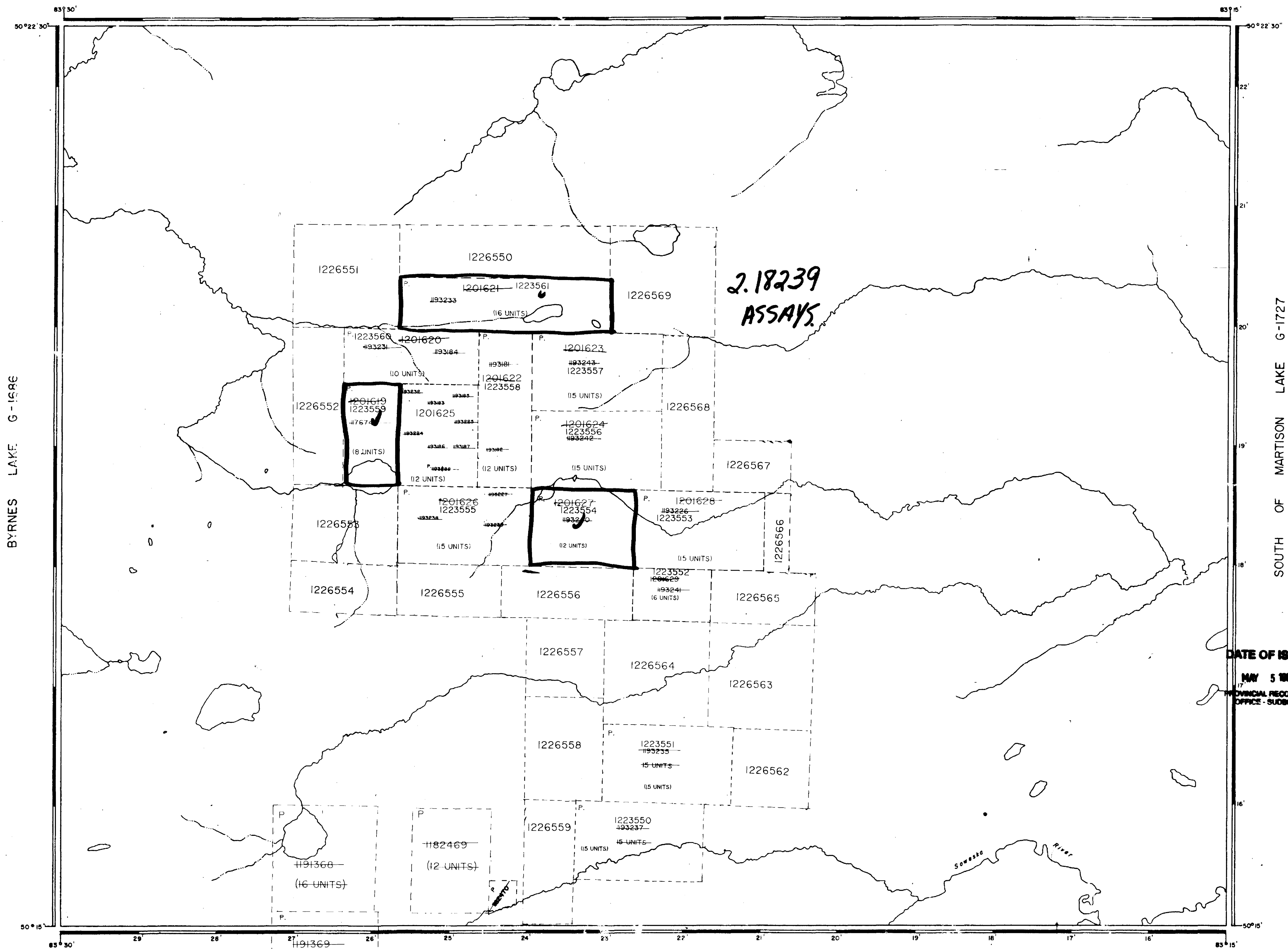
Section:
17 Assays ASSAY

Correspondence to:
Resident Geologist
South Porcupine, ON

Recorded Holder(s) and/or Agent(s):
DONALD MCKINNON
TIMMINS, Ontario

Assessment Files Library
Sudbury, ON

RIDGE LAKE G-1709



BYRNES LAKE G-1586

SOUTH OF MARTISON LAKE G-1727

WEST OF BURSTALL TWP G-1720

REFERENCES

- AREAS WITHDRAWN FROM DISPOSITION
- M.R.S. - MINING RIGHTS ONLY
 - S.R.S. - SURFACE RIGHTS ONLY
 - M.S. - MINING AND SURFACE RIGHTS

LEGEND

- HIGHWAY AND ROUTES
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, RANGE 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 OR CO-OPPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

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	▽
ORDER-IN-COUNCIL	OC
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

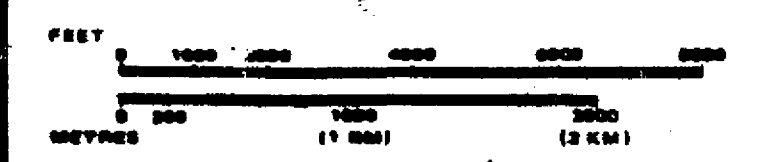
NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1912, VESTED IN ORIGINAL PATENTEES BY THE PUBLIC LANDS ACT, R.S.A. 1910, CHAP. 200, SEC. 66, SUBSEC. 1.

DATE OF ISSUE

MAY 5 1988

PROVINCIAL RECORDING OFFICE - SUDBURY

SCALE: 1 INCH = 40 CHAINS



AREA
SOUTH OF RIDGE LAKE

M.E.R. ADMINISTRATIVE DISTRICT
HEARST/KAPUSKASING
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

