



52F16NW8246 2.13669 PICKEREL

010

2.13669

Report on the Geophysical

Surveys carried out on Eight

Mining Claims held by

Nahanni Mines Limited

in Pickeral Township,

Ontario

by

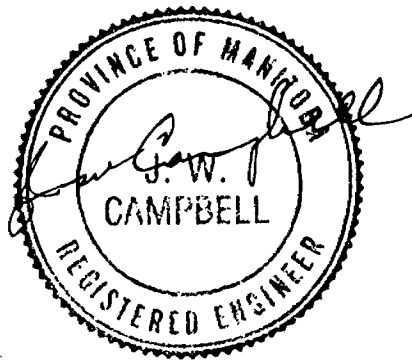
J. W. Campbell, P. Eng.

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NOV 09 1990

MINING LANDS SECTION

October 5, 1990





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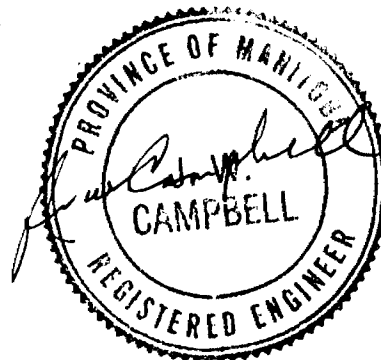
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3 Maps in Pocket:

Magnetometer survey

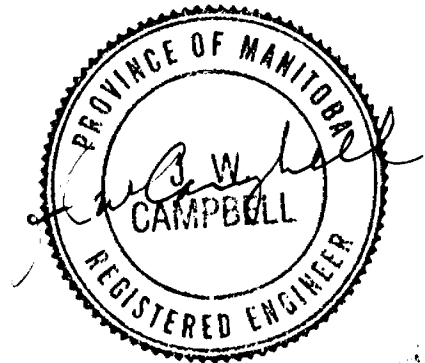
VLF Dip Angle Electromagnetometer Survey

VLF Contoured Frazer Filter Electromagnetometer Survey



SUMMARY

Nahanni Mines Limited owns an 8 claim property in Pickeral Township accessible by road 25 miles to south boundary from Sioux Lookout, Ontario. Line cutting and two geophysical surveys were carried out on this property during September 1990. A disrupted magnetometer anomaly trending south westerly through the central portion of the property is associated with gold. It is recommended in this report that further exploration for gold be carried out on the property.

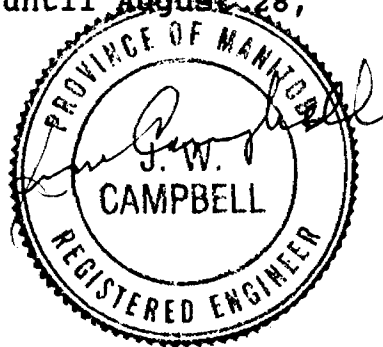


INTRODUCTION

At the request of James A. Harquail, President of Nahanni Mines Limited, line cutting, magnetometer and VLF electromagnetometer surveys were carried out over newly staked claims in the area north and north west of Miles Lake in Pickeral Township, Ontario. The author carried out this work from Sept. 29th to Oct. 14th, 1990 on this property. Geological mapping over some of the present property was provided by J. A. Harquail of Nahanni Mines Limited from internal files of the company. Assistance was provided by Lawrence Carpenter and John Carpenter of Sioux Lookout, Ontario.

PROPERTY, LOCATION AND ACCESS

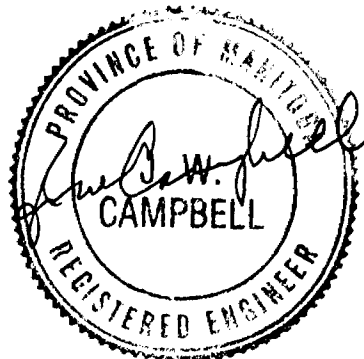
The property consists of 8 contiguous claims recorded August 28th, 1990 and registered on claim map G2079, Kabik Lake and Pickeral Township at the Mining Recording office in Sioux Lookout, Ontario. The claims are in good standing for 1 year from the recording date and with the present work described in this report should be in good standing until August 28,



1993. The claims are as follows: PA 1124642, PA 11246643, PA 1124868, PA 1124875, PA 1124876, PA 1124872, PA 1124873 and PA 1124874 located in lots 9 and 10, concession V, Pickeral Township, Ontario. The property's south boundary touches a gravel pit accessible by car approximately 1 mile from paved highway #72, 24 miles south west of Sioux Lookout, Ontario. The property totals approximately 320 acres.

LINE CUTTING

Line cutting was carried out on the claims between August 29th, 1990 and September 6th, 1990. The picket lines covered a former grid that was generally grown in with willows and fallen trees. The work was carried out partially by the author with full-time assistance by John and Lawrence Carpenter of Sioux Lookout, Ontario. Six new lines were established 1,000 feet north of the baseline between 136 +00 west and 128 +00 west. Total line cutting and chaining including baseline was 8.23 miles.

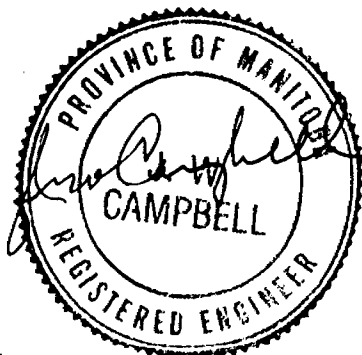


THE MAGNETOMETER SURVEY

The magnetometer survey was carried out by the author between September 6th to 11th, 1990. Survey readings were taken at 50 foot intervals along all picket lines with a Barringer GM122 Proton Magnetometer with an accuracy of + or - 5 gammas. Corrections were adapted for diurnal changes and a base station was established for control. The enclosed map showing the corrected readings taken by the author has been contoured outlining anomalous magnetic zones. Gold has been intersected in a drill hole 99 between 5 +00 N and 6 +50 N on picket line 130 +00 west and found on surface in intermediate volcanics south of a magnetometer zone in overburden that extends 1800 feet to the south west. There may be significance in this relationship to other magnetic zones and differing volcanic contacts with structural dislocations on the property. Total magnetometer survey was 7.38 miles.

THE ELECTROMAGNETIC SURVEY

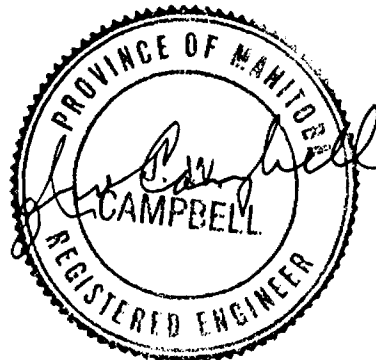
The electromagnetometer survey was carried out by the author from September 12th to September 18th inclusive. A Geonics VLF EM16 instrument was utilized with dip angle readings



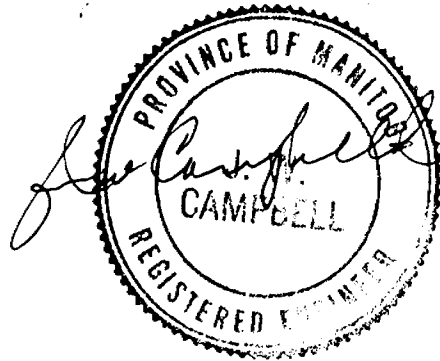
taken at 50 foot intervals along all picket lines. The VLF Seattle, Washington transmitting station was used and all readings facing northwest were taken at right angles to the Seattle station. A VLF dip angle electromagnetic survey map was prepared from the readings and a contoured VLF Frazer Filter Electromagnetometer Survey Map was also prepared from calculating the dip angle readings. Both maps are included in this report. The dip angle crossover conductors appear in low ground and usually at the edge of the contoured Frazer Filtered anomalies which appear to follow the lowest wet and swampy areas. Total VLF EM survey was 7.38 miles.

CONCLUSIONS

Gold has been discovered on the property on outcrops and in a drill hole south of the magnetometer zone that appears to be dislocated to the south in the vicinity between 8 +00 north and 4 +00 North on picket line 130 +00 W. This magnetometer zone striking south westerly through claims PA 1124642 and PA 1124868 has a relationship to the gold and may represent a marker horizon to explore for the metal. It is interesting to note that felsic volcanics appear in the area of the



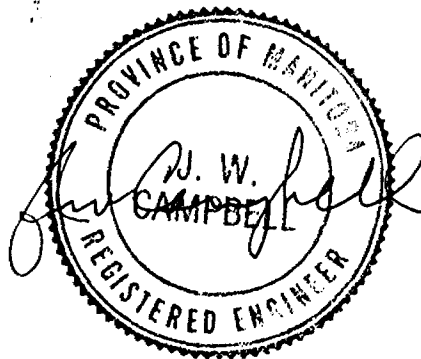
magnetic zone dislocation. The VLF electromagnetometer survey has not given a relationship to the geology or mineralization at this stage and anomalies appear to represent topographically lower and damper areas. It may become significant from drilling and detailed geological mapping that there are some fault systems associated with the VLF anomalies.



RECOMMENDATIONS

The magnetometer zones need close surface prospecting, sampling and in one case diamond drilling is indicated for gold in the vicinity of the disrupted magnetometer zone and to the south of that magnetometer zone striking through claims PA 1124868 and PA 1124642.

Detailed structural geological mapping should be carried out on this property with emphasis on sampling in the vicinity of the magnetometer zones.



J.W. Campbell, P. Eng.



DOCUMENT NO. W 9003-280



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Mining Lands Report of Work
Mining Act

(Geophysical, Geological and Geochemical Surveys)

Mining Lands Section, Mineral Development and Lands Branch

Type of Survey(s) ELECTROMAGNETIC AND MAGNETIC	Mining Division PATRICIA	Township or Area Kabik + PICKEREL Twp. Q 2079
Recorded Holder(s) NAHANNI MINES LIMITED	Prospector's Licence No. 2,13669 T-951	
Address SUITE 2220 PH 7 KING ST EAST TORONTO, ONT. M5C1A2	Telephone No. 416-868-0500	
Survey Company J.W. CAMPBELL EXPLORATION SERVICES LTD		
Name and Address of Author (of Geo-Technical Report) J.W. CAMPBELL SUITE 2104 170 HARGRAVE ST WINNIPEG MAN R3C3H4	Date of Survey (from & to) 29 AUG 90 14 OCT 90 Day Mo. Yr. Day Mo. Yr.	

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
		For first survey: Enter 40 days. (This includes line cutting)
For each additional survey: using the same grid: Enter 20 days (for each)	- Other	
Man Days Complete reverse side and enter total(s) here	Geological	
	Geochemical	
	Geophysical	Days per Claim
	- Electromagnetic - Magnetometer - Other	105 7
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Geological	
	Geochemical	
	Electromagnetic	Days per Claim
	Magnetometer Other	

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
PA	1124642				
PA	1124643				
PA	1124868				
PA	1124872				
PA	1124873				
PA	1124874				
PA	1124875				
PA	1124876				

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1990

MINING LANDS SECTION

Total number of mining claims covered by this report of work. 8

Total miles flown over claim(s). _____
Date _____
Recorded Holder or Agent (Signature) *J.W. Campbell*

Certification Verifying Report of Work

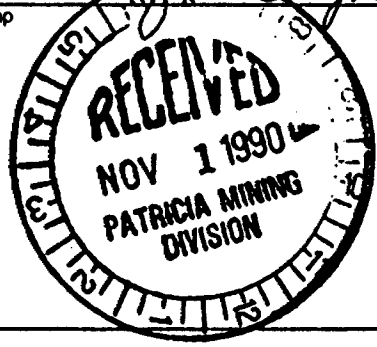
I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying
J.W. CAMPBELL SUITE 2104 - 170 HARGRAVE ST WINNIPEG MAN R3C3H4

Telephone No. **204-943-1990** Date **October 30** Certified By (Signature) *J.W. Campbell*

For Office Use Only

Total Days Cr. Recorded 480	Date Recorded Nov 1/90	Mining Recorder <i>R. Moxley</i>
	Date Approved as Recorded Jan 18/91	Provincial Manager, Mining Lands <i>Ron C. Goshinski</i>





2. ~~13669~~ File

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) ELECTROMAGNETIC AND MAGNETIC
Township or Area PICKERAL TOWNSHIP
Claim Holder(s) NAHANNI MINES LIMITED T951
SUITE 2220 PH 7 KING ST. E TORONTO ONT
Survey Company J.W. CAMPBELL EXPLORATION SERVICES M5C1A2
Author of Report JIM. W. CAMPBELL
Address of Author SUITE 2104 170 HARGRAVE ST.
WINNIPEG MANITOBA R3C3H4
Covering Dates of Survey AUGUST 29 OCT. 1990
(linecutting to office)
Total Miles of Line Cut 8.23 MILES

MINING CLAIMS TRAVERSED
List numerically

PA.....	1124642
(prefix).....	(number)
PA.....	1124643
PA.....	1124868
PA.....	1124872
PA.....	1124873
PA.....	1124874
PA.....	1124875
PA.....	1124876
I.....	

If space insufficient, attach list

<u>SPECIAL PROVISIONS</u>		DAYS
<u>CREDITS REQUESTED</u>	Geophysical	per claim
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic	<u>40</u>
ENTER 20 days for each additional survey using same grid.	-Magnetometer	<u>20</u>
	-Radiometric	_____
	-Other	_____
	Geological	_____
	Geochemical	_____

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

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

DATE: _____ SIGNATURE: R.274
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 8

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations _____ Number of Readings _____
Station interval _____ Line spacing _____
Profile scale _____
Contour interval _____

MAGNETIC

Instrument _____
Accuracy – Scale constant _____
Diurnal correction method _____
Base Station check-in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)
Parameters measured _____

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 _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

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 _____

FILE NUMBER: 2.13669

NTS

TOWNSHIP/AREA (S)

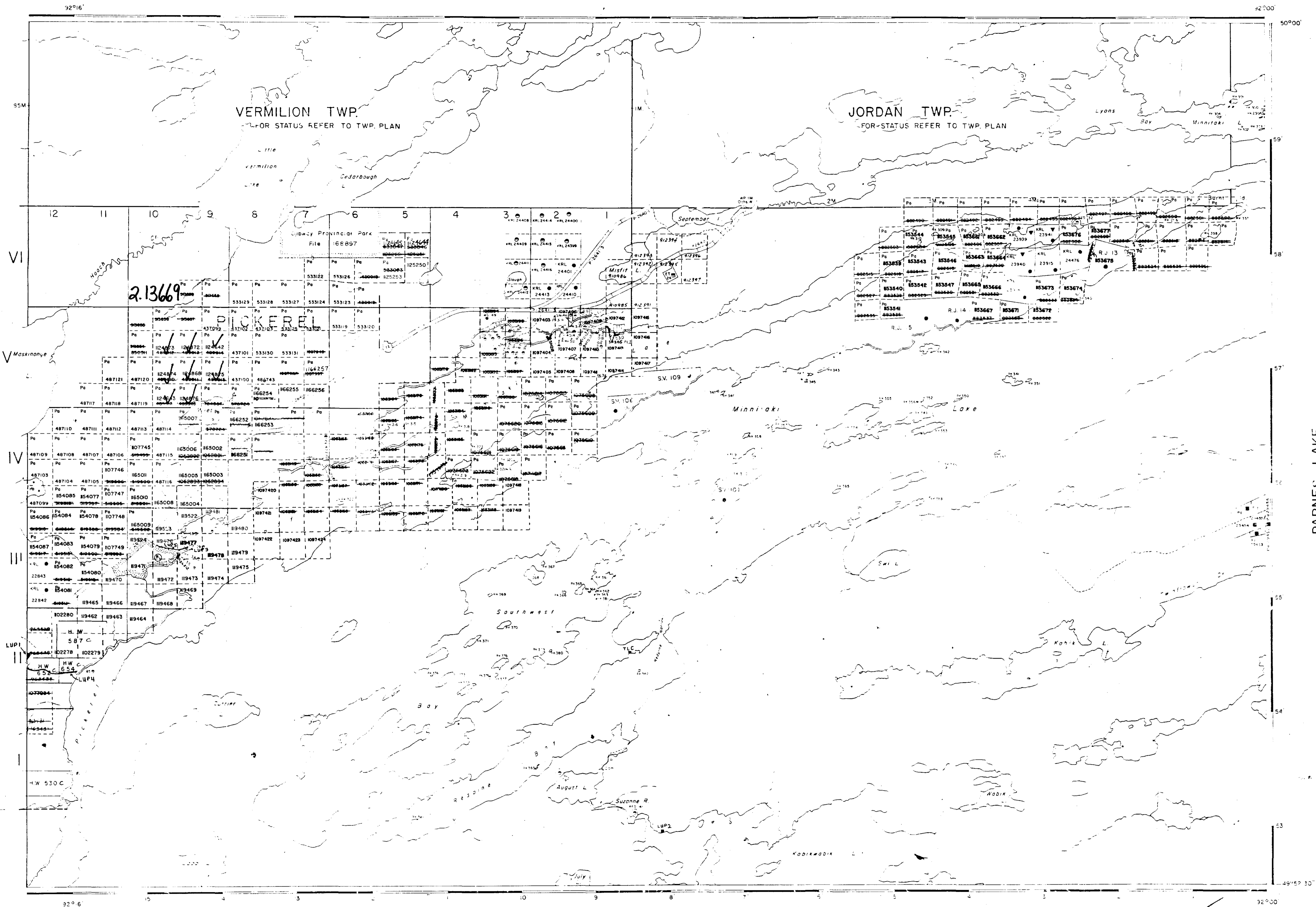
NUMBER OF POLYGONS

52F

KABIK LAKE

1

Apr 31/90
 Apr 21/90 C
 May 19/90 C
 Jun 30/90 C
 Sept 19/90 R
 Sept 24/90 R
 Sept 24/90 R
 Sept 26/90 R
 Oct 7/90 C
 Sept 26/90 R



INFORMATION THAT
 IS ON THIS MAP
 BEEN COMPILED
 VARIOUS SOURCES.
 ACCURACY IS NOT
 ANTEED. THOSE
 TO STAKE MIN-
 AIMS SHOULD CON-
 WITH THE MINING
 DER. MINISTRY OF
 ERN DEVELOP-
 AND MINES. FOR AD-
 AL INFORMATION
 E STATUS OF THE
 SHOWN HEREON

SEE TWP.



200

LEGEND

HIGHWAY AND ROUTE NO.	(Symbol)
OTHER ROADS	(Symbol)
TRAILS	(Symbol)
SURVEYED LINES	(Symbol)
TOWNSHIP BASE LINES ETC.	(Symbol)
LOTS, MINING CLAIMS, PARCELS ETC.	(Symbol)
SURVEYED LINES	(Symbol)
LOT LINES	(Symbol)
PARCEL BOUNDARY	(Symbol)
MINING CLAIMS ETC.	(Symbol)
RAILWAY AND RIGHT OF WAY	(Symbol)
UTILITY LINES	(Symbol)
NON PERENNIAL STREAM	(Symbol)
FLOODING OR FLOODING RIGHTS	(Symbol)
SUBDIVISION OF COMPOSITE PLAN	(Symbol)
RESERVATIONS	(Symbol)
ORIGINAL SURVEY LINE	(Symbol)
MARSH OR MUSKEG	(Symbol)
MINES	(Symbol)
TRAVERSE MONUMENT	(Symbol)

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
LEASE SURFACE & MINING RIGHTS	(Symbol)
SURFACE RIGHTS ONLY	(Symbol)
MINING RIGHTS ONLY	(Symbol)
LEASE SURFACE & MINING RIGHTS	(Symbol)
SURFACE RIGHTS ONLY	(Symbol)
MINING RIGHTS ONLY	(Symbol)
LICENSE OF OCCUPATION	(Symbol)
GRANT OF CROWN LAND	(Symbol)
RESERVATION	(Symbol)
DANGEROUS	(Symbol)
SAND & GRAVEL	(Symbol)

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. - MINING RIGHTS ONLY

S.R.O. - SURFACE RIGHTS ONLY

S.P.O. - SURFACE RIGHTS ONLY

18 APR 1972 S.R.O. 163474

26 MAY 1986 P.R.S. 1672 1/2

24 FEB 1982

30 JUN 1989

25 FEB 1989

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 OCT - 4 1990
 PATRICIA MINING DIVISION

89/04/28 L.U.P. 1 - WOOD LOADING SITE

L.U.P. 2 - OUTPOST CAMP

89/09/01 L.U.P. 3 - DOCK

L.U.P. 4, 5 - BELL CANADA CABLE

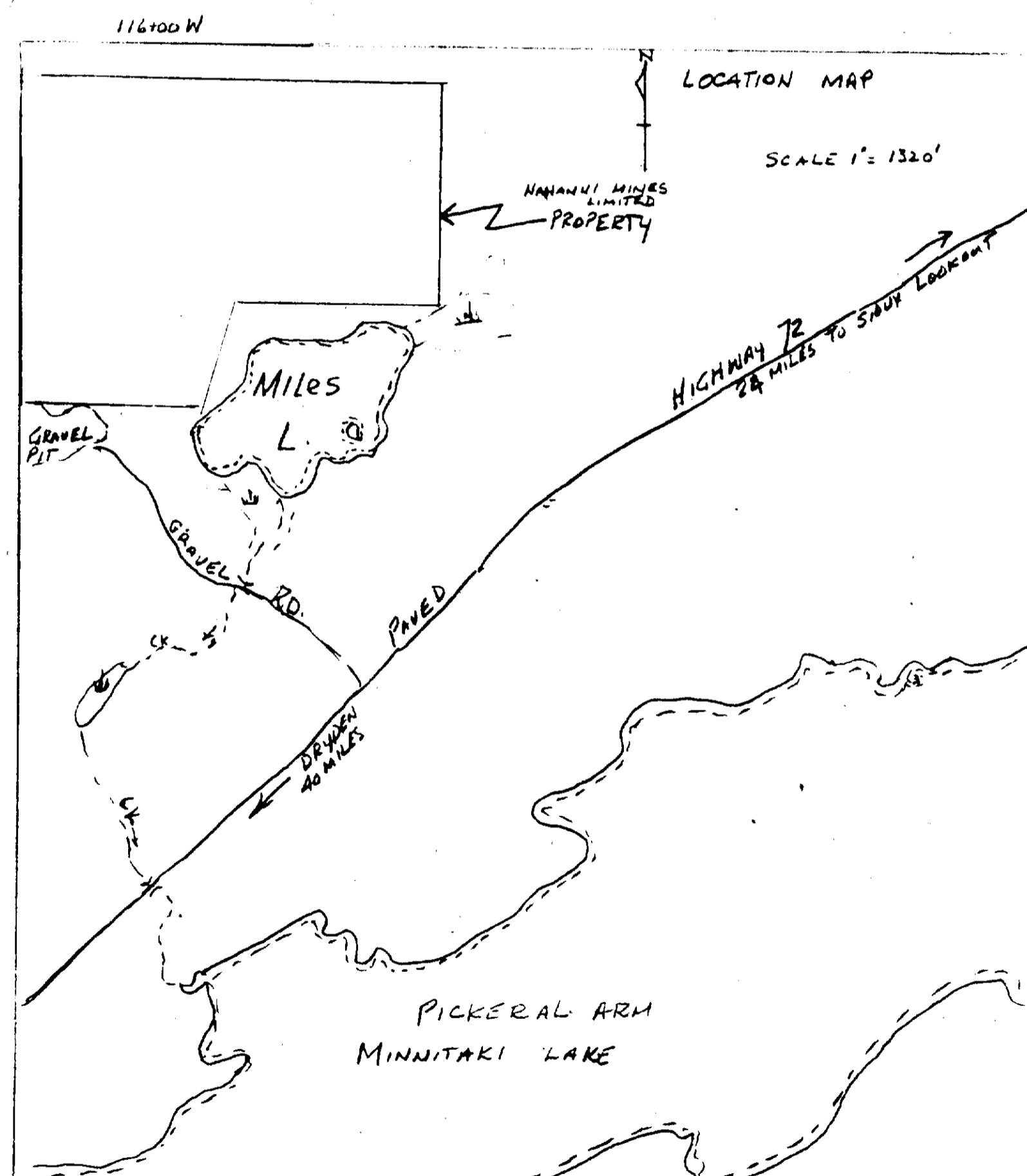
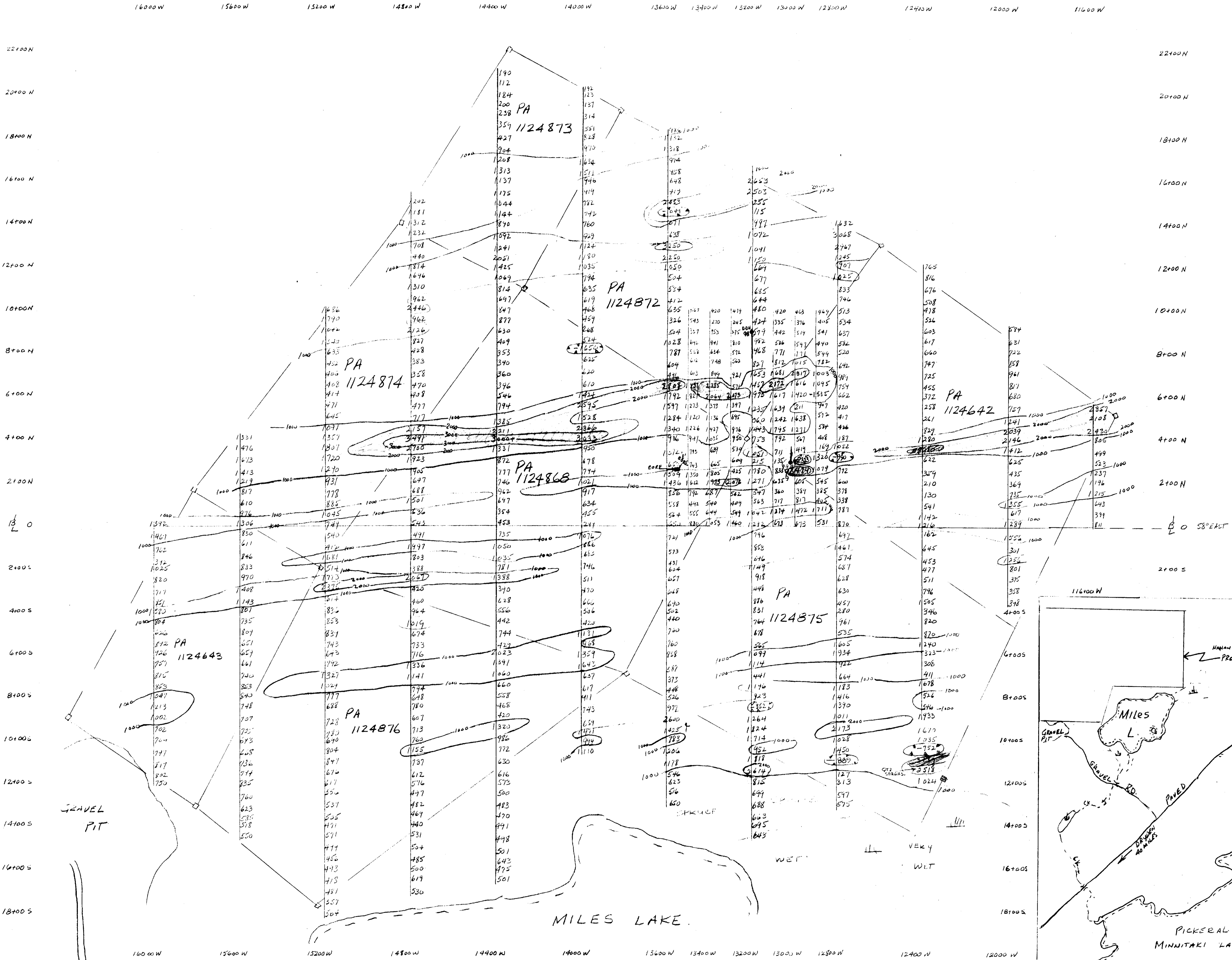
SCALE 1:50,000 = 40 CHAINS

T.L.C. - TRAPLINE CABIN

AREA KABIK LAKE AND PICKEREL TWP.

M.N.R. ADMINISTRATIVE DISTRICT
 SIOUX LOOKOUT
 MINING DIVISION
 PATRICIA
 LAND TITLES / REGISTRY DIVISION
 KENORA (PATRICIA PORTION)

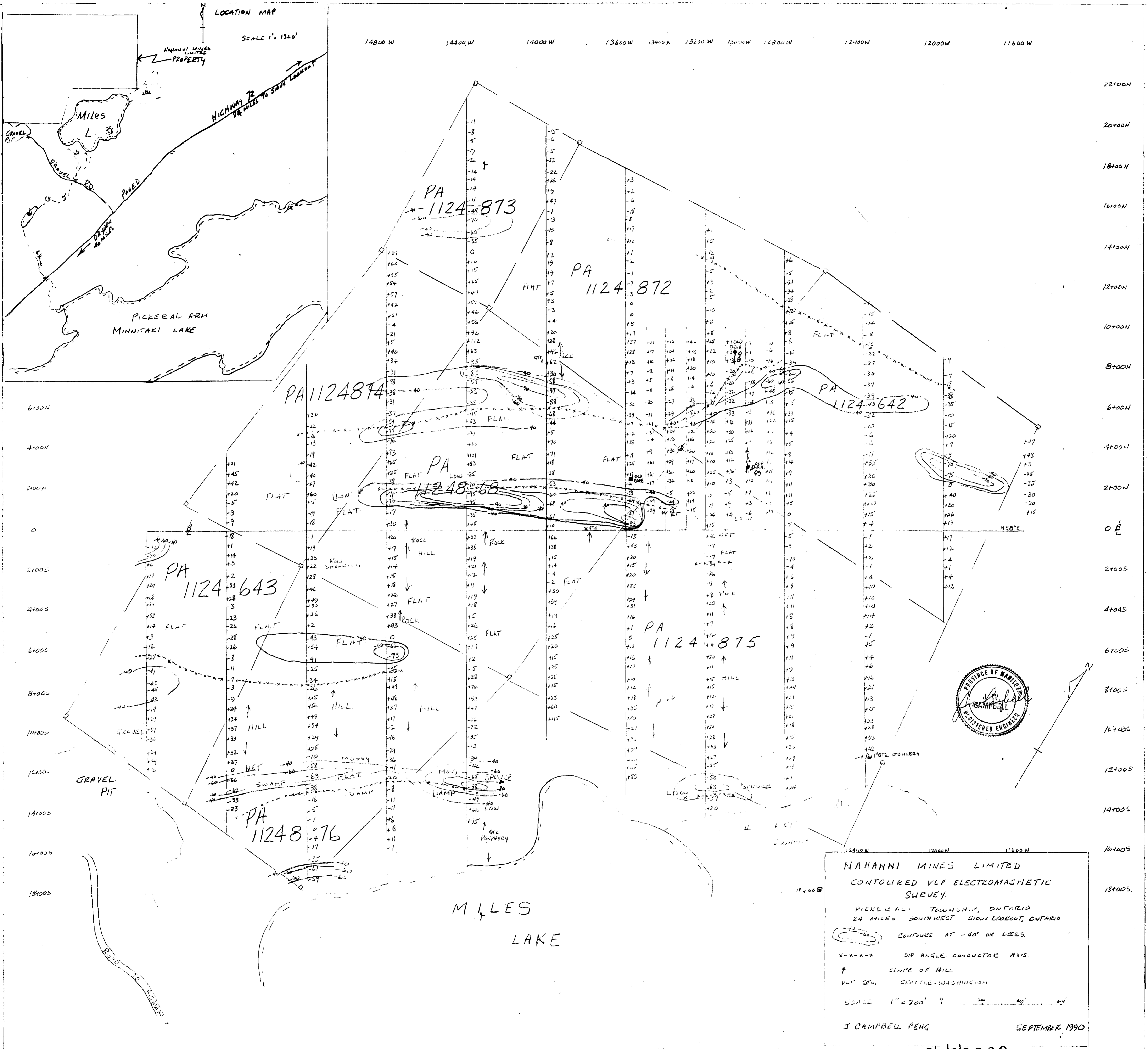
Ministry of Natural Resources
 Land Management Branch
 Ontario



NAHANNI MINES LIMITED
 PICKERAL TOWNSHIP, ONTARIO
 MAGNETOMETER SURVEY (PROTON)
 INSTRUMENT: BARRINGER GM 122
 CORRECTIONS: FOR DIURNAL & BASE STATION
 CONTOURS AT 1000 GAMMAS
 ALL READINGS SHOULD HAVE 57,000 GAMMAS ADDED
 FOR TOTAL FIELD READINGS
 SCALE 1" = 200' 0 200 FT 400 FT 600 FT
 J. W. CAMPBELL PENG SEPT - 1990



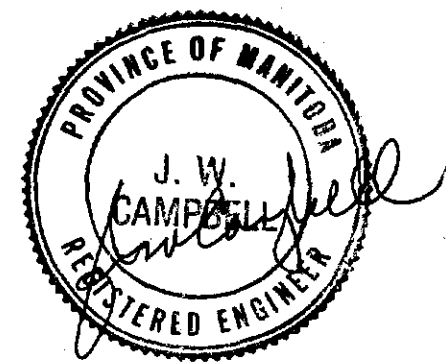
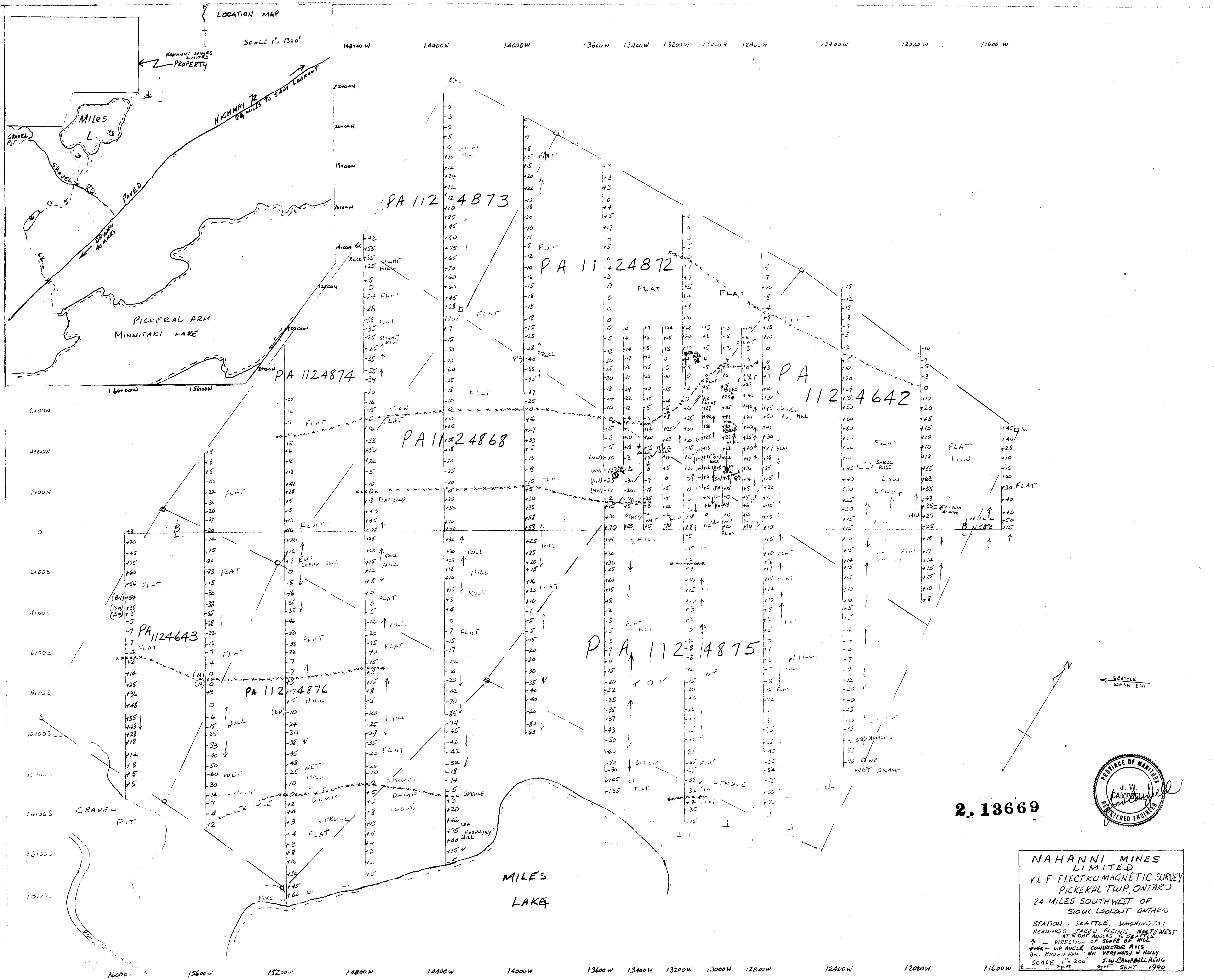
2.13669



NAHANNU MINES LIMITED
 CONTROLLED VLF ELECTROMAGNETIC SURVEY
 PICKERAL TOWNSHIP, ONTARIO
 24 MILES SOUTHWEST SIOUX LOOKOUT, ONTARIO
 CONTOURS AT -40' OR LESS.
 X-X-X-X DIP ANGLE CONDUCTOR AXIS.
 ↑ SLOPE OF HILL
 VLF STA. SEATTLE-WASHINGTON
 SCALE 1" = 200'
 J CAMPBELL PENG SEPTEMBER 1990

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2. 13669

NAHANNI MINES LIMITED
 VLF ELECTROMAGNETIC SURVEY
 PICKERAL TWP, ONTARIO
 24 MILES SOUTHWEST OF
 SIOUX LOOKOUT ONTARIO
 STATION - SEATTLE, WASHINGTON
 READINGS TAKEN FACING NORTHWEST
 AT RIGHT ANGLES TO STRIKE
 ↑ - DIRECTION OF STRIKE OF HILL
 * - UP ANGLE CONDUCTOR AXIS
 BN. BROAD NULL NN VERY NOISY N NOISY
 SCALE 1" = 200' J.W. CAMPBELL RENG
 200 FT SEPT 1990

