



42A06NE2017 2.20106 SHAW

010

**Access Road & Bulk Sample
Assessment Report
For
The C-V Silica Deposit
In
Shaw Township**

Nortem Mining & Exploration Inc.

**B.J. McKay
B.J. McKay Ltd.**

**Feb 2000
Timmins, Ontario**

2.20106

Introduction

Custom Concrete was hired by Nortem Mining & Exploration Inc to construct an access road to the C-V (Croxall-Vuksanovich) Silica Deposit in Shaw Township. In addition to the road construction the firm conducted airtrack drilling and blasting of a bulk sample.

Property Location and Access

The C-V Silica Deposit is located in the northeast portion of Shaw Township. Access to the property is via the Langmuir Timber road southward from South Porcupine. The property is accessible from the Langmuir Road via a private road through the Spence property as shown on Figure 1.

Claims

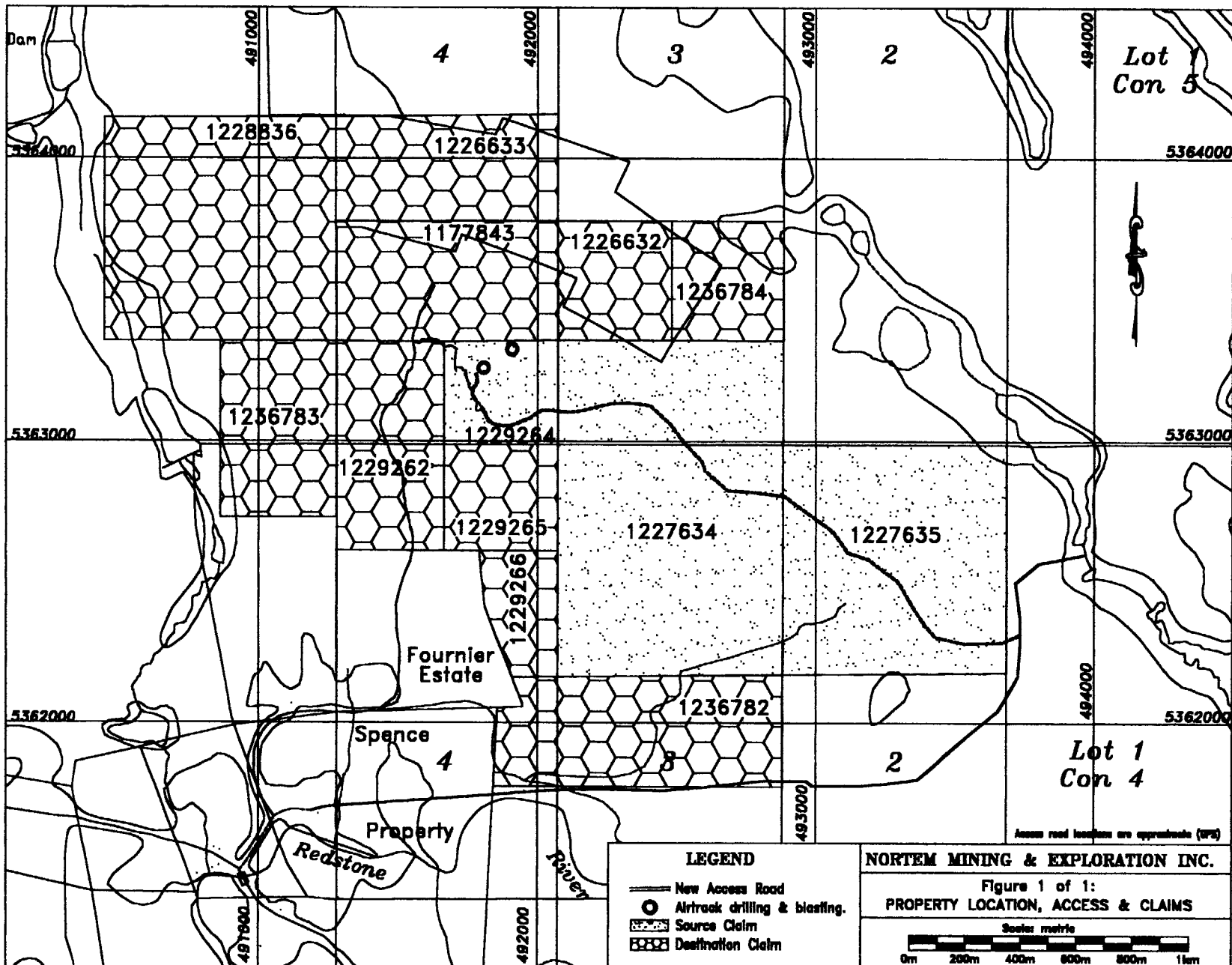
The C-V Deposit is located on claim 1229264 which forms part of a 30 unit, (13 claims), property held 100% by Nortem Mining & Exploration. Refer to Figure 1.

Present Work

During the period from 27 September, 1999 to 2 November, 1999 Custom Concrete completed construction of an access road, airtrack drilling and blasting for the purposes of extraction of a 499 tonne bulk sample. The author provided site supervision. Figure 1 shows the location of the new access road, which follows the route of a previous logging road. The two circles show the location of the sites that were drilled and blasted. Approximately 400 tonnes of material were broken in preparation for extraction.

The most northerly site is approximately 5m x 5m x 3.5m in size. The southerly site is approximately 4.5m x 4.5m x 3m in size.

Small samples of material up to 200 kg have been removed for testing. At the time of writing most of the broken material remained on site pending arrangements for off-site testing and storage.

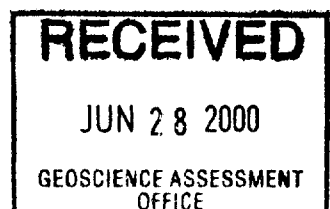


**Access & Bulk Sample
Assessment Addendum Report
For
The C-V Silica Deposit
In
Shaw Township**

Nortem Mining & Exploration Inc.

**B.J. McKay
B.J. McKay Ltd.**

**Feb 2000
Timmins, Ontario**



Introduction

This report is to provide additional information that was previously unavailable as per a 45-day notice dated 25 May 2000.

Specifically, invoices for trail improvements and results of the bulk sample testing. In addition regional and property geology are included as per the 45-day notice.

Scope of Work

Nortem Mining & Exploration Inc. are developing the CV Silica Property, as a source of flux. Additional end uses for the material may include glass and foundry purposes.

Initially the exposed bedrock surface was sampled by conventional manual methods to obtain an idea of the extent and grade of the silica content. The location of the bulk sample was based on the results of the surface sampling. Complete details of this sampling will be submitted at a later date.

The original filing of the mechanical work was made to meet assessment deadlines of some claim units.

Trail Construction and Receipts

An old, overgrown, existing, timber haulage trail was enlarged to permit passage of drilling and haulage equipment. The existing route was chosen as it traversed along a height of land for most of its length even though it was longer by about 3 km than construction through good timber of a direct trail to the proposed quarry site. The trail was improved with use of a D7 dozer and a small wide pad dozer for drainage. The trail was widened as the plans called for removal of the material by transport truck during the winter. There were concerns about damage to the haulage trucks if the trees were too close along the sides of the road or the corners too sharp to allow trailers into the site. A 20-foot excavator was used to dig some test pits in the chert as the unit exhibits a very friable sugary texture that may permit extraction directly with an excavator. Also the D7 ripper was used in an attempt to take advantage of the rock texture prior to the need for drilling.

Invoices for the trail improvement are included in Appendix A. Since some of the invoiced items are not allowed for assessment credits the following table has been prepared to show those items whose cost was incurred for the extraction of the bulk sample. The table items have been highlighted in yellow on the invoices. None of the material could have been removed without use of all equipment and costs as presented in the original invoices. The intention was to

construct a trail suitable for material extraction during the winter and not during the more expensive summer construction season. The trail was improved sufficiently to allow passage of self-propelled drill equipment, transport of a wheel mounted fuel tanker, transport of explosives by 4x4 and other materials which requires a more solid footing than a trail used for diamond drilling where equipment is dragged with a dozer or skidder. The outcrop cleaning, drilling, blasting and stockpiling of the material was to be done during the warm above freezing temperature and extraction left until freeze-up for removal by truck. There was no intention of having a "road" suitable for family cars constructed at anytime. The amount of the invoice is the amount incurred for extraction of the required sample.

Date	Item	Cost
Sept 27	Transfer sample	720.00
Oct 1	Dozer	255.00
Oct 3	Dozer	210.00
Oct 4	Dozer & Shovel	1,762.50
Oct 19	Drill	637.50
Oct 20	Shovel & Drill	1,455.00
Oct 21	Shovel & Drill	945.00
Oct 22	Shovel, Dozer & Drill	1,350.00
Oct 23	Shovel & Dozer	675.00
Oct 26	Shovel	255.00
Nov 2	Drill	255.00
	Drilling	15,579.50
	Fuel	400.00
	Subtotal	\$24,499.50
	GST	1,714.97
	Grand Total	\$26,214.47

Analytical Results

Approximately 499 tonnes of material were drilled and blasted during the period covered by the invoices and previously submitted for assessment credit. The material was left at the site during the winter and approximately 160 tonnes of material was transferred to the Falconbridge metallurgical site during the spring thaw at the end of March, 2000. Due to premature thawing and the spring road closure only a portion of the extracted material was moved for testing. The results of the Falconbridge test are included, in Appendix B, in a memo faxed on 6 June 2000.

The spring work will be filed for assessment in the near future.

Regional Geology

The Abitibi Subprovince is an 800 by 300-km Archean "granite-greenstone" domain situated along the southern margin of the Superior Province. It is dominated by supracrustal and granitoid rocks with a range of ages from 2.75 to 2.67 Ga (Ayer and Trowell, 1998). The Abitibi Greenstone Belt is the largest greenstone belt within the Canadian Shield and extends from Lake Superior in northcentral Ontario through into Quebec.

There are two major groups of volcanic rocks and associated sediments, the Deloro and Tisdale, in the Timmins area. The Deloro Group underlies the project area.

"The geology of the Croxall-Vuksanovich Property was mapped as a northwest-southeast series of gabbro intrusions, mafic volcanic flows, and chert-oxide iron formations. The entire sequence is situated along the northeast side of the large scale Shaw Dome, centered in Shaw Township" (Keast, 1999). The main sequence of interest for this report is the chert and iron formation members.

"Iron formation forms a conspicuous and persistent stratigraphic unit in the area, and is virtually confined to the upper formation of the Deloro Group. Oxide and sulphide facies are prominent; carbonate facies iron formation was rarely observed, and only locally forms minor intercalations with dominantly magnetite- and pyrite-bearing zones."

"Oxide facies iron formation typically consists of alternating layers of magnetite and chert. The magnetite layers are 1 mm to 80 mm thick, average approximately 10 to 20 mm in thickness, and consist of fine-grained granular magnetite and minor (generally 10 percent) chert. Chert layers are light grey to white weathering and fresh, varying from a few millimetres to 30 cm or more in thickness, commonly average approximately 1 to 3 cm, and are almost invariably present in an amount in excess of magnetite-rich layers; chert-magnetite ratios are rarely less than approximately 3 to 2. The chert is recrystallized to a fine-grained granular mosaic. On some weathered surfaces, a fine lamination, 0.05 to 1.0 mm thick, is discernable; this is suggestive of a primary layering. Rare grains of pyrite, pyrrhotite, and magnetite are common in the chert layers."

"Minor black argillaceous sedimentary rocks from layers up to 3 m thick. Narrow, soft, dark green chloritic layers are locally present."

"Sulphide facies iron formations are dominantly composed of white to light grey or pale red ferruginous chert. Layers of sulphide, graphite, argillite, and rarely minor magnetite form a variable part of many of the iron formation zones. Locally, very massive appearing finely granular chert constitutes virtually all of

the exposed iron formation unit, as for example in northwest-central Shaw Township, 1.5 km southwest of Mt. Logano. Pyrite, generally associated with minor pyrrhotite, is the dominant sulphide and characteristically occurs in narrow 2 cm thick layers, fine disseminations, or stringers in chert. Other sulphide minerals include minor chalcopyrite, pentlandite, and rare sphalerite, and galena. In general, sulphide minerals constitute less than 10 to 15 percent of an iron formation; less commonly, zones contain 30 to 85 percent sulphide minerals and are up to 5 m thick." (Pyke, 1982, p41).

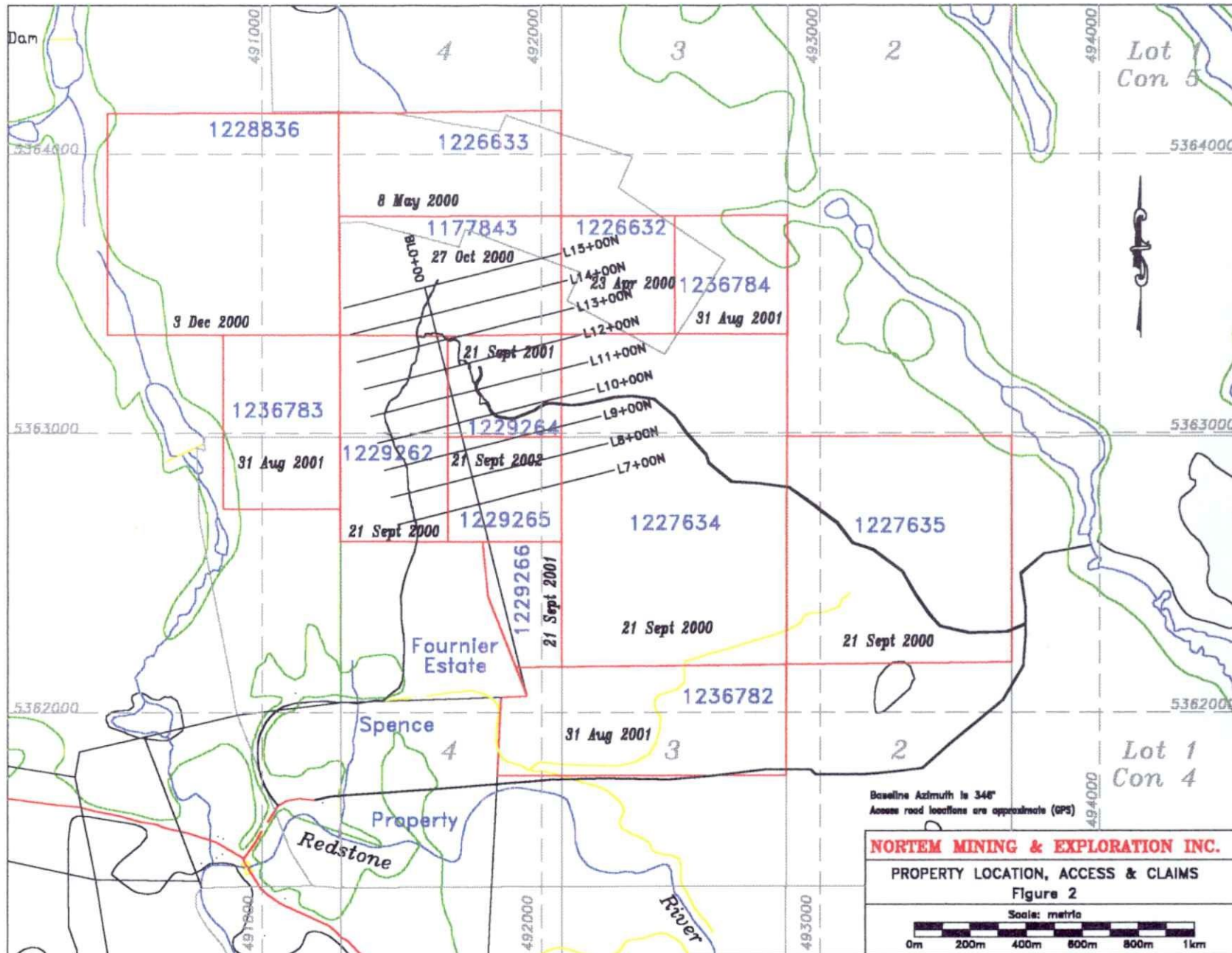
Property Geology

The Eldorado Assemblage of the Deloro Group underlies the CV property. This sequence of rocks consists of intermediate to felsic volcanics, iron formation and associated metasedimentary rocks and ultramafic flows and intrusions (Pyke, 1982). The Eldorado Assemblage outcrops around the Shaw Dome in a circular pattern.

Geological mapping, Figure 3c, of the main claim was conducted by Keast in 1999. "The mapping covers an area approximately 200 metres wide by 200 metres long. A small grid totaling 1,100 metres, with pickets every 20 metres was established for control purposes."

"The stratigraphy of the area includes a north-south trending east dipping package of mafic volcanic flows, oxide facies iron formation, chert formation, and pillowed mafic volcanic flows. Bedding and pillow facings indicate tops direction to the east with shallow 25° to 35° dips. A minor east-west shear was observed at one outcrop location, however no major structures were identified."

"The western portion of the area consists of massive mafic volcanic flows, dark green in colour, fine-grained with a low magnetic susceptibility (MS) signature. Immediately to the east of the mafic flow is a magnetite rich portion of the oxide facies iron formation, which ranges from 5-25 metres in thickness, and is strongly magnetic. To the east of the magnetite rich portion of the iron formation is a bedded white to grey chert horizon which on surface ranges from 50 to 125 metres in thickness (true thickness 85 metres). The chert is recrystallized and thus has a granular gritty texture. The horizon has localized areas with moderate magnetite content, thus the MS varies from 0.00 to 72.0. Whole rock analysis from a number of grab samples by the property owner returned SiO₂ contents up to 99%. Immediately to the east of the chert horizon is a pillowed mafic volcanic horizon, which is dark green in colour with a low magnetic signature."



Baseline Azimuth is 346°
 Access road locations are approximate (GPS)

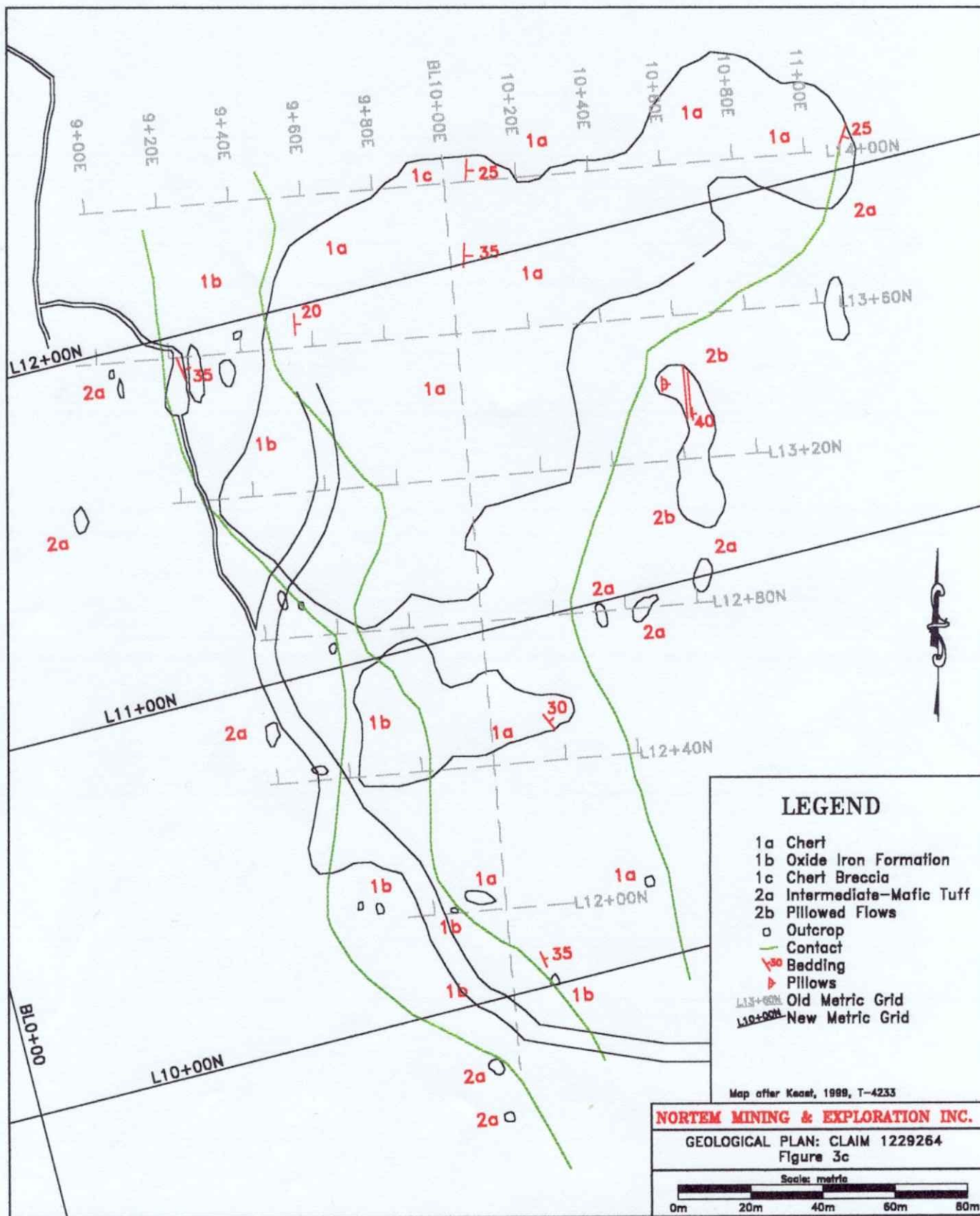
NORTEM MINING & EXPLORATION INC.

PROPERTY LOCATION, ACCESS & CLAIMS

Figure 2

Scale: metric





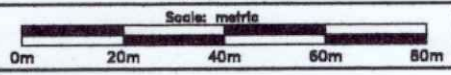
LEGEND

- 1a Chert
- 1b Oxide Iron Formation
- 1c Chert Breccia
- 2a Intermediate-Mafic Tuff
- 2b Pillowed Flows
- Outcrop
- Contact
- - - Bedding
- ▲ Pillows
- ~~L13+00N~~ Old Metric Grid
- ~~L10+00N~~ New Metric Grid

Map after Keast, 1989, T-4233

NORTEM MINING & EXPLORATION INC.

GEOLOGICAL PLAN: CLAIM 1229264
Figure 3c



RECEIVED: 6-15-00 11:02AM
06/15/00 10:27705 235 7310 => NORTEM/TEMPROCK; #1
705 235 7310 KIDD SMELTER

001

**FALCONBRIDGE LIMITED**
Kidd Metallurgical Division

Date: Mar 15, 2000
To: Nortem Mining and Exploration Inc. C/O Mr G. Fuller
Subject: Special Silica Test

Gord,

This is a summary of the test lot of silica ore you supplied to my company.

Nortem Mining approached Kidd Metallurgical Division representatives with a sample of high grade silica ore.

The ore was considered unique for several reasons:

- its high silica grade
- its friability and natural particle size

Originally a 500 metric tonne test lot was offered by Nortem, but approximately 200 tonnes were delivered to the Kidd site for the initial test.

Silica is used in the Copper smelting process as a flux to capture iron and other impurities.

The silica and concentrated ore is pneumatically conveyed into the smelting furnace. The silica particle size and purity can significantly affect the rate of reaction. Good fluxing will result in a slag with low viscosity and provides a clean separation from the copper mattc.

The results of this test have not been conclusive.

The 200 tonnes were diluted through our processing equipment and storage bins. It is difficult to conclude the effect this material had on the slag making operation. It was noted that the crushing equipment handled the material well with reduced recycle.

We have requested a larger lot of material (5000 tonnes) from Nortem to be tested over a month.

This will help define the benefit of using this material versus present supplies.

Rob Roeterink P. Eng
Senior Project Engineer
Kidd Technology Group
Phone 705 235 8121 ext 7771
Fax 705 235 7317

Ontario

Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) <i>W000.00079</i>
Assessment Files Research Imaging



42A06NE2017 2.20106 SHAW 900

Subsection 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this assessment work and correspond with the mining land holder. Questions about this form Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario.

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

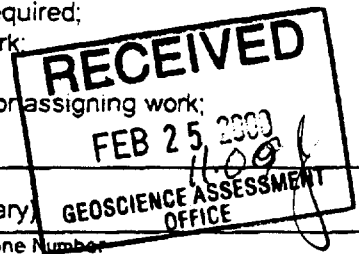
1. Recorded holder(s) (Attach a list if necessary)

Name Nortem Mining & Exploration Inc.	Client Number 304080
Address 222 Gladstone Ave	Telephone Number 705-476-3555
North Bay, Ontario P1A 2M2	Fax Number 705-476-3552

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

<input type="checkbox"/> Geotechnical: prospecting, surveys, assays and work under section 18 (regs)	<input checked="" type="checkbox"/> Physical: drilling stripping, trenching and associated assays	<input type="checkbox"/> Rehabilitation
Work Type Road building, airtrack drilling, blasting and supervision	Office Use Commodity	Total \$ Value of Work Claimed 35,140
Dates Work Performed From 27 Sept 1999 To 2 Nov 1999	NTS Reference	
Global Positioning System Data (if available)	Township/Area Shaw	Mining Division Porcupine
	M or G-Plan Number G-3999	Resident Geologist District Timmins

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.



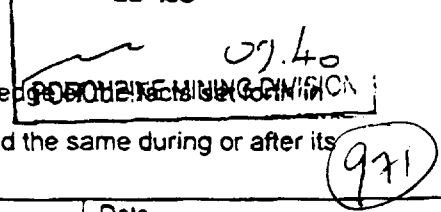
3. Person or companies who prepared the technical report (Attach a list if necessary)

Name B.J. McKay	Telephone Number 705-235-3101
Address P.O. Box 219, Porcupine, Ontario P0N 1C0	Fax Number 705-266-9107
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, Bryan J. McKay (Print Name), do hereby certify that I have personal knowledge of the work performed and that 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>B.J. McKay</i>	Date 24 Feb 2000
Agent's Address P.O. BOX 219, Porcupine, Ontario P0N 1C0	Telephone Number 705-235-3101
	Fax Number 705-235-3101



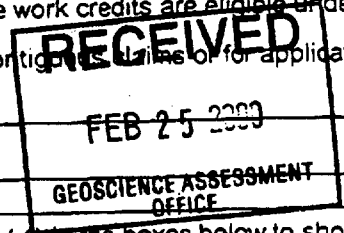
Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (including) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W0060.00079

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 P1229264	1	\$23,464	\$1,200	\$20,400	\$1,864
2 P1229262	2		\$2,400		
3 P1236783	2		\$2,400		
4 P1236784	1		\$1,200		
5 P1226632	1		\$1,200		
6 P1177843	2		\$2,400		
7 P1226633	2		\$2,400		
8 P1228836	4		\$4,800		
9 P1229266	1		\$2,400		
10 P1236782	3		\$3,600		
11 P1227635	4	\$7,338	\$4,800	\$2,400	\$138
12 P1227634	6	\$7,338	\$7,200		\$138
13 P1229265	1		\$1,200		
14					
Column Totals	30	\$38,140	\$36,000	\$22,400	\$2,140

I, Bryan J. McKay, 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: 24 Feb 2000



6. Instruction 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 appendix or as follows (describe):

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

For Office Use Only
Received Stamp

Deemed Approved Date

Date Notification Sent

2 2 0 0 0 0

Statement of Costs for Assessment Credit

Transaction Number (office use)
 W0060.00079

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.

Work Type	Units of work Depending on the type of work, list the number of hours/day worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Road construction, drilling and blasting	Construction of approximately 1.5 km of access road and drilling and blasting of approximately 499 tonnes of material (two sites).	Approx \$2293 per day (average)	\$34,390.00
Supervision	15 days	\$250.00	\$3,750.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
Total Value of Assessment Work			\$38,140.00

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 $\times 0.50 =$ 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.

RECEIVED
 FEB 15 2000
 GEOSCIENCE ASSESSMENT OFFICE

Certification verifying costs:

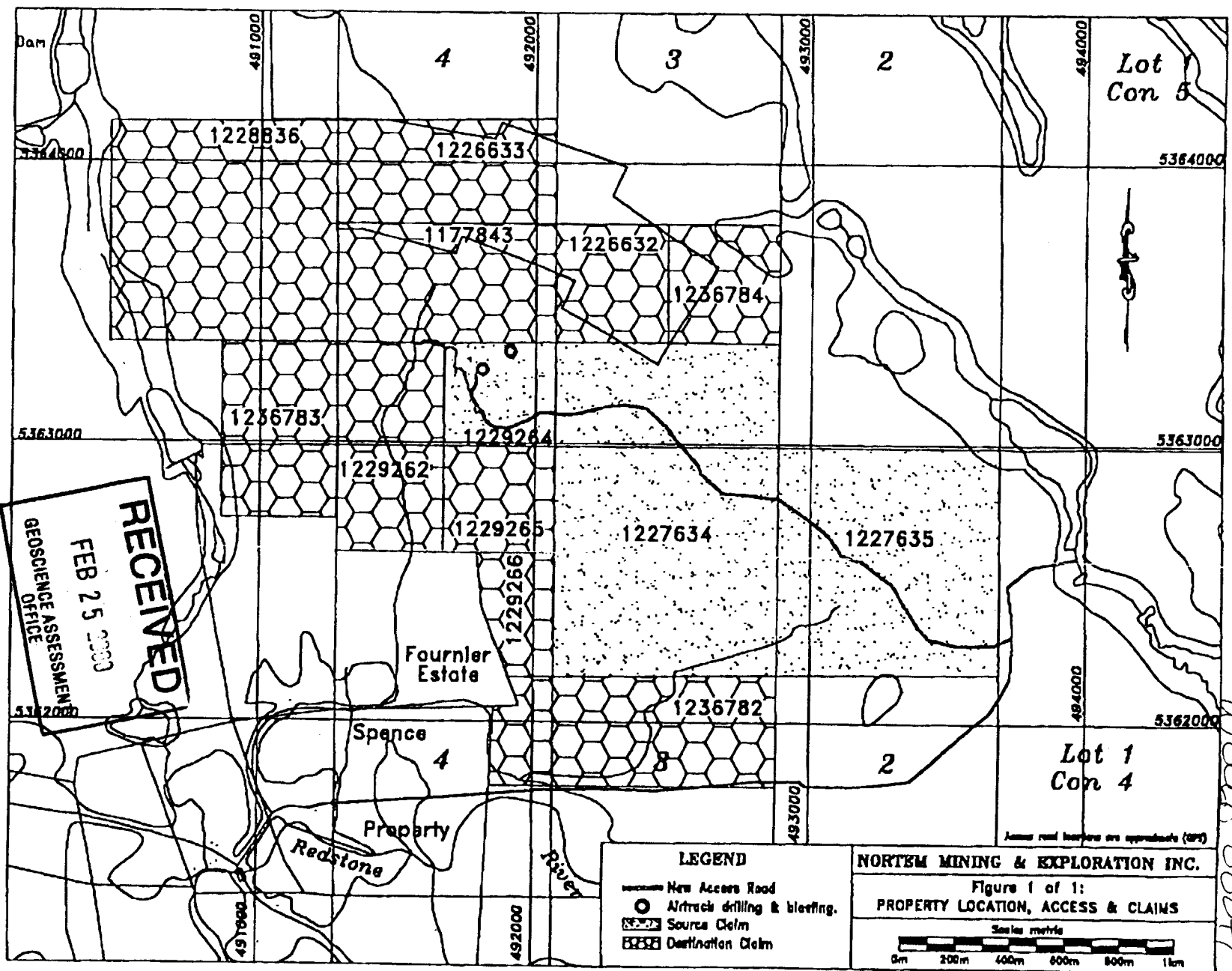
I, B.J. McKay, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying

Declaration of Work form as Northern Mining & Exploration Inc. I am authorized to make this certification.
(recorded holder, agent or state company position with signing authority)

RECEIVED
 FEB 25 2000
 0940
 PORCUPINE MINING DIVISION

Signature: B.J. McKay Date: 24 Feb 2000

25 100 09:51 FR MRD PORCUPINE DIU 705 235 1610 TO 817055705881 P.05/05



RECEIVED
 FEB 25 2000
 GEOSCIENCE ASSESSMENT
 OFFICE

LEGEND

- New Access Road
- Airstack drilling & blasting.
- Source Claim
- Destination Claim

NORTEM MINING & EXPLORATION INC.

Figure 1 of 1:
PROPERTY LOCATION, ACCESS & CLAIMS

Scale: metre

0m 200m 400m 600m 800m 1km

Lot 1
 Con 4

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

July 13, 2000

NORTEM MINING & EXPLORATION INC.
P.O. BOX 70
TEMAGAMI, ONTARIO
P0H-2H0

Telephone: (888) 415-9845
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Dear Sir or Madam:

Submission Number: 2.20106

Status

Subject: Transaction Number(s): W0060.00079 Approval After Notice

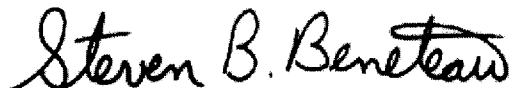
We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

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. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

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 **JIM MCAULEY** by e-mail at james.mcauley@ndm.gov.on.ca or by telephone at (705) 670-5880.

Yours sincerely,



ORIGINAL SIGNED BY
Steve B. Beneteau
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.20106

Date Correspondence Sent: July 13, 2000

Assessor: JIM MCAULEY

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W0060.00079	1229264	SHAW	Approval After Notice	July 09, 2000

Section:

18 Other BULK

The 45 days outlined in the Notice dated May 25 , 2000 have passed and the expense invoices and revisions have been reviewed.

Assessment work credit has been approved as outlined on the attached Distribution of Assessment Work Credit sheet.

Allowable expenses for the bulk sampling are: \$26,214 as per the invoices related to the removal of the bulk sample, and \$3750 for supervision.

The assessment credit is being reduced by \$8,176. The TOTAL VALUE of assessment credit that will be allowed, based on the information provided in this submission, is \$29,964.

Correspondence to:

Resident Geologist
South Porcupine, ON

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

Bryan J. McKay
SOUTH PORCUPINE, ONTARIO, CANADA

Assessment Files Library
Sudbury, ON

NORTEM MINING & EXPLORATION INC.
TEMAGAMI, ONTARIO

Distribution of Assessment Work Credit

The following credit distribution reflects the value of assessment work performed on the mining land(s).

Date: July 13, 2000

Submission Number: 2.20106

Transaction Number: W0060.00079

<u>Claim Number</u>	<u>Value Of Work Performed</u>
1229264	29,964.00
1227635	0.00
1227634	0.00
Total: \$	29,964.00
