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INTERPRETATION REPORT OF AN * INDUCED POLARIZATION SURVEY

CORPORATION MINIERE INMET WEST KIRKLAND PROPERTIES

(P.N. 770, 771, 773 and 774) Cairo, Flavelle and Holmes Townships, Ontario

> Paul Lortie November 1996

*Re-interpretation following up the report written by G. Lambert (Report on induced polarization survey, Cairo, Flavelle and Holmes Townships, Ontario, NTS 42A/1, 41P/15 et 41P/16, August 30, 1996)

This I.P. interpretation report (2.17463) is associated with submission 2.16809 (W9680.00456)

SUMMARY

In July and August 1996, an induced polarization and resistivity survey totaling approximately 49 line-kilometres was carried out on a group of mineral exploration properties owned by **CORPORATION MINIERE INMET**, which group is designated **WEST KIRKLAND PROPERTIES** and is located in Cairo, Flavelle and Holmes Townships in Northeastern Ontario.

The results of this survey were re-processed and re-interpreted to better define some of the anomalous polarization responses and apparent resistivity contrasts detected by the survey. The results from this survey show several narrow polarizable horizons and resistivity features which are generally striking ENE-WSW to NE-SW, in excellent agreement with the regional geological trend.

A narrow zone of NNE-SSW striking polarization anomalies has also been detected near the center of the surveyed area, in Flavelle Township, which polarization anomalies are somewhat coincident with a near surface, high to very high apparent resistivity zone. It is interpreted that these latter anomalies are associated with and caused by hydrothermal (?) alteration with disseminated to non conductive semi-massive sulphide mineralization and are possibly located within a NNE-SSW shear zone.

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LIST OF MAPS:

41 pseudo-sections, from line 4+00E to line 144+00E. Scale of 1:5000.

Resistivity contours plan map (filtered values). Scale of 1:10000.

Polarization contours plan map (filtered values). Scale of 1:10000.

Interpretation plan map. Scale of 1:10000.



42A01SW0017 2.17463 HOLMES

INTRODUCTION

In July and August 1996, an induced polarization and resistivity survey totaling approximately 49 line-kilometres was carried out by Bélanger Géophysique Itée on a group of mineral exploration properties owned by **CORPORATION MINIERE INMET**, which group is designated **WEST KIRKLAND PROPERTIES** and is located in Cairo, Flavelle and Holmes Townships in Northeastern Ontario.

The geophysical survey was designed to detect the presence of potential gold mineralization associated with disseminated sulphides and/or alteration features, and to evaluate the local structural and lithological features favorable for precious metal deposition.

The following interpretation comments are based on the assumption that there are no artefacts (power line, underground cables, etc.) which affected the survey results. No information was made available to that effect.

RESULTS AND INTERPRETATION

Due to the presence of a thin and/or non conductive surface layer over most of the area, the apparent resistivities measured on the property vary from less than 1000 Ohm-metres up to more than 10000 Ohm-metres. In areas of outcropping and sub-cropping lithologies, apparent resistivity values of more than 15000 Ohm-metres are also observed.

It is interpreted that the zones characterized by the lower apparent resistivity values indicate the presence of near surface, slightly conductive materials, while the zones of high to very high apparent resistivity values may be related to highly siliceous lithologies or hydrothermal alteration zones (silicification).

In general, the induced polarization responses measured during this survey present a low to moderate background of less than 5 milliradians (mrad) in areas dominated by the presence of surface materials while other areas are characterized by a moderately high background of 5 to 10 mrad.

Several large zones of weakly anomalous polarization with values ranging from 10 to 15 mrad have been outlined and indicated as such on the interpretation map. These zones are believed to be related to a higher intrinsic polarization of the underlying lithologies, or possibly to the presence of a very low sulphide content within the rocks. They possibly indicate the presence of broad pervasive primary or secondary sulphides (pyrite alteration?).

The survey also detected several moderate to very strong anomalous responses which are characterized by polarization values of several tens mrad above background, most of which are associated with high to very high apparent resistivity. These anomalous polarization responses are interpreted to be caused by the presence of disseminated to non conductive semi-massive sulphide mineralization within alteration zones.

A total of eight anomalous polarization horizons have been identified within the surveyed area. These have been labeled from IP-1 to IP-8 on the interpretation map. These horizons have been selected on the basis of trend continuity and response strength with respect to the overall background of the surveyed area. Depth information is also given for all polarization anomalies located at depth greater than 15 metres.

The horizon **IP-1** extends from line 12+00E to line 20+00E and is opened to the southwest. It is characterized by moderate to strong polarization with little apparent resistivity increase. The adjacent very continuous polarization horizon **IP-2** was detected from line 4+00E to line 44+00E, is opened to the southwest and is probably on strike with the horizon IP-7. It is characterized by highly variable polarization and apparent resistivity values, with the strongest responses located discontinuously from line 24+00E to line 42+00E. A very large zone of anomalous response was detected at depth on line 24+00E.

A short horizon, **IP-3**, of weak to moderate polarization values was defined on lines 8+00E and 12+00E with no apparent resistivity contrast. This anomaly may extend towards the northeast on line 16+00E.

Further to the northeast, the anomalous polarization horizons **IP-4**, **IP-5** and **IP-6** have been outlined with strikes varying from NE-SW to NNE-SSW. They are characterized by narrow, moderate to very strong polarization responses within a zone of moderate to very high apparent resistivity values. Structural interpretation indicate the presence of two subparallel faults oriented NNE-SSW possibly related to a narrow (250 to 400 metres wide) shear zone within which the polarization responses are located. It is also possible that the northeastern end of **IP-2** on lines 40+00E to 44+00E is located within this interpreted shear zone.

Further east, the **IP-7** anomalous polarization horizon is characterized by strong to very strong values coincident with moderately high apparent resistivity values. This horizon strikes ENE-WSW from line 48+00E to line 70+00E and may extend towards the very strong response at the northern end of line 78+00E.

Finally, a narrow, weakly to moderately anomalous polarization horizon, namely **IP-8**, has been detected from line 124+00E to 132+00E within a zone of very high apparent resistivity values.

The apparent resistivity and polarization results also indicate the presence of NNE-SSW structural features which appear to control some of the anomalous responses, in particular the anomalies located within the central part of the surveyed area. Other structural features with an E-W orientation have partly been detected. The definition of these structures could be improved with a broader survey area or by a magnetic survey.

CONCLUSION AND RECOMMENDATIONS

The induced polarization and resistivity survey, executed on the group of properties known as **WEST KIRKLAND PROPERTIES** of **CORPORATION MINIERE INMET**, permitted to outline several moderately to very strongly polarizable horizons which are generally associated with zones of moderate to high apparent resistivity values.

Most of these polarization anomalies are probably caused by the presence of disseminated to non conductive semi-massive sulphide mineralization within broader zones of hydrothermally (?) altered (silicification) lithologies.

It is recommended to drill test the strongest polarization responses, especially where coincident with very high apparent resistivity values and most particularly within the possible shear zone identified near the center of the surveyed area (western side of Flavelle Township).

If the horizons **IP-2** and **IP-7** are of interest, it is suggested to extend the induced polarization and resistivity survey coverage from line 34+00E to line 38+00E, and from line 70+00E to line 84+00E, using similar survey parameters. If detailed information is required over some responses southwest of line 84+00E, it is recommended to use a 25-metre dipole-dipole array because of the shallow depth to bedrock within this part of the surveyed area.

Respectfully submitted,

Paul Lortie, Eng.

Geophysicist

CERTIFICATE

THIS IS TO CERTIFY THAT:

I reside at 681 Boullé, Beloeil, Province of Quebec, Canada, since 1990.

I am a graduate of Ecole Polytechnique, Université de Montréal, where I have received a B.Sc.A. in Geological Engineering in 1979.

I have been engaged in exploration geophysics since 1977 and have been practicing as a professional engineer since 1979.

I am a member of the Ordre des Ingénieurs du Québec since 1979.

I do not hold nor do I expect to receive an interest of any kind in the mineral exploration claims held by CORPORATION MINIERE INMET on the WEST KIRKLAND PROPERTIES.

Signed in Beloeil, this November 8, 1996.

Paul Lortie, Eng.

Geophysicist.

Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Transaction Number (office use) W9780 <u>·0025</u>

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990 Personal information collected on this form is obtained under the authority of sub-Mining Act, the information is a pub" Mining Act. Under section 8 of the Questions about this collection s espond with the mining land holder. 933 Ramsey Lake Road, Sudbury, velopment and Mines, 6th Floor, Instructions: - For work pe 900 0240. - Please type 383.52 1. Recorded holder(s) (Attach a list if necessary) Client Number MINING CORP. 169899 3400 , AETNA TOWER PO BOX 19 (416) - 361 - 6400 TORONTO DOMINION CENTER JORONTO (416) - 368 - 4692 Client Numb Address Telephone Number Fax Number Type of work performed: Check (>) and report on only ONE of the following groups for this declaration. Geotechnical: prospecting, surveys Physical: drilling, stripping, assays and work under section 18 (regs) trenching and associated assays Rehabilitation **Nork Type** RC-INTERPRETATION OF AN Office Use INDUCED POLARIZATION Commodity SURVEY Total \$ Value of Work Claimed ates Work erformed 30 76 NTS Reference ilobal Positioning System Data (if available) Township/Area CAIRO, FLAVELLE, HOLMES Mining Division M or G-Plan Number Resident Geologist **District** lease 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. Person or companies who prepared the technical report (Attach a list if necessary) ORTIE Telephone Number 514 446 13600 Fax Numb BELOEIL QUÉBEC, J3G 3T2 (514) 464 Pelephoné Number RECEIVED NC 1988 LARDER LAKE Fax Number MINING DIVISION 78 Telephone Number 2 1997 **APR** 188 Fax Number 9:30 %. Certification by Recorded Holder or Agent ERNARD 014 $_{-}$, do hereby certify that I have personal knowledge of the facts set n in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during fter its completion and, to the best of my knowledge, the annexed report is true. ture of Recorded Molde

Telephone Number

815-764-6404

s Address

MET MINING

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.

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: 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.

Office Use Only		
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	MINING DIVISION	Date Approved Total Value of Credit Approved
	APR 2 199/	Approved for Recording by Mining Recorder (Signature)

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Ministère du Développement du Nord et des Mines

État des coûts aux fins du crédit de jours de travail

Numéro	de	transaction	(à l'usage	du bureau)

Les renseignements personnels contenus dans la présente formule sont receuillis en vertu du paragraphe 6 (1) du Règlement sur les travaux d'évaluation. Aux termes de l'article 8 de la *Loi sur les mines*, le public a accès à ces renseignements, qui serviront à revoir les travaux d'évaluation et à correspondre avec le détenteur du terrain minier. Adressez toute question sur la collecte de ces renseignements au registrateur de claims en chef, ministère du Développement du Nord et des Mines, 6° étage, 933 Ramsey Lake Road, Sudbury (Ontario), P3E 6B5.

Type de travaux	Unités de travail Indiquez le nombre d'heures de travail/jour, de mètres de forage, de kilomètres de lignes de quadrillage, d'échantillons, etc., selon la nature des travaux.	Coût par unité de travail	Coût total
RE-INTERPRETATION	42 855 m	0,0382\$ m	1637,00
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	Valeur totale des tr	avaux d'évaluation	1637 00

Calcul des remises pour dépôt :

 Les travaux dont le rapport est déposé dans les deux ans après leur date d'exécution donnent droit à des crédits à 100 % de la valeur totale susmentionnée des travaux d'évaluation.

2. Les travaux dont le rapport est déposé entre deux et cinq ans après leur date d'exécution donnent droit à des crédits à 50 % seulement de la valeur totale des travaux d'évaluation. Si cela s'applique à vos claims, utilisez la formule suivante :

VALEUR TOTALE DES TRAVAUX D'ÉVALUATION

× 0,50 =

Valeur totale des travaux demandée.

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- Les travaux exécutés il y a plus de cinq ans ne sont pas admissibles à des crédits.

- Le titulaire enregistré peut être tenu de vérifier les dépenses indiquées dans la présent état des coûts dans les 45 jours suivant une demande de vérification, de correction ou de clarification. Le ministre peut rejeter la totalité ou une partie des travaux d'évaluation présentés si le titulaire ne respecte pas cette exigence.

- Tarita dos ilavada d ovaldation presentes si le titulal	To the respecte pas cette exigence.
Attestation des coûts :	
Je soussigné, SERNARD SOLLY (nom et prénom en lettres moulées)	_ , atteste par la présente que les montants indiqués sont aussi s pour exécuter les travaux d'évaluation sur les terrains indiqués
exacts que possible et que les coûts ont été engagé	s pour exécuter les travaux d'évaluation sur les terrains indiqués
dans la déclaration ci-jointe d'exécution. À titre de _	(titulaire enregistré, représentant ou indiquez le poste occupé dans l'entreprise
autorisé à faire cette attestation.	vous autorisant à signer)

Signature Date

Mark 25, 1997

Ministry of Northern Development and Mines Ministère du Développement du Nord et des Mines

July 7, 1997

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



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

Submission Number: 2.17463

Telephone: (705)

Fax: (705)

705) 670-5853 705) 670-5863

Dear Sir or Madam:

Status

Subject: Transaction Number(s): W9780.00257 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.

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

ncodel.

Mines and Minerals Division

Correspondence ID: 11032

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.17463

Date Correspondence Sent: July 07, 1997 Assessor: Steve Beneteau

Transaction Number First Claim Number

Township(s) / Area(s)

Status

Approval Date

W9780.00257

982260

CAIRO, FLAVELLE, HOLMES

Deemed Approval

July 01, 1997

Section:

18 Other DATA

Correspondence to:

Mining Recorder Kirkland Lake, ON

Resident Geologist Kirkland Lake, ON

Assessment Files Library Sudbury, ON

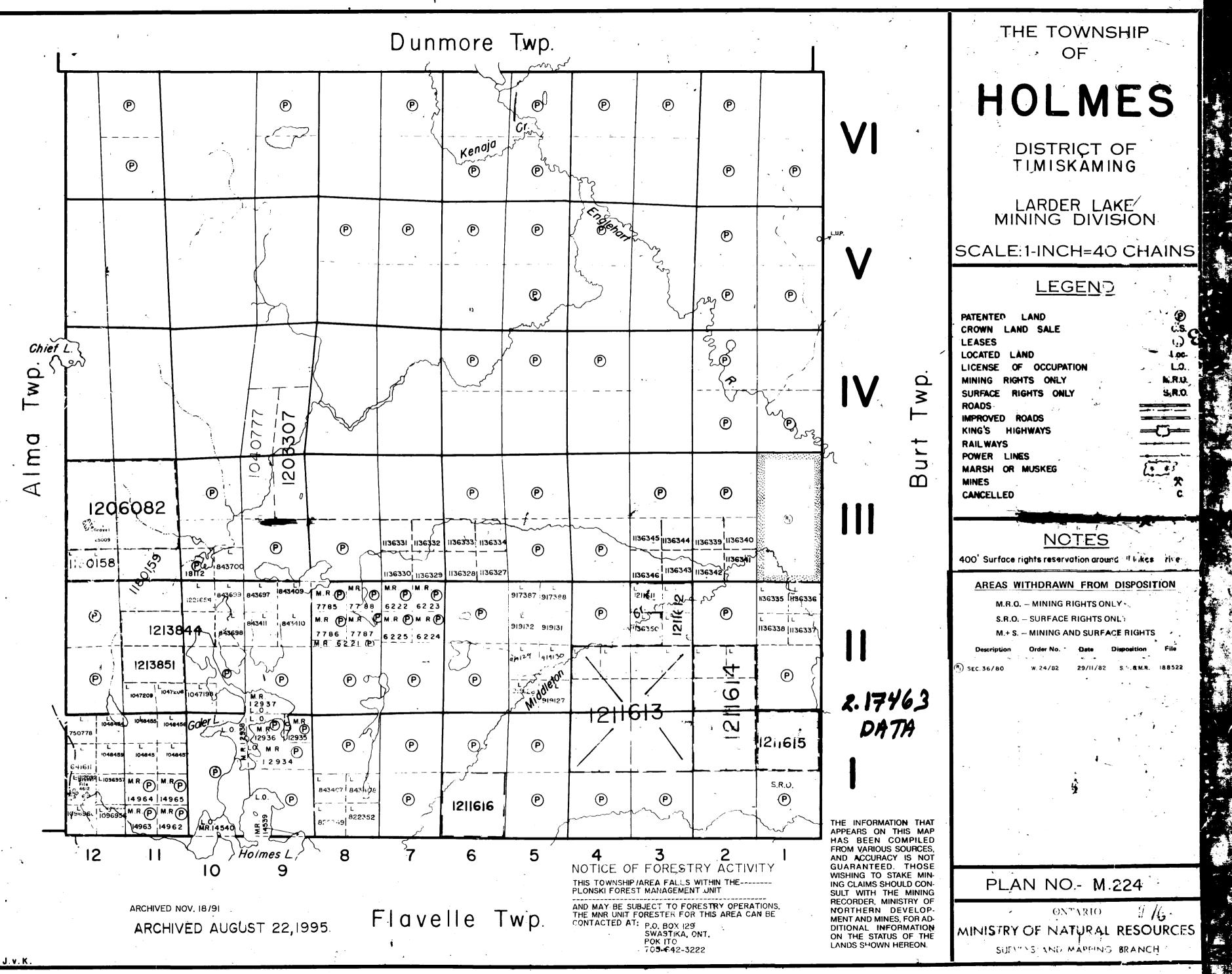
Recorded Holder(s) and/or Agent(s):

Bernard Boily

ROUYN-NORANDA, QUEBEC

INMET MINING CORPORATION

TORONTO, Ontario



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