KIDD CREEK MINES LTD.

REPORT ON GEOPHYSICAL WORK

IN

CUNNINGHAM TOWNSHIP

(CUNNINGHAM 31)

RUNNING GHOST SOUTH GRID

NTS 41O/10

CLAIMS: P 641155 - P 641175

APRIL, 1984

J. A. SLANKIS

SUMMARY AND RECOMMENDATIONS

The survey results are rather disappointing. The conductors that were outlined are either associated with an iron formation and known to contain nothing of economic interest, or are formational features, most likely graphitic zones, in a mafic tuff unit. The only conductor which might normally be recommended for follow-up is zone K because of its magnetic signature; however, the airborne results show that it is the western end of a long trend of multiple, strong formational conductors.

No additional work can be recommended on the basis of the geophysical results.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 General

Geophysical work consisting of magnetic, VLF and dual frequency horizontal loop surveys was carried out on this group of 21 contiguous claims, located in Cunningham, Greenlaw and Blamey Townships (Fig. 1).

The surveys were performed during July, 1983 by the following Kidd Creek employees: M. W. Zang, D. Kujanpaa, R. Daigle and M. Mageau. The crew was based at a camp at the north end of Running Ghost Lake and used a boat to gain access to the grid. The road from Sultan, 10 km to the south, to Peter Lake passes through the western part of the grid.

1.2 Previous Work

Since the early 1900's, several companies as well as numerous individuals have prospected and explored this area. Most of their efforts have been concentrated in north-central Cunningham Township where lead and zinc mineralization occurs in several bands of iron formation. However, there is no record of previous work on this grid.

The bulk of this grid lies within Cunningham Township which has recently been mapped by the Ontario Geological Survey (Siragusa, 1980). Greenlaw Township has been mapped by Donovan (1968) and Blamey Township is in an area mapped by Meen (1942). Most of the grid area is underlain by mafic

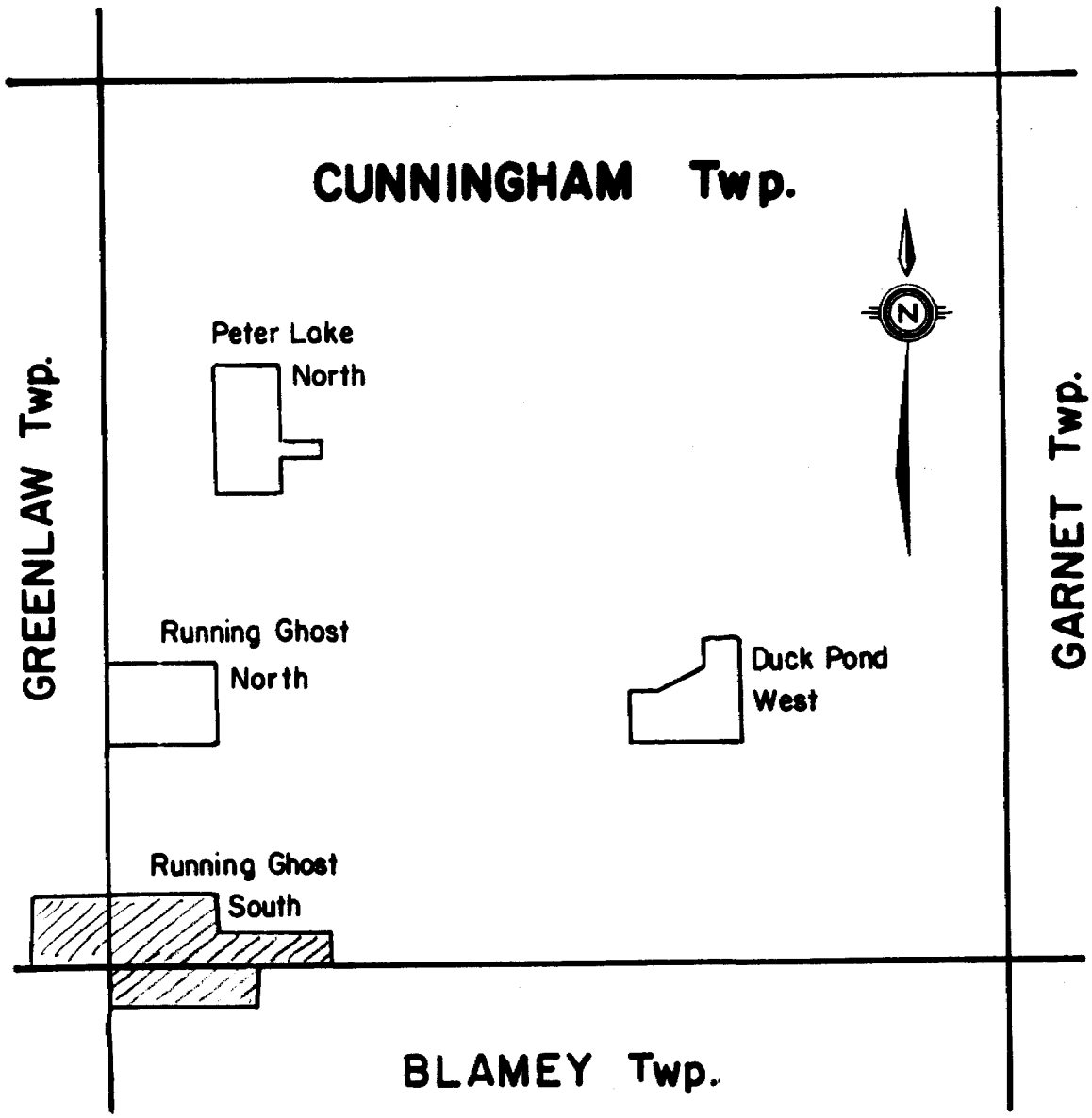

FIG. I LOCATION OF GRIDS

volcanics, mainly andesite, which have been intruded by gabbro and diorite, particularly in the southwestern part and around Running Ghost Lake. There are several NNW trending diabase dikes. The northeastern part of the grid is underlain by a granite intrusive.

Since Kidd Creek acquired this property, the grid area has been mapped in detail by company geologists. Their results are generally similar to those shown on the government maps except that within the intermediate to mafic volcanics there is a thick unit of well-laminated mafic tuffs which crosses the central part of the grid. Nearly all the conductors detected by the present survey are situated within these tuffs.

This grid lies within the area covered by an OGS-sponsored airborne INPUT and magnetic survey (OGS, 1982; Map 83 546). Figure 2 shows the grid outline, superposed on the combined EM and total field map.

The airborne magnetic features can be explained as follows: the low, uniform magnetic field to the northeast of the grid corresponds to the granitic intrusive; the belt of intense highs, which comes from the north and sweeps across the grid in a southeasterly direction, is produced by gabbroic intrusives; the very strong, linear trend which enters the grid from the south reflects a large diabase dike which apparently terminates near the northern edge of the grid; the high magnetic field strengths southwest of the grid are caused by gabbro; the andesite does not appear to have a

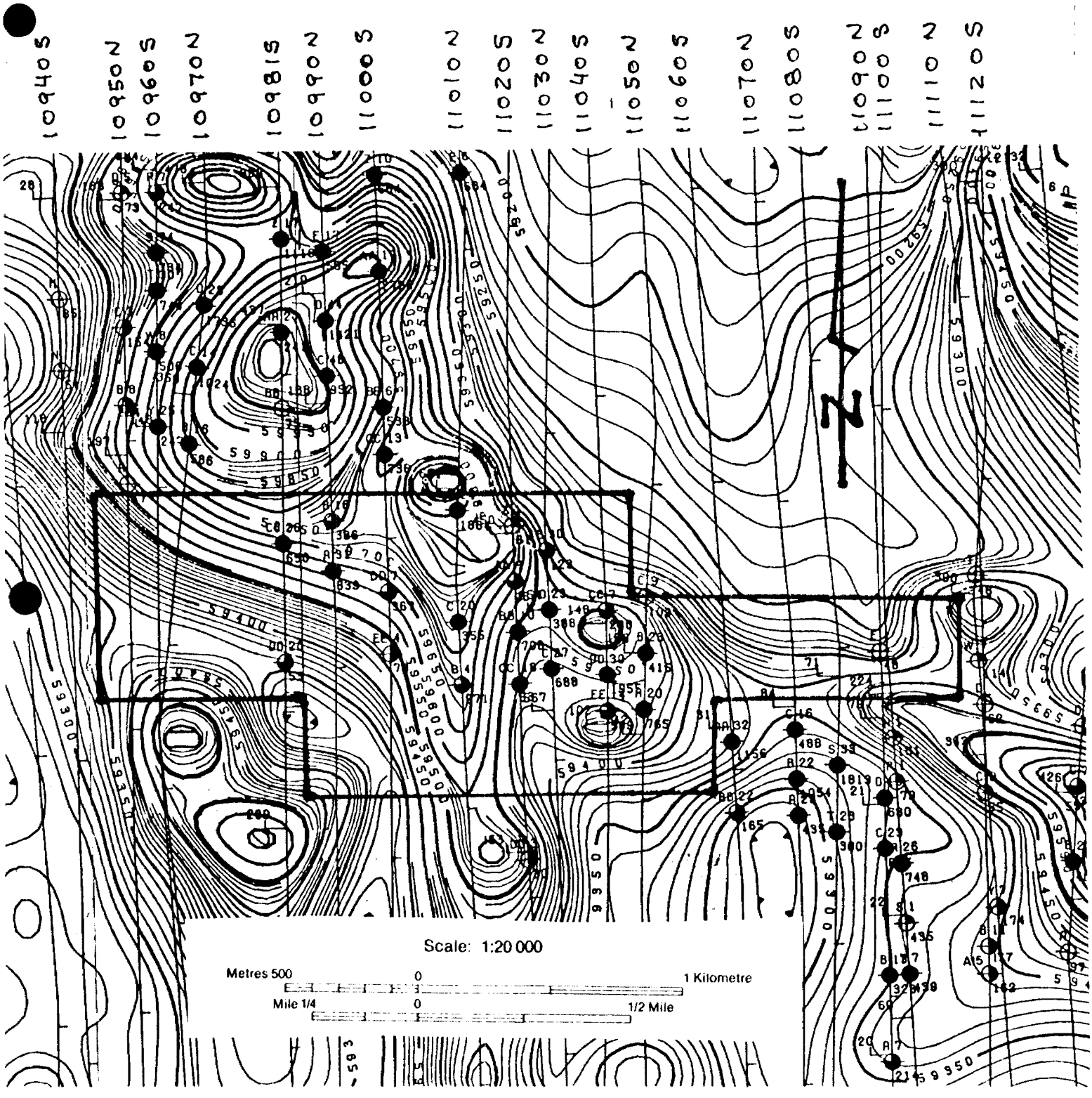

FIG. 2 RUNNING GHOST SOUTH GRID

distinctive signature but underlies the areas of relatively flat magnetics.

Most of the INPUT anomalies are strong six-channel responses with conductances in the range of 15 to 30 siemens and, on the basis of medium to large second channel amplitudes, a shallow depth of burial.

2. SURVEY RESULTS

2.1 Magnetics (EDA PPM-350, proton precession magnetometer)

The only continuous magnetic trends within this grid are the highs produced by diabase dikes and oxide facies iron formation, respectively labelled "DD" and "IF" on the map. The two diabase dikes which strike at approximately 0° are typical of this area. The third, which strikes at 100°, is atypical but its existence is confirmed by several outcrops. It should be noted that several other north-south striking diabase dikes were located by the detailed mapping, but none has any magnetic signature. The iron formation outcrops only at its northern end on Lines 10700E and 10800E, and the extension across Running Ghost Lake is based strictly on interpretation.

Excepting the above features, the magnetic data contain only a limited amount of information that can be used to extend geological units away from the few scattered outcrops. Most of this stems from the fact that the two predominant rock types, gabbro and intermediate to mafic volcanics, do

not have significantly different magnetic susceptibilities. For example, west of Line 9600E the bedrock is gabbro while to the east it is andesite; however, there is no evidence of this in the magnetic field strengths. Similarly, an extensive area of gabbro just south of Running Ghost Lake on Lines 10500E to 10900E is not defined by the magnetics.

The magnetic features within the intermediate to mafic volcanics which underlie most of the grid are mainly isolated highs and lows which show little continuity from line to line. There is no apparent difference in the magnetic signatures of the mafic tuffs and the massive mafic flows.

2.2 VLF (Crone Geophysics RADEM, VLF Transmitter NAA, Cutler, Maine, 17.8 kHz)

In the southern part of the grid there are numerous anomalies (labelled "S" on the map) which arise from surficial sources such as the extensive swamps and bogs in this area as well as transitions from overburden cover to outcrop. Of the anomalies from bedrock sources, B, G and H are spatially associated with an iron formation and A, C, D, E, F, J, K and M lie within the mafic tuff unit. There are also a few instances where on two adjacent lines there are responses which can be lined up to approximately parallel the geological strike and thus may define a short bedrock conductor. None of these have been labelled with a letter because they could equally well be of surficial origin.

The conductors which lie in the mafic tuffs all appear to be formational features, possibly pyritic horizons, and none is consistently magnetic along strike. Conductors A, C, D and J are completely non-magnetic; conductor E has a coincident magnetic high on a few lines, suggesting that pyrrhotite may be present locally; and conductor M has a flanking high on one line but nothing on the next. Conductor K has a coincident magnetic high on the single line where it was detected.

Conductors B, G and H appear to flank an iron formation, but none of them is magnetic except on Line 11200E where H appears to cut across a magnetic high. It may be that anomaly H reflects a fault or shear rather than a stratigraphic feature. If the interpretation is correct, conductors B and G may join up; furthermore, these conductors appear to lie at the contact between granite to the north and iron formation to the south.

2.3 Horizontal Loop (Apex Parametrics Max Min II, Tx - Rx = 80 m, 444 Hz and 1777 Hz)

These results are quite similar to the VLF data except that conductor E consists of several conductive segments separated by sections of low conductivity. There are a number of anomalous in-phase responses which appear to have resulted from either coil misalignment or short cable (there are no quadrature anomalies, and high and low frequency in-phase responses are almost identical) and are marked "SC"

on the maps. Also, the horizontal loop response detected at 10160N/Line 10000E may be spurious because of its unusual shape and the lack of any VLF corroboration. If it is genuine, its source must be small and must have a short strike length in order to account for the shape of the anomaly.

Conductor A is present on only two lines, although there are some uninterpretable anomalous indications on a third line, 10200E. It has a width of 5 to 10 metres, a steep south dip, a depth of burial of approximately 10 metres, and a conductance of 50 siemens on Line 10100E where it has the strongest anomaly.

Conductors B, F and G have poorly or incompletely defined anomalies, and only limited quantitative interpretation is possible. Conductor B has very high conductance on Line 10700E but its conductance decreases greatly on the next line to the east. Conductors F and G, which have approximately equal in-phase and quadrature responses, have conductances of 5 siemens. All three conductors are at a depth of less than 10 metres. Dips are indeterminate.

Conductor C displays remarkably uniform width, in-phase to quadrature ratios and anomaly amplitudes along strike. This zone is 8 to 15 metres wide; steeply dipping, probably to the south; buried at a depth of less than 10 metres; and has a relatively constant conductance of 20 to 30 siemens.

The high conductance values suggest that this may be a graphitic horizon.

Conductor E has two sections with significant conductivity and width, located between Lines 10500E and 10700E and between Lines 11200E and 11500E. In the western section there is minimal conductivity on two lines, but on Line 10700E the conductance is in the range of 15 to 20 siemens. This section of the zone has an indicated width of nearly 20 metres, a minimal depth of burial (probably less than 15 metres on all three lines; the weak anomalies on Lines 10500E and 10600E are due to low conductivity rather than large depth of burial) and a near-vertical dip. The eastern segment is generally narrower, typically less than 10 metres wide, and has conductances in the 10 to 20 siemen range, an indicated depth of burial of 15 to 25 metres, and a steep dip, probably to the south.

Conductor J is a 5 to 10 metres wide zone of low to moderate conductivity (conductance of 10 to 15 siemens), indeterminate dip, and has a depth of burial of 15 to 20 metres.

Conductor K has a 30 siemen conductance, 10 metre width, near-vertical dip and must lie under less than 10 metres of overburden.

Conductor L is only 2 or 3 metres wide and has a conductance of 4 siemens. Both its depth of burial and dip are indeterminate.

Anomaly M is not completely defined so that the only fact that can be deduced is that its source has low to medium conductivity.

Overall, on the basis of the interpreted depths of burial of the various conductors, it is probable that the overburden thickness increases gradually from less than 10 metres around conductor C to nearly 20 metres around conductors E, F and J.

REFERENCES

Siragusa, G. M., 1980: Cunningham Township Area, District of Sudbury; Ontario Geological Survey Prelim. Map P.2339 Geological Ser., Scale 1:15840 or 1 inch to ¼ mile. Geology 1978.

OGS, 1982: Airborne Electromagnetic and Total Intensity Magnetic Survey, Swayze Area, Isaiah Lake Sheet, District of Sudbury; by Questor Surveys Limited for the Ontario Geological Survey, Map 80 546 Geophysical/Geochemical Series, Scale 1:20,000. Survey and Compilation December, 1980, to February, 1981.

Meen, V. B., 1942: Geology of the Cunningham-Garnet Area, Ontario Department of Mines, Vol. 51, Part 7, 1942. Accompanied by Map No. 51f, scale 1 inch to 1 mile.

Donovan, J. F., 1968: Geology of Halcrow-Ridout Lakes Area, Ontario Department of Mines, Geological Report 63. Accompanied by Map 2121 - Tooms and Greenlaw Townships, District of Sudbury, scale 1 inch to ½ mile.

900

Mining Lands Section

File No 2.6628

Control Sheet

TYPE OF SURVEY

/ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

LD

Signature of Assessor

3/02/84

Date

1984 08 14

Your File: 92-84
Our File: 2.6628

Mr. Bruce Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Notice of Intent dated July 24, 1984.
Geophysical (Electromagnetic, Magnetometer and VLF) Survey on Mining Claims P 641155 et al in the Townships of Cunningham, Blamey & Greenlaw.

The assessment work credits as listed with the above mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-6918

D. Isherwood:sc

cc: Kidd Creek Mines Limited
357 Bay Street
Suite 300
Toronto, Ontario
M5H 2T7

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Resident Geologist
Timmins, ontario

Ministry of Natural Resources
Ontario

Technical Assessment Work Credits

File 2.6628

Date 1984 07 24

Mining Recorder's Report of Work No. 92-84

Recorded Holder: KIDD CREEK MINES LTD

Township or Area: CUNNINGHAM, GREENLAW AND BLAMEY TOWNSHIPS

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 641155 to 168 inclusive 641171 to 175 inclusive
Electromagnetic _____ days	
Magnetometer 20 days	
Radiometric _____ days	
Induced polarization _____ days	
Other VLF 20 days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

10 DAYS CREDIT VLF, MAGNETOMETER

P 641169

5 DAYS CREDIT VLF, MAGNETOMETER

P 641170

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77(19)—60.

828 (83/6)

Ministry of Natural Resources
Ontario

Technical Assessment Work Credits

File 2.6628

Date 1984 07 24

Mining Recorder's Report of Work No. 92-84

Recorded Holder: KIDD CREEK MINES LTD

Township or Area: CUNNINGHAM, GREENLAW, BLAMEY TOWNSHIPS

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 641155 to 158 inclusive 641161 to 168 inclusive 641171 to 175 inclusive
Electromagnetic 40 days	
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	
Geochemical ____ days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

20 DAYS CREDIT ELECTROMAGNETIC

P 641159-160
641169

10 DAYS CREDIT ELECTROMAGNETIC

P 641170

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77(19)—60:

828 (83/6)

Ministry of
Natural
Resources

Ontario

aug 8/84

1984 07 24

Your File: 92-84
Our File: 2.6628

Mr. Bruce W. Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

RD D. Isherwood:mc

Encls.

cc: Kidd Creek Mines Ltd
357 Bay Street
Suite 300
Toronto, Ontario
M5H 2T7

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

845

Ministry of Natural Resources

Ontario

Notice of Intent

for Technical Reports

1984 07 24

2.6628/92-84

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Apr 30/84

Ministry of Natural Resources
Ontario

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

#92/84
2.8628

The Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): GEOPHYSICAL	Township or Area: CUNNINGHAM, BLAMEY & GREENLAW TWPS.
Claim Holder(s): KIDD CREEK MINES LTD.	Prospector's Licence No.: T-1
Address: 357 BAY ST., STE. 300, TORONTO, ONTARIO M5H 2T7	
Survey Company: KIDD CREEK MINES LTD.	Date of Survey (from & to): 1 5 83 (Day / Mo. / Yr.) to 1 3 84 (Day / Mo. / Yr.)
Name and Address of Author (of Geo-Technical report): J. A. SLANKIS	Total Miles of line Cut: 29.0 km

Credits Requested per Each Claim in Columns at right

		Days per Claim
Special Provisions For first survey: Enter 40 days. (This includes line cutting) For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Electromagnetic	40
	Geophysical - Magnetometer	20
	Geophysical - Radiometric	
	Geophysical - Other V1f	20
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.		Days per Claim
	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed	
Performed on Claim(s)	
Calculation of Expenditure Days Credits: Total Expenditures $ + 15 = Total Days Credits	

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	641155				
	641156				
	641157				
	641158				
	641159				
	641160				
	641161				
	641162				
	641163				
	641164				
	641165				
	641166				
	641167				
	641168				
	641169				
	641170				
	641171				
	641172				
	641173				
	641174				
	641175				

RECEIVED
APR 11 1984
MINING LANDS SECTION

SUDBURY MINING DIVISION
RECEIVED
MAR 1 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

RECORDED
MAR 1 198[illegible]
Receipt No. [illegible]

see revised statement

Total number of mining claims covered by this report of work: 21

For Office Use Only		
Total Days Cr. Recorded: 1680	Date Recorded: Mar 1/84	Mining Recorder: [signature]
	Date Approved as Recorded	Branch Director

Date	Recorded Holder or Agent (Signature)
FEB 24, 1984	[signature]

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying: J. A. SLANKIS - 357 BAY ST., STE. 300, TORONTO, ONTARIO M5H 2T7

Date Certified	Certified by (Signature)
FEB 24, 1984	[signature]

Ministry of Natural Resources
Ontario

Geotechnical Report Approval

File 2.6628

Mining Lands Comments

☐ To: Geophysics

Comments

☐ Approved ☐ Wish to see again with corrections	Date	Signature

☐ To: Geology - Expenditures

Comments

☐ Approved ☐ Wish to see again with corrections	Date	Signature

☐ To: Geochemistry

Comments

L. D.

☐ Approved ☐ Wish to see again with corrections	Date	Signature

☐ To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

Approved Reports of Work sent out _____

Notice of Intent filed _____

Approval after Notice of Intent sent out _____

Duplicate sent to Resident Geologist _____

Duplicate sent to A.F.R.D. _____

April 27, 1984

Our File: 92
Our File: 2.6628

Mr. Bruce W. Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic, Magnetometer, and VLF) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 641155 et al in the Townships of Cunningham, Blamey and Greenlaw.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W8
Phone:(416)965-6918

A. Barr:mc

cc: Kidd Creek Mines Ltd
357 Bay Street
Suite 300
Toronto, Ontario
M5H 2T7

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geophysical

Township or Area Cunningham Township

Claim Holder(s) Kidd Creek Mines Ltd.
357 Bay St., Suite 300, Toronto M5H 2T7

Survey Company Kidd Creek Mines Ltd.

Author of Report J. A. Slankis

Address of Author As above

Covering Dates of Survey June, 1983 - March, 1984 (linecutting to office)

Total ~~Miles~~ km of Line Cut 29.0

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	20
–Radiometric	
–Other (VLF)	20
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: March 30, 1984 SIGNATURE: J. A. Slankis
Author of Report or Agent

Res. Geol. _____ Qualifications 2.6866

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	641155
P	641156
P	641157
P	641158
P	641159
P	641160
P	641161
P	641162
P	641163
P	641164
P	641165
P	641166
P	641167
P	641168
P	641169
P	641170
P	641171
P	641172
P	641173
P	641174
P	641175

TOTAL CLAIMS 21

If space insufficient, attach list

OFFICE USE ONLY

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations: Mag. - 1450, VLF - 1286, Horizontal Loop - 788 | Number of Readings: Mag. - 1450, VLF - 1286, Horizontal Loop - 1576

Station interval: Mag. & VLF: 20 m, HL: 40 & 20 m | Line spacing: 100 metres

Profile scale: VLF: 1 cm = 10°, HL: 1 cm = 10%

Contour interval: 200 nanoteslas

MAGNETIC

Instrument: EDA Instruments Inc., PPM-350, proton precession, total field

Accuracy – Scale constant: ±1 nanotesla

Diurnal correction method: EDA PPM-400, base station memory magnetometer

Base Station check-in interval (hours):

Base Station location and value: At north end of Punning Ghost Lake, 0.5 km north of grid.

ELECTROMAGNETIC

Instrument: Apex Parametrics, Max Min II

Coil configuration: Horizontal Loop

Coil separation: 80 metres

Accuracy: ±1%

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency: 444 Hz and 1777 Hz (specify V.L.F. station)

Parameters measured: In-phase and quadrature components of secondary field as percent of transmitted field.

GRAVITY

Instrument:

Scale constant:

Corrections made:

Base station value and location:

Elevation accuracy:

INDUCED POLARIZATION RESISTIVITY

Instrument:

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time: Frequency:

– Off time: Range:

– Delay time:

– Integration time:

Power:

Electrode array:

Electrode spacing:

Type of electrode:

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey VLF

Instrument Crone Geophysics Ltd., RADEM

Accuracy ±1%

Parameters measured Dip angle of total field

_____

Additional information (for understanding results) The signal from the VLF transmitter at Cutler, Maine (NAA, 17.8 kHz) was used.

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

_____

_____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

_____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

_____

Drainage Development _____

Estimated Range of Overburden Thickness _____

_____

_____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

_____

_____

_____

General _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

_____

_____

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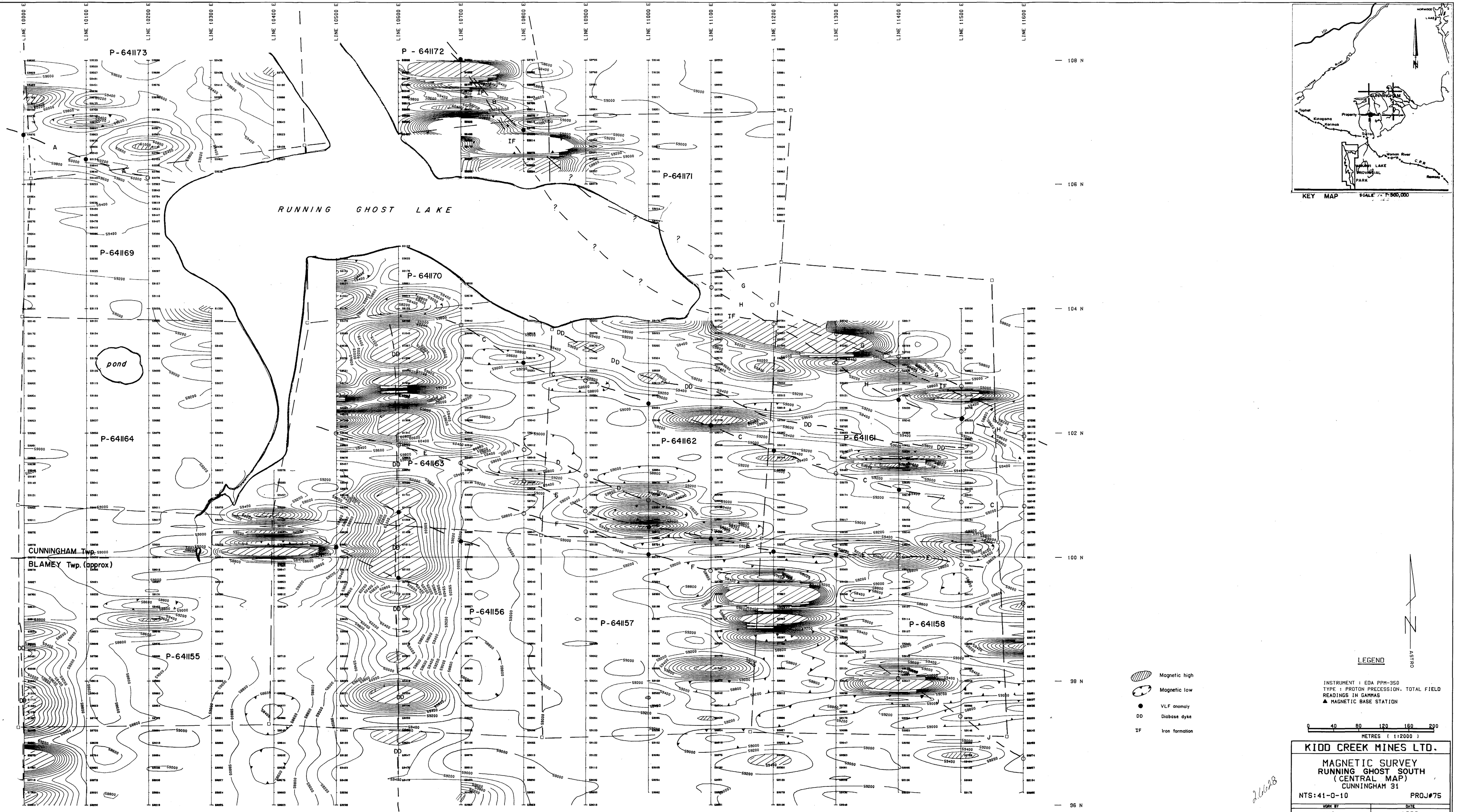
_____



LEGEND

Magnetic high

Magnetic low

VLF anomaly

DD Diabase dyke

IF Iron formation

INSTRUMENT : EDA PPM-350
TYPE : PROTON PRECESSION. TOTAL FIELD READINGS IN GAMMAS
▲ MAGNETIC BASE STATION

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

MAGNETIC SURVEY
RUNNING GHOST SOUTH
(CENTRAL MAP)
CUNNINGHAM 31

NTS: 41-O-10 PROJ#75

WORK BY	DATE
2379 B	1983

200

LINE 9200 E
LINE 9300 E
LINE 9400 E
LINE 9500 E
LINE 9600 E
LINE 9700 E
LINE 9800 E
LINE 9900 E
LINE 10000 E

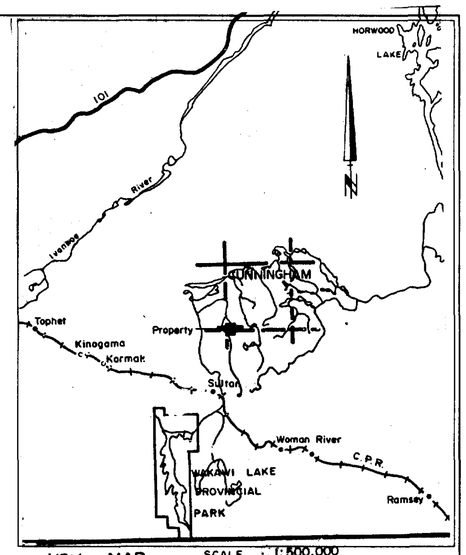
108 N
106 N
104 N
102 N
100 N

P-641175
P-641174
P-641167
P-641168
P-641166
P-641165

CUNNINGHAM Twp.
GREENLAW Twp.

A
A

59200
59400
59600
59800
60000
59000
58800
58600



KEY MAP SCALE 1:500,000

N
ASTRO

LEGEND

INSTRUMENT : EDA PPM-350
TYPE : PROTON PRECESSION, TOTAL FIELD
READINGS IN GAMMAS
▲ MAGNETIC BASE STATION

VLF anomaly
Magnetic high
Magnetic low

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

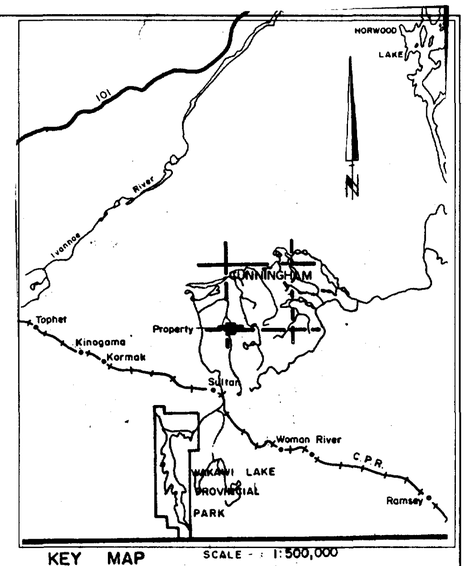
MAGNETIC SURVEY
RUNNING GHOST SOUTH (WEST MAP)
CUNNINGHAM 31

NTS:41-O-10 PROJ#75

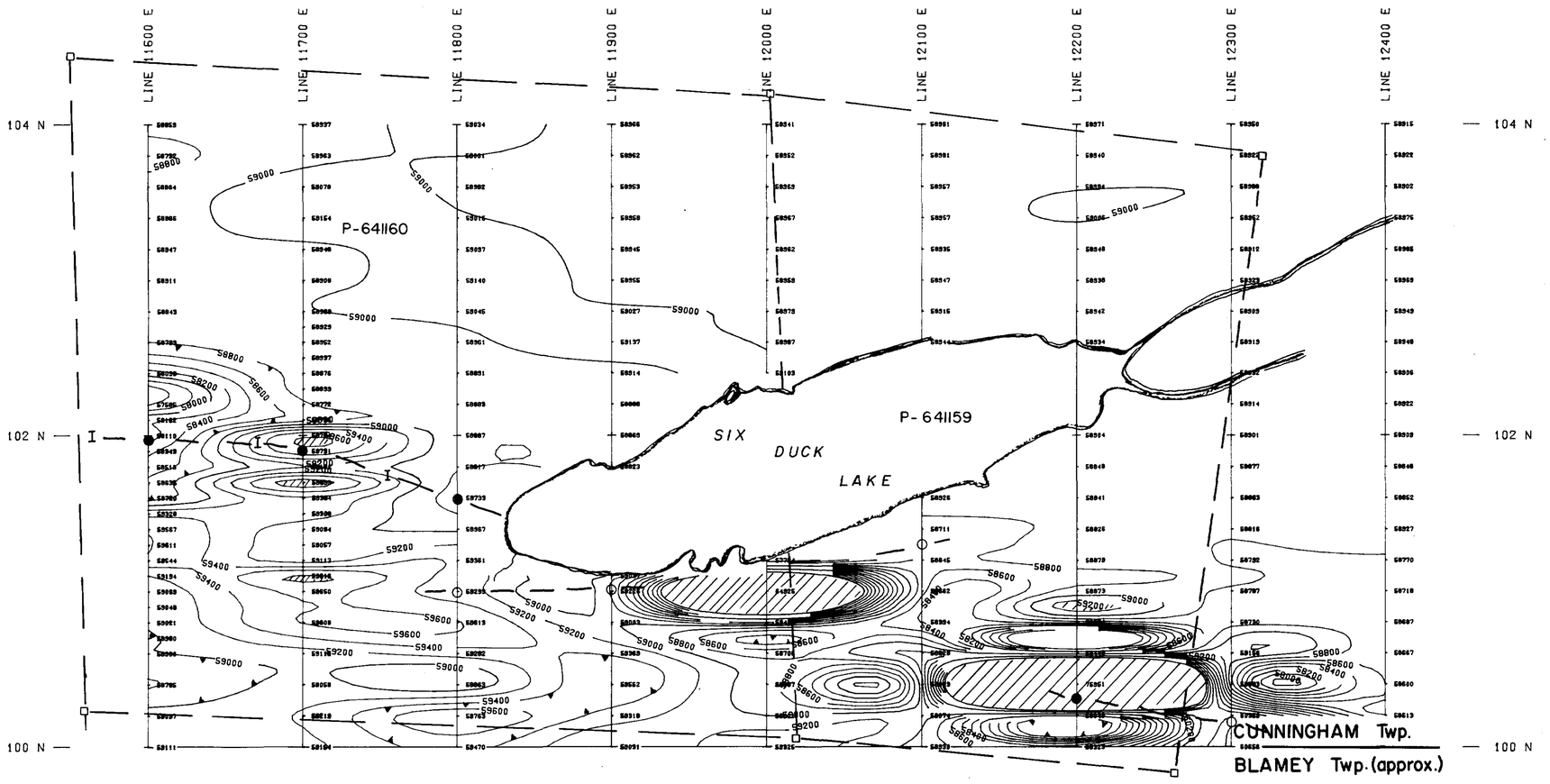
WORK BY	DATE
2378C	1983

2.6628

J.A. Blaney



KEY MAP SCALE - : 1:500,000



LEGEND

Magnetic high

Magnetic low

VLF anomaly

INSTRUMENT : EDA PPM-350
TYPE : PROTON PRECESSION, TOTAL FIELD
READINGS IN GAMMAS
▲ MAGNETIC BASE STATION

ASTRO

0 40 80 120 160 200
METRES (1:2000)

26628

KIDD CREEK MINES LTD.

MAGNETIC SURVEY
RUNNING GHOST SOUTH (EAST MAP)
CUNNINGHAM 31

NTS:41-O-10 PROJ#75

WORK BY	DATE
2377 B	1983

41O10NE0030 2.6628 BLAMEY

LINE 10000 E | LINE 10100 E | LINE 10200 E | LINE 10300 E | LINE 10400 E | LINE 10500 E | LINE 10600 E | LINE 10700 E | LINE 10800 E | LINE 10900 E | LINE 11000 E | LINE 11100 E | LINE 11200 E | LINE 11300 E | LINE 11400 E | LINE 11500 E | LINE 11600 E

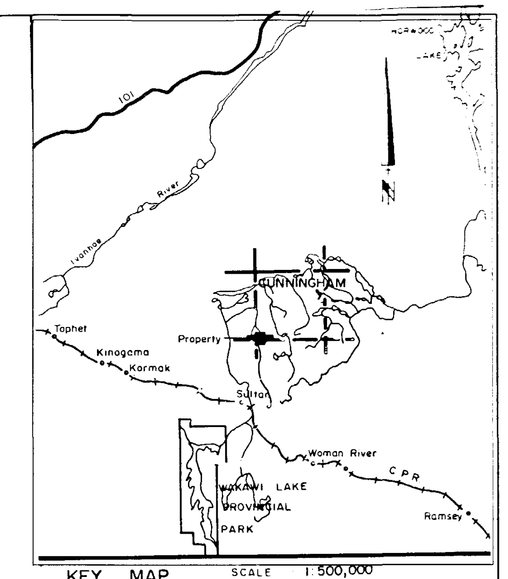
108 N — 106 N — 104 N — 102 N — 100 N — 98 N — 96 N

P-641173
P-641172
P-641171
P-641169
P-641170
P-641164
P-641163
P-641162
P-641161
P-641156
P-641157
P-641155
P-641158

RUNNING GHOST LAKE

pond

CUNNINGHAM TWP.
BLAMEY Twp. (approx.)



KEY MAP scale 1:500,000

● Strong VLF Anomaly
○ Weak VLF Anomaly
? Possible VLF Anomaly
SO Surficial anomaly source

LEGEND

DIP ANGLE (DEGREES)

INSTRUMENT : CRONE RADEM
STATION : CUTLER. 17.8 KHz
PROFILE SCALE : DIP ANGLE 1 CM= 10°

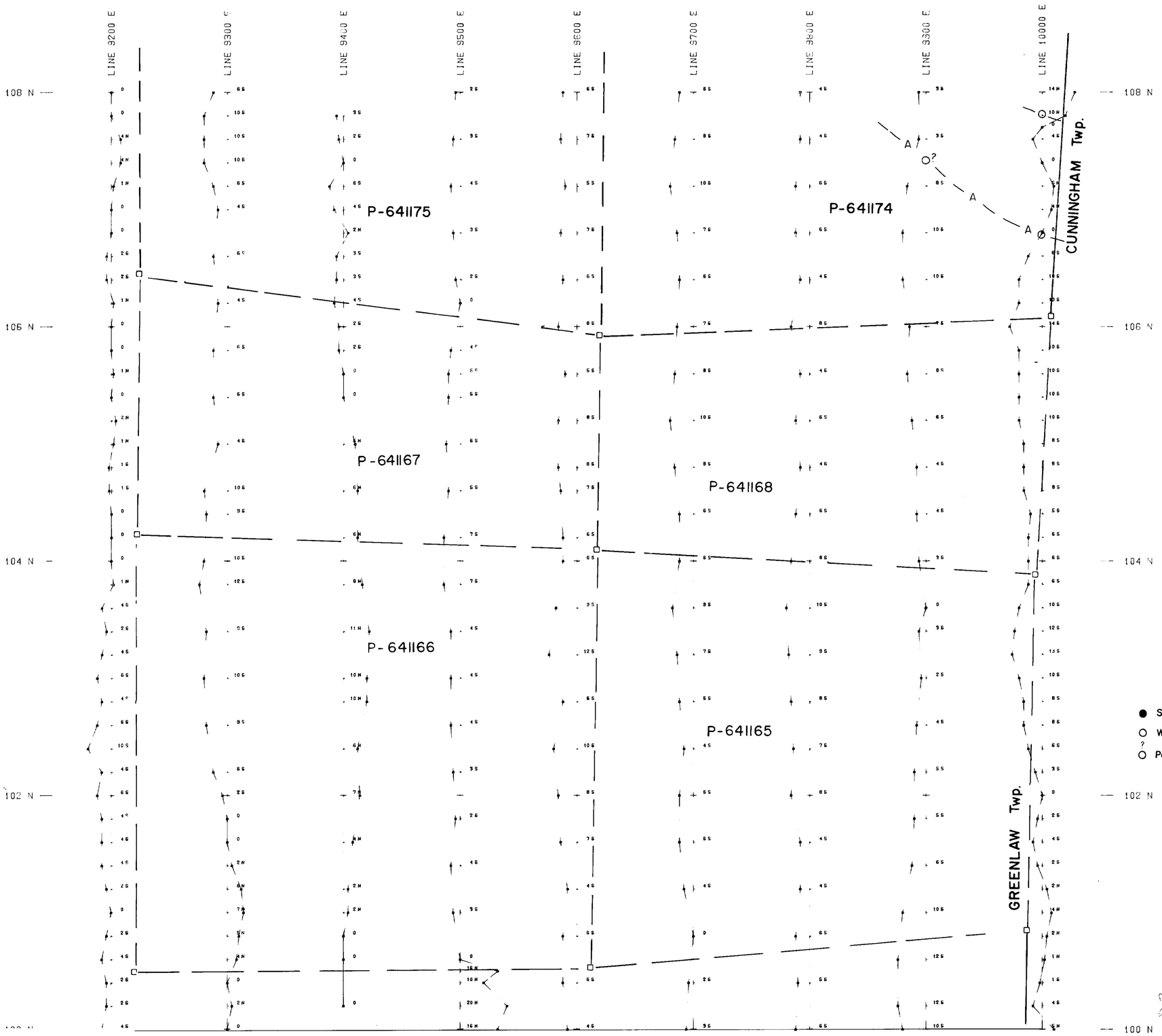
← S DIPS N DIPS →

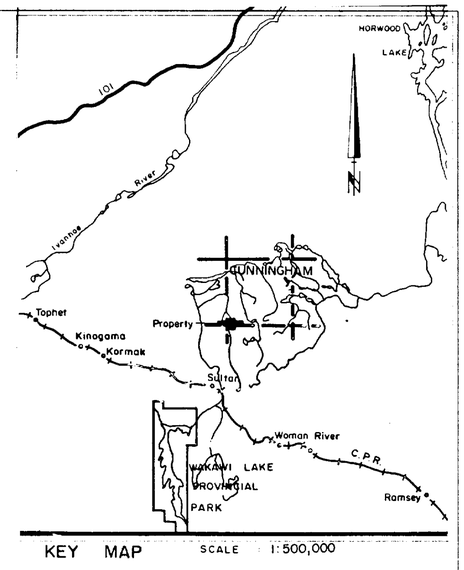
0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

V L F SURVEY
RUNNING GHOST SOUTH
CUNNINGHAM 31
NTS:41-O-10 CENTRAL MAP PROJ.#75

WORK BY	DATE
2383	1983





N — ASTRO

LEGEND

- Srong VLF Anomaly
- Weak VLF Anomaly
- ? Possible VLF Anomaly

DIP ANGLE (DECREES)

12 N
8

INSTRUMENT : CRONE RADEM
STATION : CUTLER, 17.8 KHz
PROFILE SCALE : DIP ANGLE 1 CM= 10°

← — S DIPS N DIPS — →

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

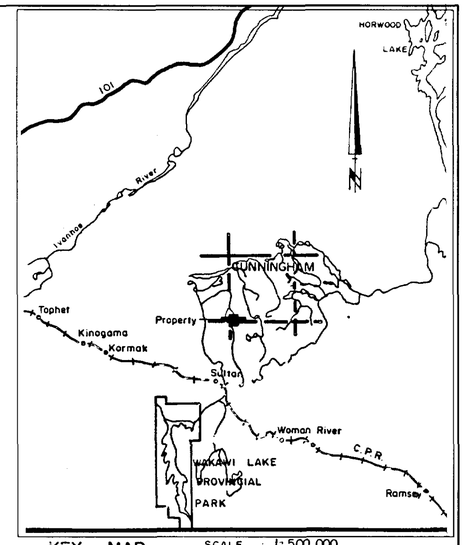
V L F SURVEY
RUNNING GHOST SOUTH
(WEST MAP)
CUNNINGHAM 31

NTS:41-0-10 PROJ.#75

WORK BY	DATE
2378 B	1983

J. A. Sleeman

2.6628



KEY MAP SCALE : 1:500,000

LINE 11600 E
LINE 11700 E
LINE 11800 E
LINE 11900 E
LINE 12000 E
LINE 12100 E
LINE 12200 E
LINE 12300 E
LINE 12400 E

104 N

102 N

100 N

H

M

P-641160

P-641159

SIX DUCK LAKE

CUNNINGHAM Twp.

BLAMEY Twp.(approx.)

N

ASTRO

LEGEND

DIP ANGLE (DEGREES)

12 N
0

INSTRUMENT : CRONE RADEM
STATION : CUTLER, 17.8 KHz
PROFILE SCALE : DIP ANGLE 1 CM= 10°

← S DIPS N DIPS →

0 40 80 120 160 200
METRES (1:2000)

- ● Srong VLF Anomaly
- ○ Weak VLF Anomaly
- ? ○ Possible VLF Anomaly
- S Surficial anomaly source

26628

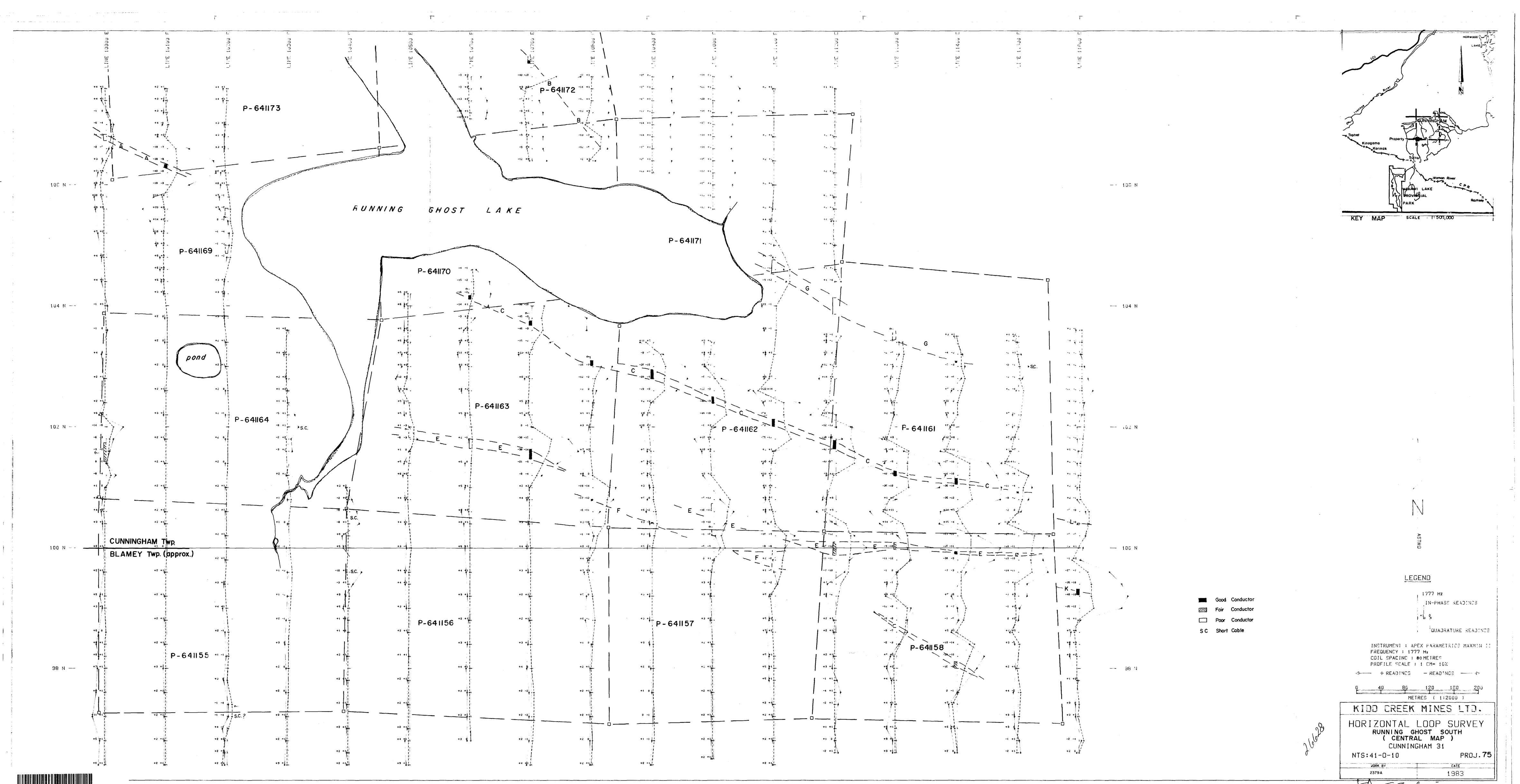
KIDD CREEK MINES LTD.

V L F SURVEY
RUNNING GHOST SOUTH
CUNNINGHAM 31

NTS:41-0-10 **EAST MAP** PROJ.#75

WORK BY	DATE
2383A	1983

41010NE0030 2.6628 BLAMEY



N

ASTRO

LEGEND

1777 Hz
IN-PHASE READINGS
QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 1777 Hz
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%

+ READINGS — READINGS

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

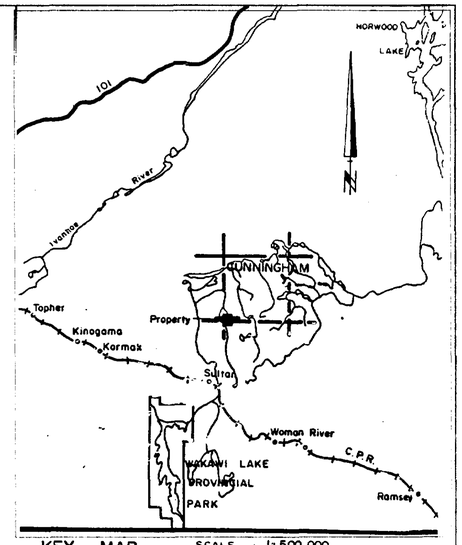
HORIZONTAL LOOP SURVEY

RUNNING GHOST SOUTH
(CENTRAL MAP)
CUNNINGHAM 31

NTS:41-0-10 PROJ. 75

JOB #	DATE
2379A	1983

260



KEY MAP SCALE 1:500,000

P-641175

P-641174

P-641167

P-641168

P-641166

P-641165

GREENLAW Twp.

CUNNINGHAM Twp.

LINE 9200 E

LINE 9400 E

LINE 9600 E

LINE 9800 E

LINE 10000 E

104 N

102 N

100 N

ASTRO

LEGEND

Good Conductor

Fair Conductor

Poor Conductor

SC Short Cable

1777 Hz

IN-PHASE READINGS

QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 1777 Hz
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%

— + READINGS — READINGS —

0 40 80 120 160 200

METRES (1:2000)

KIDD CREEK MINES LTD.

HORIZONTAL LOOP SURVEY

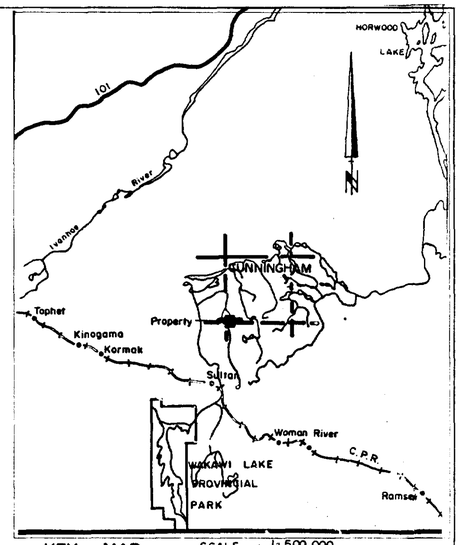
RUNNING GHOST SOUTH
(WEST MAP)
CUNNINGHAM 31

NTS:41-O-10 PROJ.#75

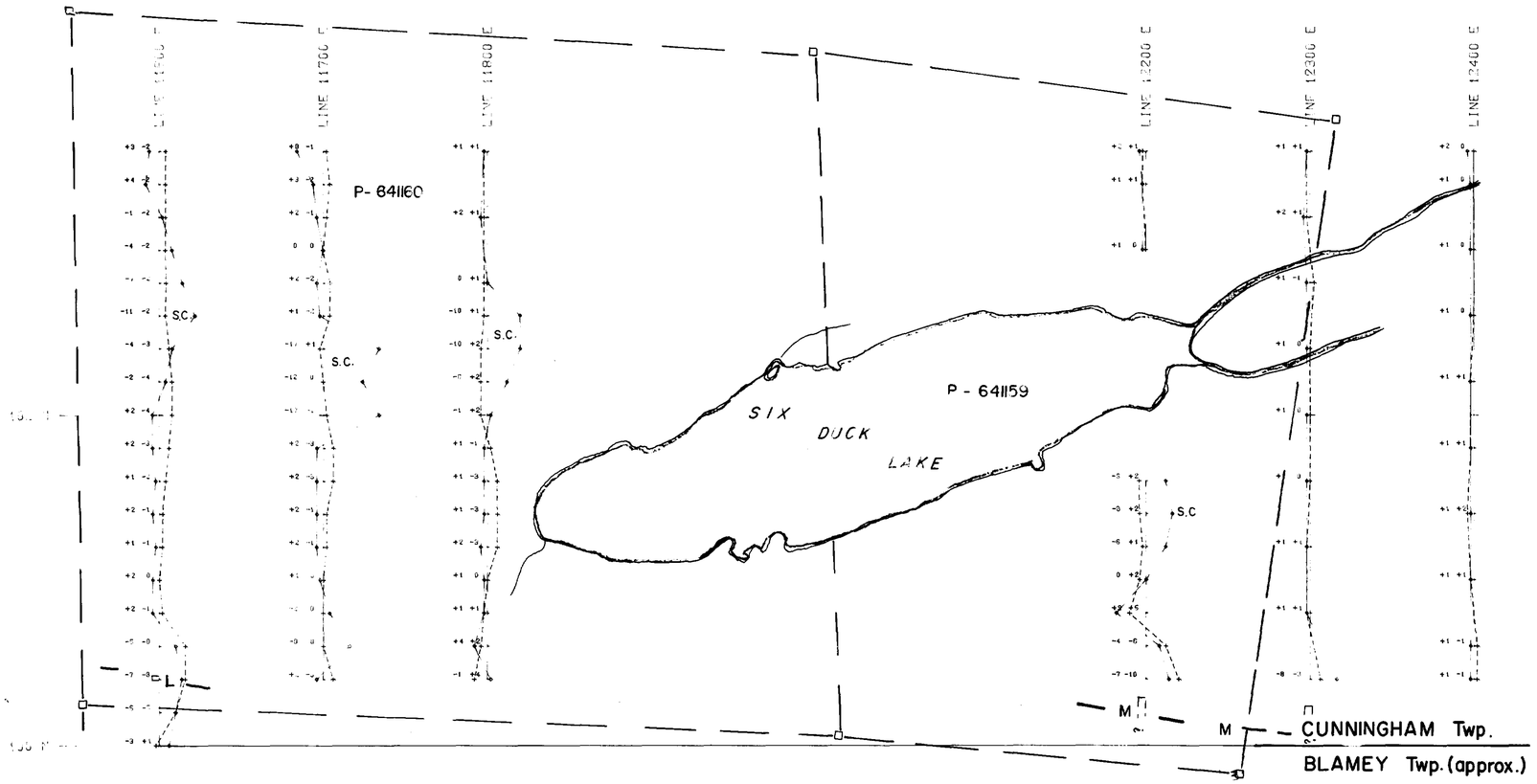
WORK BY	DATE
2378A	1983

2.6628

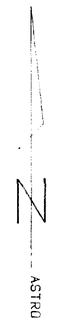
F. A. Scott



KEY MAP SCALE 1:500,000



Good Conductor
Fair Conductor
Poor Conductor
SC Short Cable



LEGEND

1777 Hz
IN-PHASE READINGS
QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 1777 Hz.
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%

+ READINGS — READINGS

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

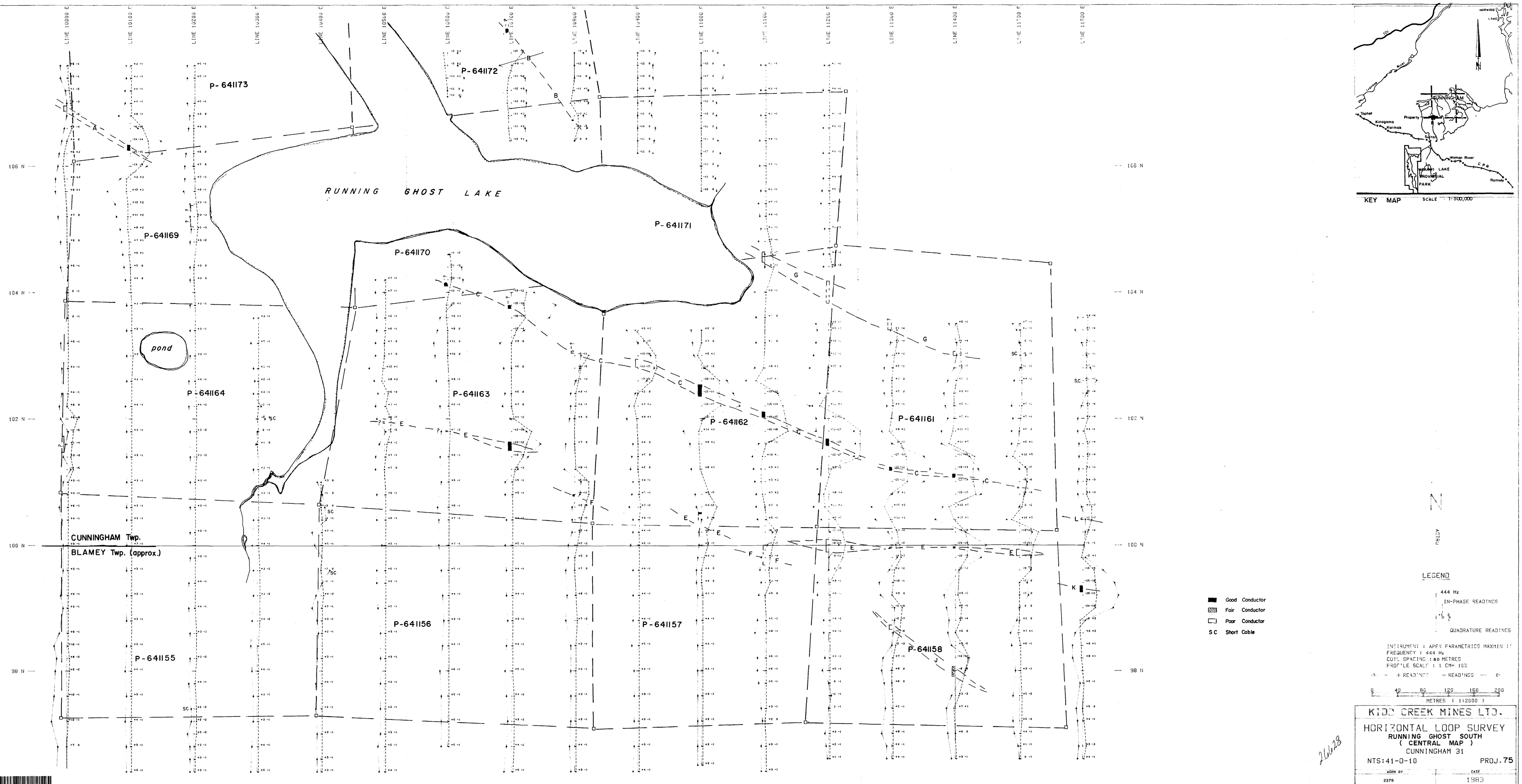
HORIZONTAL LOOP SURVEY
RUNNING GHOST SOUTH
(EAST MAP)
CUNNINGHAM 31

NTS:41-O-10 PROJ.#75

WORK BY	DATE
2377 A	1983

76628

J.A. Scott



KEY MAP SCALE 1:500,000

Good Conductor
Fair Conductor
Poor Conductor
SC Short Cable

LEGEND

444 Hz
IN-PHASE READINGS
QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 444 Hz
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%
+ READINGS — READINGS

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

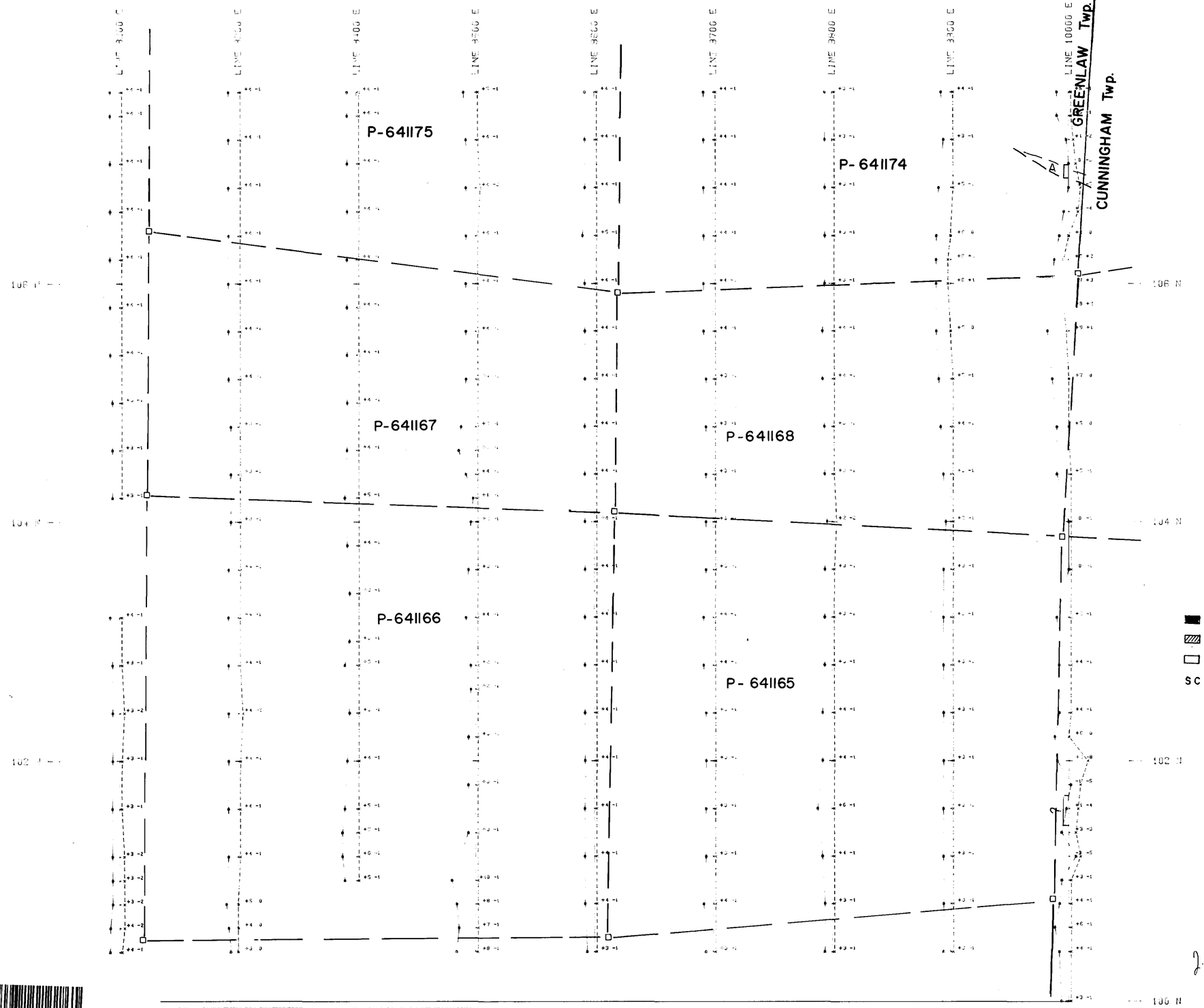
HORIZONTAL LOOP SURVEY
RUNNING GHOST SOUTH
(CENTRAL MAP)
CUNNINGHAM 31

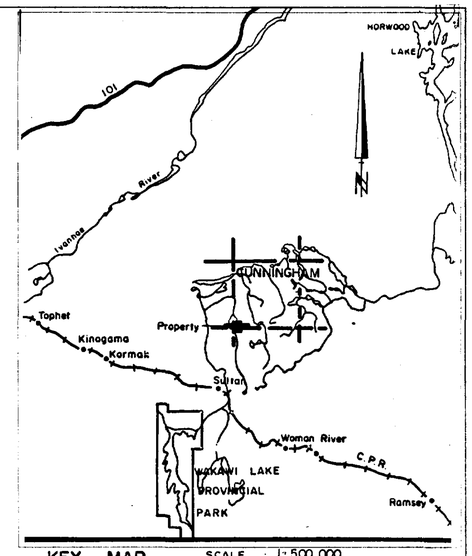
NTS: 41-O-10 PROJ. 75

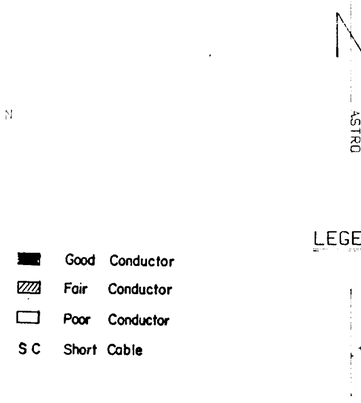
WORK BY	DATE
2379	1983

26W23

290







LEGEND

- Good Conductor
- Fair Conductor
- Poor Conductor
- S C Short Cable

444 Hz
IN-PHASE READINGS
QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 444 Hz
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%

+ READINGS — READINGS

0 40 80 120 160 200
METRES (1:2000)

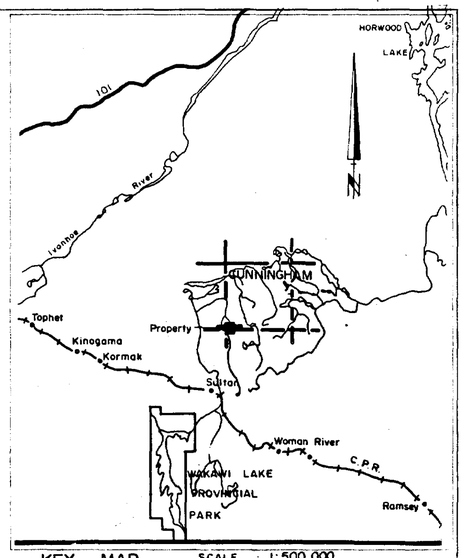
KIDD CREEK MINES LTD.

HORIZONTAL LOOP SURVEY
RUNNING GHOST SOUTH
(WEST MAP)
CUNNINGHAM 31

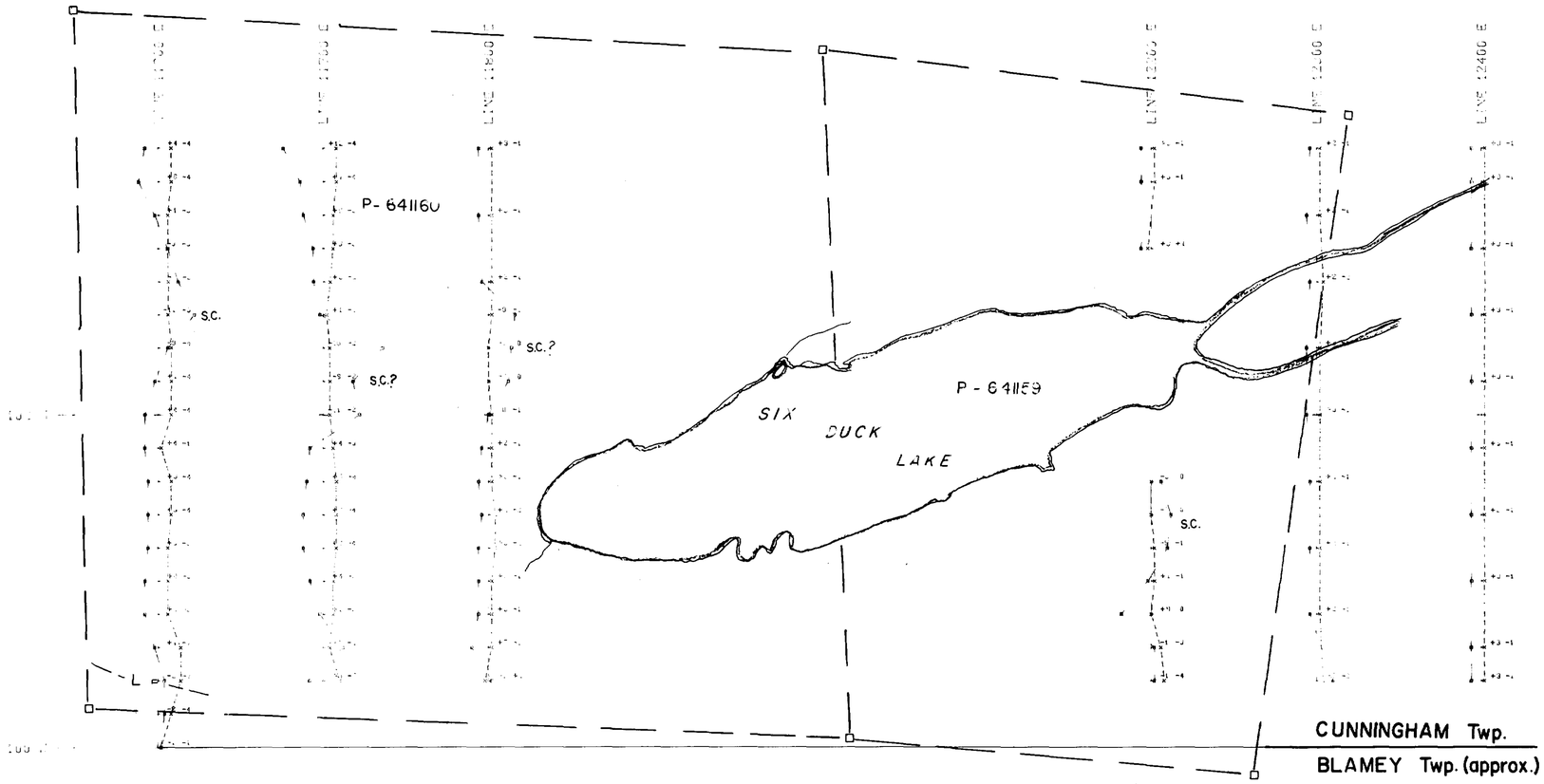
NTS:41-0-10 PROJ.#75

WORK BY	DATE
2378	1983

J.6.6.28



KEY MAP SCALE : 1:500,000



CUNNINGHAM Twp.

BLAMEY Twp. (approx.)

- Good Conductor
- Fair Conductor
- Poor Conductor
- S C Short Cable

LEGEND

444 Hz

IN-PHASE READINGS

QUADRATURE READINGS

INSTRUMENT : APEX PARAMETRICS MAXMIN II
FREQUENCY : 444 Hz
COIL SPACING : 80 METRES
PROFILE SCALE : 1 CM= 10%

\- - - + READINGS — READINGS - - - -

0 40 80 120 160 200
METRES (1:2000)

KIDD CREEK MINES LTD.

HORIZONTAL LOOP SURVEY

RUNNING GHOST SOUTH
(EAST MAP)
CUNNINGHAM 31

NTS:41-O-10 PROJ.#75

WORK BY	DATE
2377	1983

2.6628