

41016SW9160 2.15071 HEENAN

010

ASSESSMENT WORK REPORT
HEENAN TOWNSHIP PROJECT
P-1133769
PORCUPINE MINING DIVISION
NTS 41-O-16

2.15071

RECEIVED
JUN 15 1993
MINING LANDS BRANCH

Qual. # 2.1814

May 31, 1993

David V. Mullen
Consulting Geologist

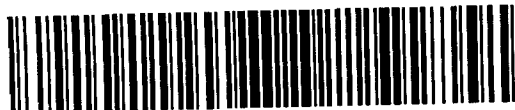
SUMMARY

Ground surveys carried out on the Heenan Township property have located a strong untested electromagnetic anomaly situated at the base of a layered mafic intrusion, in contact with a komatiitic volcanic sequence. The mafic intrusion has gabbroic and anorthositic layers, with minor disseminated pyrrhotite and pyrite. The komatiites can be divided into ultramafic komatiite and komatiitic basalts. Both olivine and clinopyroxene spinifex textures were recognized in the volcanic sequence, along with polysuturing and variolitic material. Mafic dykes cutting both gabbro and basalt were observed.

Attempts to expose the VLF-EM anomaly by trenching with explosives failed to reach bedrock. However overburden samples collected from the resulting pits revealed a variable but distinct increase in Cu and Ni with depth, suggesting that the conductor could be caused by Cu-Ni sulphide mineralization.

RECOMMENDATIONS

The presence of an untested electromagnetic conductor of limited strike length (300 m) situated at the base of a layered gabbro in contact with komatiites, and with anomalous Cu and Ni values in soil overlying it, makes this an excellent drill target. However, another attempt to expose the conductor by blasting should be made prior to resorting to a more expensive drill campaign. A very detailed magnetic and short cable HLEM survey should also be carried out across the VLF-EM conductor.



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INTRODUCTION

During July 1992, four days (July 7-10) were spent gridding, surveying, and trenching on claim P-1133769, situated in northeast Heenan Township, Porcupine Mining Division. One day was also spent examining telescoped drill core stored at the Timmins Drill Core library. In the field, the writer was ably assisted by Mr. Luke Gasteiger of Porcupine, Ontario.

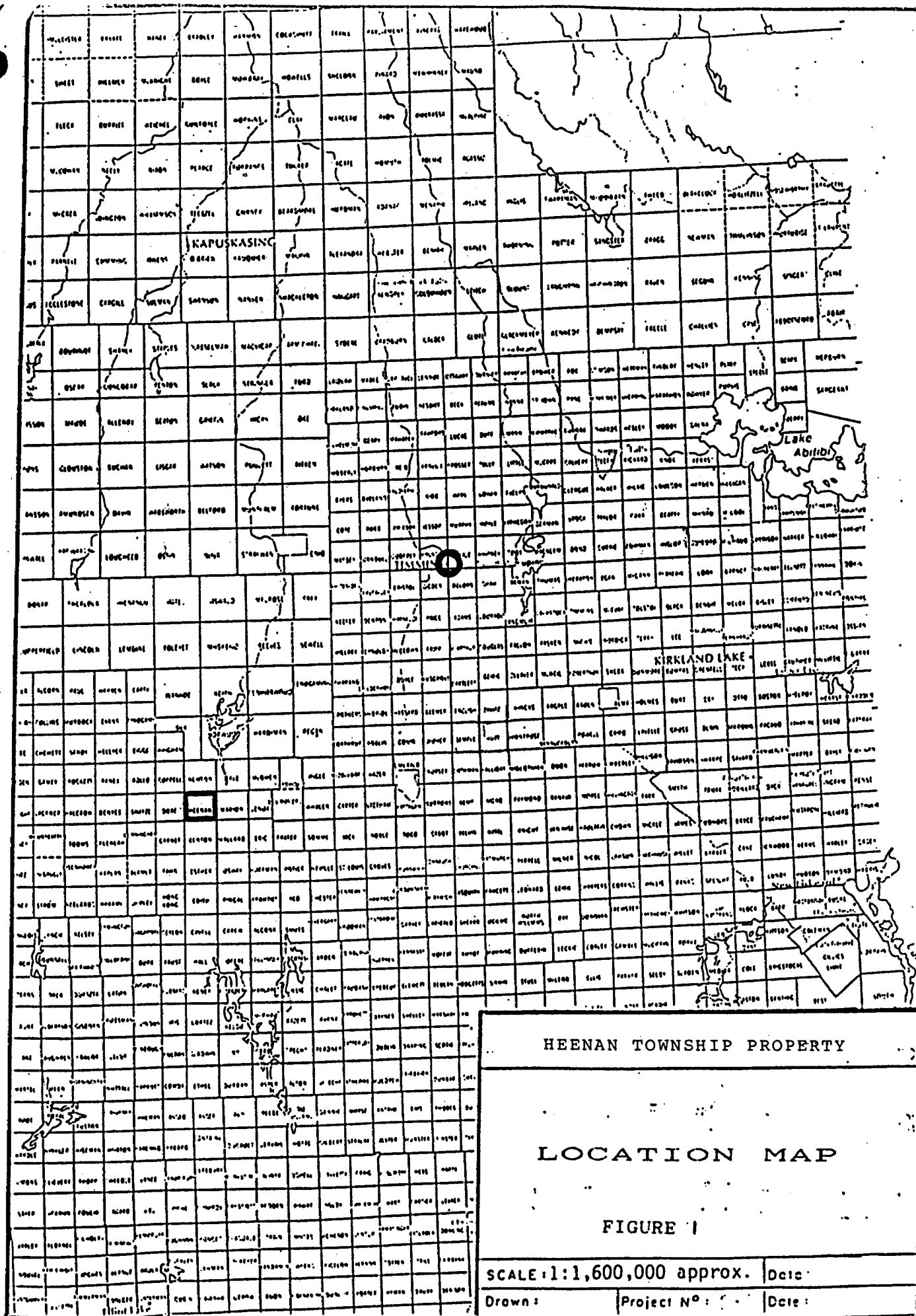
LOCATION AND ACCESS

The Heenan Township property is located in the northeastern portion of the township, 300 metres southwest of Gowagamak Lake. Heenan Township is situated 100 kilometres southwest of Timmins, Ontario and 30 kilometres south of Foleyet, Ontario (Figure 1).

The easiest access into the property is by float plane based out of Foleyet or Gogama. A cabin on Gowagamak Lake is owned by the Foleyet-based air service. Alternative routes are more circuitous, involving several portages along Heenan Creek or a long walk on a overgrown and swampy drill road.

PREVIOUS WORK

The current claim has been part of larger properties in Heenan Township. The most recent work was carried out by Kidd Creek Mines in 1983. They conducted ground magnetic, VLF-EM, and HLEM surveys on a grid covering four claims. Evidence of sampling of some of the outcrops on the property indicates that they may have conducted a geological survey but did not file a report.



HEENAN TOWNSHIP PROPERTY

LOCATION MAP

FIGURE 1

SCALE: 1:1,600,000 approx.	Date:
Drawn:	Project N ^o :
	Date:

Remnants of this grid were found during the current survey.

In 1976, Hollinger Mines drilled one hole on the south boundary of the current claim, investigating an asbestos occurrence.

Heenan Township was mapped at ¼-mile scale during 1962/63 by Ontario Department of Mines geologists, (Goodwin, 1965) and was included in a more regional survey of the Swayze Greenstone Belt in 1931 (Furse, 1932), and in a summary report of the Chapleau Area by Thurston et al. (1977). Cattell conducted research for a PhD thesis in the Heenan-Newton Township area during the early 1980's (Cattell and Arndt, 1987). An AEM survey covering the Swayze belt was flown for the OGS in 1982.

GENERAL GEOLOGY

The northern part of Heenan Township is underlain by a mainly mafic to ultramafic assemblage of east-west trending volcanics intruded by fairly extensive gabbro bodies in the core of a regional syncline. Minor felsic lithologies and iron formations border the above package. Metamorphism is of lower greenschist facies, resulting in excellent preservation of primary volcanic textures.

PROPERTY GEOLOGY

Outcrop on the Heenan Township property is quite extensive in the southern portion but limited to the north and northwest, where it is mainly swamp covered. Cliffs up to 25m in height are

present along the south claim boundary. Tree types include mainly spruce, jack pine, and balsam in the higher area, while alders and spruce dominate the swamps. Extensive windfall makes traversing very difficult. Mapping was carried out at 1:2000 scale using a 100 metre line grid picketed at 20 metre intervals.

The southern part of the property is predominantly underlain by east-northeast striking komatiitic basalt, characterized by massive flows, some polysuturing, and rare clinopyroxene spinifex textures. Variolitic textures were noted in one outcrop and in drill core. Coarsening of clinopyroxene spinifex blades at 0+15W, 2+90N suggests a north facing sequence. Intercalated with these basalts are serpentized komatiites, characterized by olivine spinifex and olivine cumulate textures. These units were mainly observed in drill core as only one outcrop of this material was located (Appendix B).

In contact with the komatiitic volcanics is a layered mafic intrusion, consisting of mainly melanocratic gabbro bands consisting of equigranular hornblende, minor actinolite, sphene, chlorite, and coarse ilmenite, interlayered with finer grained, leucocratic feldspar-rich bands. Also present is a very coarse grained anorthositic phase, traceable for at least 25 metres along strike. The plagioclase crystals are strongly altered to epidote or zoisite and display no internal zoning or twinning.

Minor rusty spots, indicative of disseminated sulphide mineralization were noted on a few outcrop surfaces. The very fine grained, weakly chloritic zone occurring along the south

LEGEND

4

MAFIC DYKES

3

LAYERED MAFIC INTRUSION

- a gabbro
- b unorthocite
- c fine grained schliered

2

KOMATIITIC BASALT

- a massive
- b pillowed, polysutured
- c varicose
- d spinifex-textured (pyroxene)

1

KOMATIITE

- a spinifex-textured (olivine)
- b polysutured
- c massive

contact of the gabbro is a possible chill zone. The layers within the gabbro strike at 070° and dip from near vertical to 70° south, suggesting that the sequence is overturned.

Intruding the volcanic and gabbroic units are two thin, fine grained mafic dykes trending at 080° and 160° respectively. They may be members of an orthogonal set of intrusions.

GEOCHEMISTRY

Sixteen samples, including two from drill core were sent to Xray Assay Labs of Don Mills, Ontario for geochemical analysis. Fourteen of these were analysed by whole rock methods, including six for a multi-element REE package. Two weakly sulphidic samples were analysed for several base and precious metals, including Pt and Pd. Results are listed in Appendix A and sample locations are plotted on the geology map. Four samples were also sent to Geoplastech Inc., of Whitby, Ontario for thin sectioning.

The whole rock data indicate that the volcanic flows on the property contain both komatiite and komatiitic basalt members (Figure 2), including one sample that could be classed as a komatiitic andesite, although it plots in the high-Mg tholeiitic basalt field. The layered mafic intrusion and thin mafic dykes have a tholeiitic chemistry, while the contact phase of the layered intrusion is somewhat transitional between komatiite and tholeiite. This unit plots as komatiitic basalt on the Jensen diagram, but has a REE pattern more characteristic of tholeiites; ie. a slightly higher chondrite-normalized abundance compared to

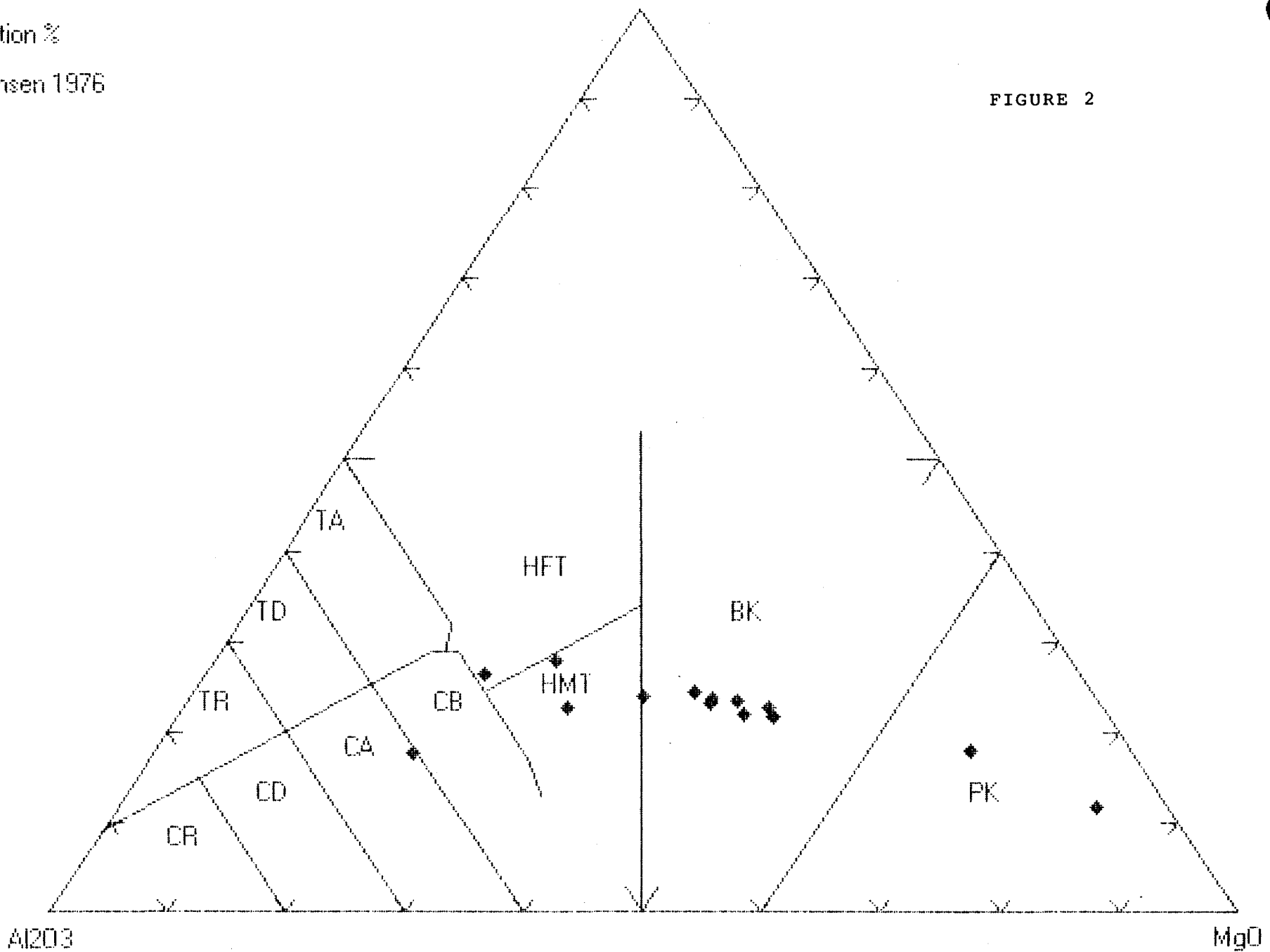
HEENAN TOWNSHIP PROPERTY

Cation %

Jensen 1976

FeO* + TiO2

FIGURE 2



Al₂O₃

MgO

komatiitic basalt and a very gentle slope (Figure 3). The REE patterns of the komatiites are not unusual; very low chondrite-normalized abundances with LREE depletion (Figure 4). The REE pattern of the anorthositic gabbro indicates a positive Eu anomaly, typical for a plagioclase-rich unit.

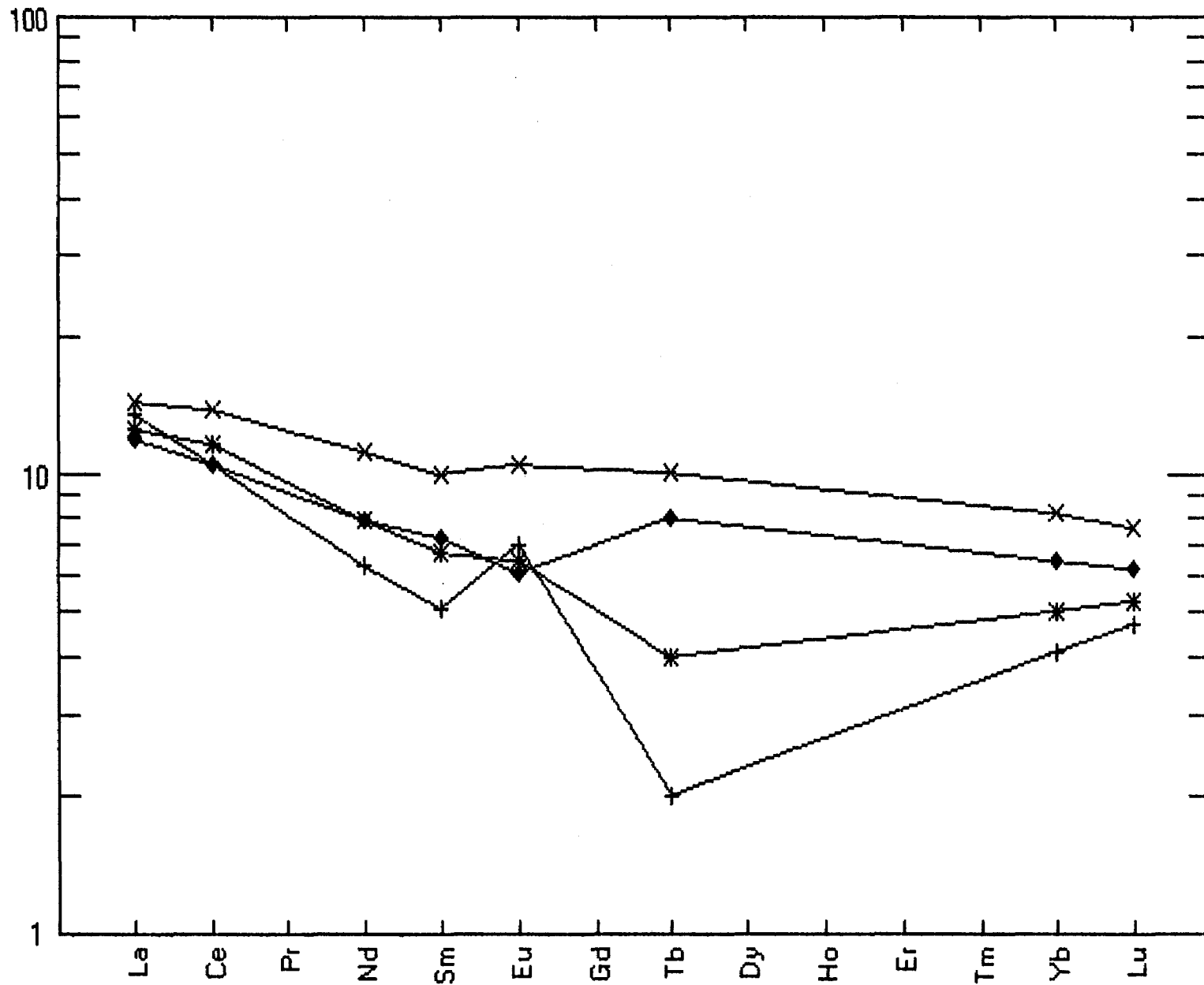
Two samples of weakly gossanous gabbro were sampled for their base and precious metal content. No anomalous values were returned.

An attempt was made to expose the VLF-EM conductor at the komatiitic basalt-layered gabbro contact by blasting a test pit with the use of approximately 20 kilograms of high explosive. A point on L2W was chosen for blasting as the contact/conductor is situated between two outcrops only 8 metres apart. The resulting blast created a crater approximately 3 metres deep in sandy soil but failed to reach bedrock, or expose any regolith. Two additional pits were dug into the bottom of the crater and 15 samples from their walls were collected. These soil samples were analysed for Cu, Ni, and Au by Acme Analytical Labs of Vancouver, British Columbia, using an ICP technique. The sample locations and results are plotted on figure 5, while a copy of the analytical data is attached to Appendix A.

The results of the sampling are very intriguing. Both copper and nickel show a definite systematic increase in abundance with pit depth in one of the pits (B), ie. towards the VLF-EM anomaly. Samples from pit A show an initial moderate increase then a decrease with pit depth. This increase in abundance with depth

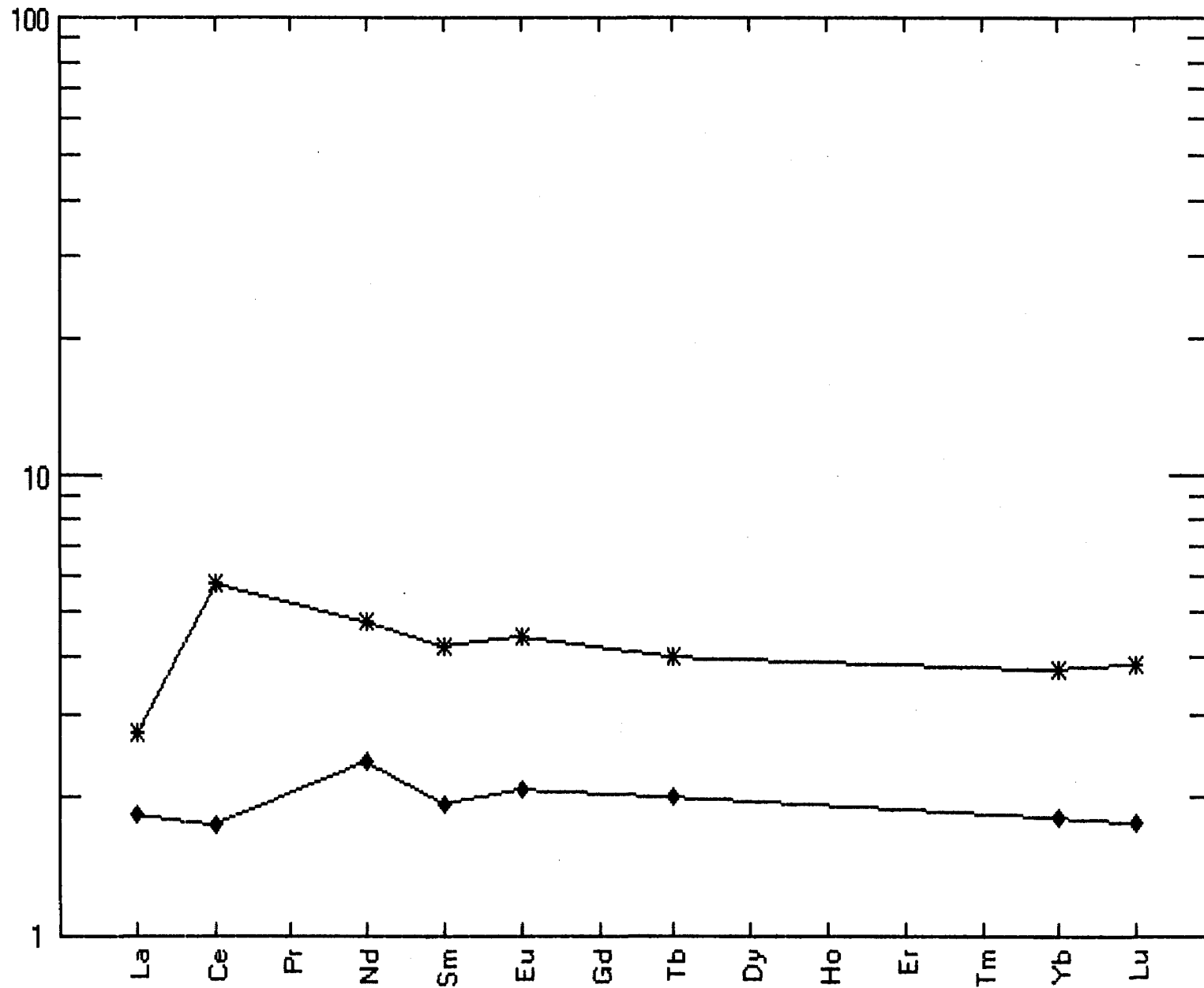
FIGURE 3

◆20666*20669×20670+20671



*20660 ♦20661

FIGURE 4



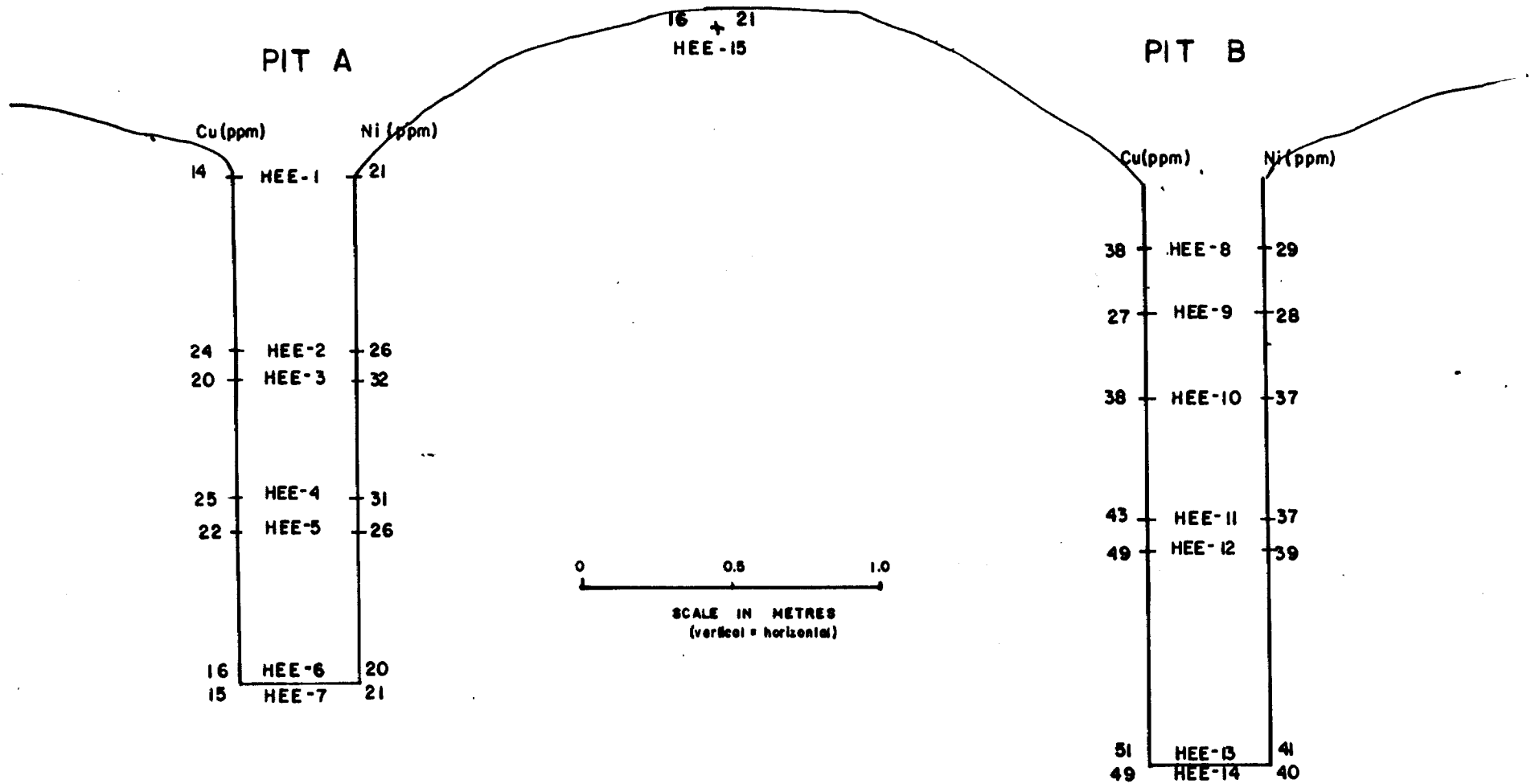


FIGURE 5: CROSS-SECTION OF SANDPITS WITH SAMPLE LOCATIONS, ANALYSES (looking west) L2W, 3+25 N

could indicate a copper-nickel source associated with the VLF-EM conductor along the base of a layered mafic intrusion. Gold values from the same set of samples are quite low and do not show any systematic increase with depth, the highest being 5 ppb Au.

GEOPHYSICAL SURVEYS

Following the establishment of a grid, magnetic and VLF-EM surveys were conducted on the property. Approximately 2.1 grid kilometres were surveyed along 100 metre spaced lines, picketed at 20 metre intervals. The south claim boundary was used as the baseline.

MAGNETIC SURVEY

One hundred and fifteen magnetic readings were collected on the grid. Because of the high magnetic variation on the property, and the small grid, only one base station tie-in was made during the course of the survey, that being at 4+60N on L 0W. A Barringer GM-122 Proton Precession magnetometer with ± 1 gamma sensitivity was used for the survey. Results were levelled to the one base station tie-in and plotted at 1:2000 scale (Map 2, back pocket).

The results, when compared to the geology of the property indicate that the very high readings obtained in the southern part of the property (>60000 gammas) are caused by serpentized komatiites, while readings over the gabbro to the north are generally less than 58750 gammas. The komatiitic basalts have

intermediate responses between 58750 and 60000 gammas. The east-northeast magnetic trend over the eastern portion of the property is in good agreement with the geological mapping. The northwestward swing in trends in the southwest corner of the grid may signify either folding or possibly proximity to a north-west striking fault zone. AEM and previous ground surveys in the area also indicate the possible presence of a fault.

The isolated magnetic high, with its accompanying magnetic low on L 2W, 3+50N is partly coincident with the strong VLF-EM conductor at the contact between the komatiitic volcanics and layered gabbro. A detailed magnetic profile should be obtained for this area.

VLF-EM SURVEY

One hundred and eleven dip angle readings were collected using a Crone Radem VLF unit, tuned to Cutler, Maine (24.0 kHz). These readings have been plotted at 1:2000 scale on Map 3 (back pocket). The results indicate at least three conductive zones were detected on the grid, labelled A, B, and C.

The strongest anomaly (A), can be traced for at least 300 metres from 2+10N on L 4W to 3+80N on L1W, and possibly continues to 4+00N on L 0W. This anomaly appears associated with the contact between komatiitic basalts and layered gabbro. It has not been drill tested.


Anomaly B is a moderate strength, single line response located at 2+90N on L 4W. Although situated in a swamp, it does

not appear to be caused by topography, as it affects the profile of anomaly A on L 4W.

Anomaly C is a weak, two line response found at 0+40N on L 1W and 0+80N on L 0W. Unlike A and B, this anomaly is probably due to overburden effects.

A short-cable (40 m) HLEM survey should be conducted over the property to better define the conductivities and depths of the better VLF-EM anomalies. The previous HLEM surveys on the property used a 120 metre cable separation.

May 31, 1993


David V. Mullen

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APPENDIX A
GEOCHEMICAL RESULTS



X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 21004

HEENAN TOWNSHIP
PROJECT

CUSTOMER No. 1984

DATE SUBMITTED
24-Sep-92

REF. FILE 13397-FL

Total Pages 20

89 ROCKS Proj. MULLEN-1

	METHOD	DETECTION LIMIT		METHOD	DETECTION LIMIT
AU P>B	FADCP	1.	SR PPM	ICP	.5
AU P>B	NA	2.	Y PPM	XRF	2.
LI PPM	ICP	1.	Y PPM	ICP	.1
BE PPM	ICP	.5	ZR PPM	XRF	3.
NA PPM	NA	50.	ZR PPM	ICP	.5
NA %	ICP	.01	MO PPM	NA	2.
WRMAJ %	WR	.01	MO PPM	ICP	1.
MG %	ICP	.01	PD PPB	FADCP	1.
AL %	ICP	.01	AG PPM	NA	2.
P %	ICP	.01	AG PPM	ICP	.1
K %	ICP	.01	CD PPM	ICP	1.
CA %	NA	.2	SN PPM	ICP	10.
CA %	ICP	.01	SB PPM	NA	.1
SC PPM	NA	.01	SB PPM	ICP	5.
SC PPM	ICP	.5	CS PPM	NA	.5
TI %	ICP	.01	BA PPM	XRF	20.
V PPM	ICP	2.	BA PPM	NA	50.
CR PPM	NA	.5	BA PPM	ICP	1.
CR PPM	ICP	1.	LA PPM	NA	.1
MN %	ICP	.01	CE PPM	NA	1.
FE %	NA	.005	ND PPM	NA	3.
FE %	ICP	.01	SM PPM	NA	.01
CO PPM	NA	.5	EU PPM	NA	.05
CO PPM	ICP	1.	TB PPM	NA	.1
NI PPM	NA	50.	YB PPM	NA	.05
NI PPM	ICP	1.	LU PPM	NA	.01
CU PPM	ICP	.5	HF PPM	NA	.2
ZN PPM	NA	20.	TA PPM	NA	.5
ZN PPM	ICP	.5	W PPM	NA	1.
AS PPM	NA	1.	W PPM	ICP	10.
AS PPM	ICP	3.	IR PPB	NA	5.
SE PPM	NA	1.	PT PPB	FADCP	10.
BR PPM	NA	.5	PB PPM	ICP	2.
RB PPM	NA	10.	BI PPM	ICP	3.
SR PPM	XRF	2.	TH PPM	NA	.2
SR PPM	NA	100.	U PPM	NA	.1

DATE 03-DEC-92

CERTIFIED BY 

Jean H.L. Opdebeeck, General Manager

XRAL

SAMPLE WITH LOW SUMS HAVE BEEN REPEATED WITH NO CHANGE

WE HAVE CHECKED FOR THE FOLLOWING ELEMENTS:

CU, ZN, NI, PB, CO, AS, U, MO

OF WHICH NONE WERE FOUND
IN GREATER THAN TRACE/MINOR QUANTITIES

SAMPLE	AU PPB	AU PPB	LI PPM	BE PPM	NA PPM	NA %	HG %	AL %	P %
20660	--	<2	--	--	2300	--	--	--	--
20661	--	<2	--	--	290	--	--	--	--
20662	--	--	4	<.5	--	.06	2.03	1.71	.02
20663	--	--	<1	<.5	--	.08	.44	.43	.01
20664	--	--	18	.6	--	.04	2.91	2.53	.02
20665	--	--	4	<.5	--	.10	1.74	1.56	.02
20666	--	<2	--	--	13000	--	--	--	--
20667	--	--	11	<.5	--	.05	1.87	1.64	.02
20668	--	--	19	<.5	--	.06	2.31	1.83	.02
20669	--	<2	--	--	14000	--	--	--	--
20670	--	<2	--	--	25000	--	--	--	--
20671	--	<2	--	--	11000	--	--	--	--
20672	--	--	28	.6	--	.08	2.16	2.73	.01
20673	--	--	16	1.2	--	.08	2.93	3.11	.05
20674	2	--	7	.5	--	.07	1.00	1.46	.03
20675	1	--	8	<.5	--	.08	1.00	1.37	.02

SAMPLE	K %	CA %	CA %	SC PPM	SC PPM	TI %	V PPM	CR PPM	CR PPM
20660	--	3.0	--	25.8	--	--	--	2500	--
20661	--	1.0	--	12.6	--	--	--	1400	--
20662	.02	--	.48	--	2.3	.15	37	--	317
20663	<.01	--	.39	--	1.3	.12	16	--	189
20664	<.01	--	1.29	--	1.6	.11	60	--	429
20665	.01	--	.55	--	2.9	.15	46	--	370
20666	--	4.8	--	34.0	--	--	--	1000	--
20667	.02	--	.50	--	1.8	.14	38	--	287
20668	.02	--	.55	--	2.2	.09	42	--	438
20669	--	5.3	--	28.6	--	--	--	960	--
20670	--	5.7	--	38.7	--	--	--	250	--
20671	--	5.6	--	29.1	--	--	--	440	--
20672	.24	--	1.01	--	2.1	.06	69	--	88
20673	.01	--	1.17	--	8.8	.37	190	--	68
20674	.05	--	.89	--	2.8	.17	70	--	65
20675	<.01	--	1.24	--	2.4	.11	39	--	140

SAMPLE	MN %	FE %	FE %	CO PPM	CO PPM	NI PPM	NI PPM	CU PPM
20660	--	8.23	--	95.0	--	960	--	--
20661	--	5.70	--	98.0	--	1700	--	--
20662	.04	--	2.50	--	19	--	127	73.6
20663	.01	--	.99	--	18	--	153	86.0
20664	.05	--	3.46	--	36	--	143	27.0
20665	.03	--	2.68	--	33	--	198	99.5
20666	--	8.12	--	69.0	--	250	--	--
20667	.04	--	2.31	--	22	--	98	56.7
20668	.04	--	2.58	--	26	--	141	80.8
20669	--	6.88	--	56.0	--	220	--	--
20670	--	8.31	--	45.0	--	110	--	--
20671	--	8.13	--	58.0	--	210	--	--
20672	.06	--	3.24	--	26	--	76	64.7
20673	.09	--	6.08	--	39	--	59	211
20674	.04	--	2.79	--	18	--	32	60.5
20675	.02	--	2.20	--	20	--	58	115

SAMPLE	ZN PPM	ZN PPM	AS PPM	AS PPM	SE PPM	BR PPM	RB PPM
20660	100	--	1	--	<1	2.4	<10
20661	60	--	3	--	<1	2.8	10
20662	--	31.5	--	<3	--	--	--
20663	--	10.8	--	<3	--	--	--
20664	--	40.9	--	3	--	--	--
20665	--	27.8	--	<3	--	--	--
20666	120	--	1	--	<1	3.0	<10
20667	--	26.8	--	<3	--	--	--
20668	--	30.6	--	<3	--	--	--
20669	110	--	3	--	<1	2.0	<10
20670	190	--	8	--	<1	3.7	<10
20671	110	--	2	--	<1	2.0	10
20672	--	47.3	--	<3	--	--	--
20673	--	74.9	--	<3	--	--	--
20674	--	37.5	--	<3	--	--	--
20675	--	25.7	--	<3	--	--	--

SAMPLE	SR PPM	SR PPM	SR PPM	Y PPM	Y PPM	ZR PPM	ZR PPM	MO PPM	MO PPM
20660	--	<100	--	--	--	--	--	<2	--
20661	--	<100	--	--	--	--	--	<2	--
20662	127	--	4.8	<2	4.5	59	2.9	--	<1
20663	185	--	6.5	<2	3.7	54	3.3	--	5
20664	68	--	9.6	<2	3.4	51	2.7	--	<1
20665	92	--	3.8	<2	5.5	62	4.0	--	2
20666	--	<100	--	--	--	--	--	3	--
20667	153	--	13.2	<2	3.9	56	1.5	--	<1
20668	97	--	6.0	<2	2.7	56	1.4	--	<1
20669	--	<100	--	--	--	--	--	3	--
20670	--	200	--	--	--	--	--	<2	--
20671	--	<100	--	--	--	--	--	3	--
20672	447	--	39.6	<2	2.1	33	<.5	--	<1
20673	286	--	33.3	6	9.5	102	21.8	--	<1
20674	--	--	61.3	--	4.8	--	2.1	--	3
20675	--	--	80.1	--	3.3	--	1.7	--	2

SAMPLE	PD PPB	AG PPM	AG PPM	CD PPM	SN PPM	SB PPM	SB PPM	CS PPM
20660	--	<2	--	--	--	1.2	--	.9
20661	--	<2	--	--	--	.6	--	1.5
20662	--	--	<.1	1	<10	--	<5	--
20663	--	--	<.1	<1	<10	--	<5	--
20664	--	--	<.1	1	<10	--	6	--
20665	--	--	<.1	1	<10	--	<5	--
20666	--	<2	--	--	--	.1	--	<.5
20667	--	--	<.1	<1	<10	--	<5	--
20668	--	--	<.1	<1	<10	--	<5	--
20669	--	<2	--	--	--	.3	--	.7
20670	--	<2	--	--	--	.7	--	<.5
20671	--	<2	--	--	--	.3	--	.9
20672	--	--	<.1	<1	<10	--	<5	--
20673	--	--	<.1	3	<10	--	<5	--
20674	<1	--	<.1	1	<10	--	<5	--
20675	4	--	<.1	<1	<10	--	<5	--



SAMPLE	BA PPM	BA PPM	BA PPM	LA PPM	CE PPM	ND PPM	SM PPM
20660	--	<50	--	.9	5	3	.86
20661	--	<50	--	.6	<3	<3	.39
20662	159	--	6	--	--	--	--
20663	165	--	5	--	--	--	--
20664	121	--	11	--	--	--	--
20665	120	--	6	--	--	--	--
20666	--	50	--	3.9	9	5	1.47
20667	180	--	7	--	--	--	--
20668	174	--	9	--	--	--	--
20669	--	130	--	4.1	10	5	1.36
20670	--	60	--	4.7	12	7	2.03
20671	--	100	--	4.4	9	4	1.04
20672	431	--	53	--	--	--	--
20673	157	--	14	--	--	--	--
20674	--	--	14	--	--	--	--
20675	--	--	11	--	--	--	--

SAMPLE	EU PPM	TB PPM	YB PPM	LU PPM	HF PPM	TA PPM	W PPM	W PPM
20660	.34	.2	.83	.13	.7	<.5	<1	--
20661	.16	.1	.40	.06	.3	<.5	2	--
20662	--	--	--	--	--	--	--	<10
20663	--	--	--	--	--	--	--	<10
20664	--	--	--	--	--	--	--	<10
20665	--	--	--	--	--	--	--	<10
20666	.47	.4	1.42	.21	1.4	<.5	<1	--
20667	--	--	--	--	--	--	--	<10
20668	--	--	--	--	--	--	--	<10
20669	.50	.2	1.10	.18	1.4	<.5	<1	--
20670	.80	.5	1.81	.26	1.4	<.5	3	--
20671	.54	.1	.90	.16	.5	<.5	<1	--
20672	--	--	--	--	--	--	--	<10
20673	--	--	--	--	--	--	--	<10
20674	--	--	--	--	--	--	--	<10
20675	--	--	--	--	--	--	--	<10

SAMPLE	IR PPB	PT PPB	PB PPM	BI PPM	TH PPM	U PPM
20660	<5	--	--	--	<.2	<.1
20661	<5	--	--	--	.2	<.1
20662	--	--	<2	4	--	--
20663	--	--	<2	<3	--	--
20664	--	--	<2	5	--	--
20665	--	--	<2	<3	--	--
20666	<5	--	--	--	.4	<.1
20667	--	--	<2	5	--	--
20668	--	--	2	<3	--	--
20669	<5	--	--	--	.2	.3
20670	<5	--	--	--	.3	.2
20671	<5	--	--	--	.3	<.1
20672	--	--	<2	3	--	--
20673	--	--	<2	5	--	--
20674	--	<10	<2	6	--	--
20675	--	7	<2	4	--	--



SAMPLE \ %	SI02	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	CR2O3	LOI	SUM
20660	41.4	5.99	5.41	24.3	.27	.02	12.1	.19	.465	.04	.39	6.65	97.2
20661	39.0	2.95	2.10	32.4	<.01	<.01	8.95	.12	.248	.03	.25	11.8	97.8
20662	48.7	11.1	9.19	12.1	2.09	.17	12.1	.21	.692	.08	.11	2.60	99.1
20663	56.3	12.0	8.79	6.86	2.97	.20	8.93	.16	.623	.07	.12	1.15	98.2
20664	51.9	10.5	7.94	11.3	1.59	.18	11.1	.19	.553	.07	.12	4.35	99.8
20665	50.4	12.4	7.89	9.87	3.42	.13	11.5	.16	.768	.08	.11	2.30	99.0
20666	46.9	10.4	7.54	14.8	1.65	.21	12.0	.19	.654	.08	.15	3.60	98.2
20667	50.7	10.1	9.14	12.3	1.57	.67	11.7	.20	.632	.07	.12	2.55	99.8
20668	49.3	9.87	8.75	13.8	1.70	.30	11.9	.22	.652	.07	.17	3.10	99.8
20669	49.2	10.2	9.37	12.6	2.02	.20	10.9	.21	.559	.06	.15	2.15	97.6
20670	49.9	13.8	8.36	7.34	3.39	.11	12.9	.22	1.03	.08	.03	2.25	99.4
20671	46.2	11.9	9.31	12.0	1.40	.47	13.2	.22	.588	.05	.06	2.80	98.2
20672	45.0	21.3	8.23	6.15	2.22	2.23	9.20	.15	.578	.05	.01	3.85	99.0
20673	47.3	16.8	6.53	6.26	4.12	.10	12.8	.21	1.06	.14	<.01	4.55	99.9

SAMPLE	SR PPM	Y PPM	ZR PPM	BA PPM
20660	24	<2	35	87
20661	17	<2	25	64
20666	78	<2	60	139
20669	157	<2	54	173
20670	224	2	66	154
20671	145	<2	37	178

AA
LL

GEOCHEMICAL ANALYSIS CERTIFICATE

David V. Mullen File # 92-3355 Page 1
735 Melrose Blvd., Timmins ON P4N 5N9AA
LL

SAMPLE#

Cu Ni Au*
ppm ppm ppb

HEE-1	14	21	1
HEE-2	24	26	1
HEE-3	20	32	4
HEE-4	25	31	5
HEE-5	22	26	2
HEE-6	16	20	2
HEE-7	15	21	1
HEE-8	38	29	1
HEE-9	27	28	2
HEE-10	38	37	2
HEE-11	43	37	2
HEE-12	49	39	5
HEE-13	51	41	3
HEE-14	49	40	2
RE HEE-12	50	40	3
HEE-15	16	21	1
STANDARD C\AU-S	64	76	46

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: SOIL AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 28 1992

DATE REPORT MAILED:

Oct 1/92

SIGNED BY.....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

APPENDIX B
DIAMOND DRILL LOG/RELOG
HOLLINGER HOLE HEE-76-1

2321

Location of Collar from #4 Post of P-443064

South 450'
East 150'

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76 1.
COMMENCED Oct. 29, 1976
FINISHED Nov. 5, 1976
PURPOSE OF HOLE to test surface asbestos showing @ depth
Drilled by: Bradley Bros.

NORTH 0+00 B.L.
EAST XL 00
ELEV. Surface
AZIM. 160° az. (True)
DIP Collar @ -55°; 200' @ -53°

PROPERTY HEENAN #1, Heenan Township
P-443064 BQ Core

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
0'	16'	CASING - Overburden.						
16'	194.9'	SERPENTINITE FLOW - fine-grained to very fine-grained; dark grey to blue-black; strongly magnetic; abundant spinifex throughout - usually well-developed, with 'olivine' blades up to 40 mm long at top, and up to 22 mm long @ about 140'; core is cut by numerous criss-crossing fractures - many of which are filled by narrow white and pale green carbonate-serpentine-chlorite stringers; from top to 140', the abundance of stringers and prevalence of low core angles (usually @ 30° to 40° to C.A.) for fracture planes renders the unit quite blocky - in fact, the core is very broken from 112' to 132' and there is some lost core; @ 83.2', there is a narrow (12 mm) stringer-breccia zone @ 35° to C.A. - also @ 87', 91.4', and 102.5' (25 mm wide, @ 65° to C.A.), @ 143.4' and 147'; from 144.8' to 194.9', the unit is much more massive, blue-black, and is cut by curving fractures characterized by black, possibly magnetite-rich						

2321

FORM 512

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

2

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
		centres (up to 3 mm wide), and greyish-white granular alteration rims (up to 2 mm wide) - the two dominant core angles of these fractures are 20° and 50°, but there are others; a few white carbonate seams are present @ 30° to C.A. as well as several zones of tight hairline carbonate stringers @ 55° to C.A. every 3 feet or so (within these zones - about 12 mm wide - are up to 20 separate parallel stringers);						
		- from 108' to 120', there is a section of strong breccia featuring subangular to subrounded ultrabasic fragments (up to 20 mm across) in a loose cement of magnetite, chlorite and carbonate; may be partly responsible for broken core in this section.						
		- from 163' to 164' is a very narrow stringer (0.75 mm wide) of asbestos @ 5° to 10° to C.A.						
		- from 167.7' to 183' are numerous narrow irregular white seams of asbestos fibre varying from 4 mm wide (@ 45° to C.A.) to about 0.5 mm wide (@ 35° or less to C.A.); the heaviest concentration of veinlets						

2321

FORM 522

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

3.

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
		occurs from 169.5' to 172', with up to 5 separate veinlets in an individual zone 20 mm wide; overall fracture density varies from 5 to 10 per foot (true width) - of which perhaps 50% are asbestos-bearing. - @ 194.7' - trace of very fine asbestos fibre.						
208.9'	208.8'	DUNITE - section of fine- to medium-grained, medium to light green, carbonatized peridotite or dunite; non-magnetic; cut by numerous narrow white carbonate-serpentine-brucite veinlets over upper 5 feet and basal 1 foot; smears and tiny blebs of chalcopyrite along black chloritic fractures throughout; lower contact quite sharp and distinct @ 60° to C.A.						
208.8'	285'	BRECCIATED to POLYSUTURED PERIDOTITE - - fine-grained; mottled green and black due to suspension of carbonatized medium to dark grey 'fragments' (up to 25 mm across) in a maze of black to banded white-green seams or sutures; moderately magnetic; fracture density is about 10 per foot; some of the fractures (especially						

2321

FORM 522

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

4.

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
		from 250' to 255') are subparallel to the C.A.; there is some red hematitic staining along a few fractures; the unit is bleached(?) light grey from 274' to 277' and 282' to base.						
285'	292.8'	SERPENTINITE - similar to top of hole; spinifex throughout; 'olivine' blades up to 25 mm long; strongly to moderately magnetic; medium grey.						
292.8'	356.2'	SERPENTINIZED PERIDOTITE - fine-grained; dark grey to black; strongly magnetic; relatively massive with some green and white banded carbonate-serpentine veinlets throughout @ 30° to 40° to C.A.; lower contact sharp but indistinct; trace of asbestos fibre @ 339' as well as 3 mm wide fibrous serpentine veinlets @ 5° to C.A. @ 335'.						
356.2'	406'	SERPENTINITE - similar to units above; spinifex throughout except for section from top to 361.5'; generally dark grey to blue-black except for section from top to 370.3' which is light grey to light grey-green; blue-black 'fragments' (up to 6 mm across; only moderately magnetic) are scattered through the light						

2320

FORM 522

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

5.

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
		grey-green matrix from 359' to 361'; olivine blades up to 36 mm long at 368' with only slight decrease in length down-hole; lower contact sharp and distinct @ 20° to C.A. with a 75 mm wide zone of bleaching above the contact.						
406'	427'	DACITE - fine-grained; light grey-green; non-magnetic, and non-carbonatized except for numerous narrow white carbonate wash stringers throughout; traces of disseminated pyrite; locally chloritic						
427'	548.5'	DACITE 'FRAGMENTAL' (?) - fine-grained; light grey-green, subangular fragments (up to 30 mm across); some with serrated edges, medium- to widely-spaced in a dark grey-green cement; cut by numerous narrow white stringers and veinlets (probably mainly quartz) - usually containing traces of disseminated pyrite, pyrrhotite and some chalcopyrite. Blabs of pyrrhotite with traces of chalcopyrite are particularly noticeable @ 467.5', 488.3', 489', 493.6'. Quartz-carbonate veining is especially abundant from 481' to 490' and 515' to 521'; narrow breccia section with some pyrite @ 533.3'; the unit is	485'	490'		5'		5% to 7% strgrs; 2% to 3% po, tr. cp
			515'	518'		3'		5% to 10% strgrs; 2% to 3% po, tr. py.
			518'	520.6'		2.6'		" ; 3% to 5% po, cp
			520.6'	520.8'		0.2'		" ; "

2321

FORM 522

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

6.

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE
			FROM	TO	RECOV.	WIDTH	ASSAY	
		non-magnetic, generally non-carbonatized, and locally serpentinized along slips and fractures.						
548.5'	654'	SERPENTINITE FLOW - fine-grained; dark grey to blue-black; spinifex texture prominent throughout - with 'olivine' blades up to 18 mm long @ 560.5', up to 25 mm long @ 601', and up to 38 mm long @ 647'; cut by scattered narrow white and/or banded white-green carbonate-silica-brucite(?) - serpentine stringers; no indications of asbestos fibre; traces of chalcopyrite with stringer @ 635.3'; broken core from 612' to 622'; upper contact sharp but indistinct; unit is moderately to strongly magnetic.						
		E.O.H. - 654'						
		HOLLINGER MINES LIMITED TIMMINS, ONTARIO						

2321

FORM 622

DIAMOND DRILL REPORT

HOLE NO. HEE-1-76

7.

NORTH _____
 EAST _____
 ELEV. _____
 AZIM. _____
 DIP _____

PROPERTY HEENAN #1, Heenan Township

COMMENCED _____
 FINISHED _____
 PURPOSE OF _____
 HOLE _____

FROM	TO	DESCRIPTION	CORE SAMPLES					DESCRIPTION OF SAMPLE										
			FROM	TO	RECOV.	WIDTH	ASSAY											
		Grab Samples for Geochem																
		@ 18'						Cu	Zn	Ni	Ag	Pb	Au					
		@ 58'						26	50	1350	0.1	15						
		@ 90.5'						62	30	610	0.1	14						
		@ 136'						13	40	1570	0.1	17						
		@ 169'						65	35	1000	0.1	13						
		@ 202'						32	33	2240	0.1	20						
		@ 238'						40	40	413	0.1	8	Nil					
		@ 273'						12	30	1740	0.1	15						
		@ 312'						35	32	850	0.1	20						
		@ 336'						14	35	1350	0.1	15						
		@ 336'						10	37	1700	0.1	22						
		@ 365'						62	22	600	0.1	7						
		@ 390'						66	40	910	0.1	10						
		@ 408'						40	74	700	0.1	9	Nil					
		@ 427'						172	170	140	0.1	13	"					
		@ 452'						150	50	200	0.1	5	"					
		@ 475'						113	49	180	0.1	13	"					
		@ 500'						152	42	120	0.1	7	"					
		@ 530'						250	34	730	0.1	10	"					
		@ 560'						60	23	620	0.1	10	"					
		@ 600'						70	22	750	0.1	12	"					
		@ 635.3'						53	21	610	0.1	11	"					

Hole HEE-76-1: Relog of telescoped drill core stored at the
Timmins Drill Core Library

FOOTAGE	DESCRIPTION
16	massive ultramafic volcanic, serpentized
20	spinifex textured ultramafic
25	massive ultramafic
30	coarse spinifex textured ultramafic
35	very coarse spinifex and massive ultramafic
40	massive ultramafic, fine spinifex
45	coarse spinifex
50	coarse spinifex
55	very coarse spinifex
60	very coarse spinifex
65	medium grained spinifex
70	very coarse spinifex
75	very coarse spinifex
80	bladed ultramafic, coarse spinifex
85	massive ultramafic
90	massive ultramafic
95	fine spinifex, pyrite on slip plane
100	medium spinifex, pyrrhotite on slip plane
105	medium spinifex
110	polysutured ultramafic, calcite veinlets
115	coarse spinifex
120	coarse spinifex
125	medium spinifex
130	massive ultramafic
135	coarse spinifex
140	massive ultramafic
145	massive ultramafic
150	fine grained massive ultramafic
155	fine grained massive ultramafic
160	fine grained massive ultramafic
165	massive ultramafic
170	massive ultramafic, asbestos veinlets
175	massive ultramafic
180	massive ultramafic
185	massive ultramafic
190	massive ultramafic
195	massive ultramafic
200	massive ultramafic, lighter green in colour
205	fine grained massive ultramafic, lighter green
210	massive dark grey ultramafic
215	massive dark grey ultramafic
220	foliated ultramafic, 45° to core axis
225	massive ultramafic
230	polysutured ultramafic
235	massive ultramafic
240	massive ultramafic
245	massive ultramafic
250	massive ultramafic
255	polysutured ultramafic

FOOTAGE	DESCRIPTION
260	fine grained massive ultramafic
265	fine grained massive ultramafic
270	ground core, fine grained spinifex
275	fine grained massive ultramafic, lighter grey
280	massive grey ultramafic
285	massive light grey ultramafic
290	fine grained spinifex
295	granular massive ultramafic
300	massive ultramafic, serpentine veinlets
305	massive ultramafic
310	massive ultramafic
315	light grey strongly foliated ultramafic
320	fine grained dark grey massive ultramafic
325	massive ultramafic
330	massive ultramafic
335	massive ultramafic
340	massive ultramafic
345	massive ultramafic
350	massive ultramafic
355	massive ultramafic
360	chloritic amygdular (?) ultramafic
365	coarse spinifex
370	coarse spinifex, massive ultramafic
375	massive ultramafic
380	massive ultramafic
385	medium grained spinifex
390	medium spinifex, massive ultramafic
395	coarse spinifex, polysutured ultramafic
400	medium spinifex, polysutured ultramafic
405	massive ultramafic
410	massive hematitic, "bleached" ultramafic
415	fine grained light green mafic
420	massive mafic volcanic
425	variolitic mafic, calcite veinlets
430	variolitic mafic, "splotchy" textured
435	"splotchy" bleached mafic
440	variolitic mafic, "splotchy"
445	variolitic mafic, minor pyrrhotite, chalcopyrite in thin calcite veinlets
450	variolitic mafic, "splotchy"
455	"splotchy" variolitic mafic, minor pyrrhotite, chalcopyrite in calcite veins
460	"splotchy" mafic, some feldspars(?)
465	massive mafic
470	massive foliated mafic
475	massive foliated bleached mafic
480	variolitic (?) "splotchy" mafic
485	fractured mafic
490	massive bleached mafic
495	massive mafic, chalcopyrite, pyrrhotite in quartz vein

<u>FOOTAGE</u>	<u>DESCRIPTION</u>
500	massive mafic
505	massive "splotchy" mafic
510	massive "splotchy" mafic
515	massive mafic
520	"splotchy" mafic
525	fine grained mafic
530	fine grained "splotchy" mafic
535	"splotchy" variolitic mafic
540	"splotchy" mafic, trace chalcopyrite
545	"splotchy" mafic
550	massive ultramafic
555	medium spinifex and massive ultramafic
560	massive ultramafic
565	fine spinifex
570	massive ultramafic
575	massive ultramafic
580	massive ultramafic
585	massive ultramafic
590	coarse spinifex
595	massive ultramafic
600	coarse spinifex
605	coarse-medium grained spinifex
610	medium spinifex
615	coarse-medium grained spinifex
620	medium spinifex, somewhat streaky
625	fine spinifex
630	medium spinifex and massive ultramafic
635	fine spinifex and massive ultramafic
640	medium-coarse grained spinifex
645	massive to foliated ultramafic
650	massive ultramafic
654	massive ultramafic
654	End of Hole

SUMMARY LOG (converted to metric for plotting purposes)

<u>METERAGE</u>	<u>DESCRIPTION</u>
0- 4.9	OVERBURDEN
4.9- 41.1	SPINIFEX TEXTURED ULTRAMAFIC VOLCANIC -some short massive sections
41.1-108.2	MASSIVE ULTRAMAFIC VOLCANIC
108.2-126.5	SPINIFEX TEXTURED ULTRAMAFIC VOLCANIC -some polysuturing and massive sections
126.5-166.1	MASSIVE MAFIC VOLCANIC (KOMATIITIC) -some variolitic and bleached sections -a few quartz and calcite veins with minor pyrrhotite, chalcopyrite
166.1-199.3	SPINIFEX TEXTURED ULTRAMAFIC VOLCANIC -a few massive sections
199.3	END OF HOLE

2. 15071

BREAKDOWN OF ASSESSMENT EXPENDITURES
HEENAN TOWNSHIP PROPERTY
PORCUPINE MINING DIVISION

Claim No. 1133769
Linecutting: 2.5 km @ \$250/km \$ 625
Mag survey: 2.1 km @ \$100/km \$ 210
VLF survey: 2.1 km @ \$100/km \$ 210
Geology: 5 days @ \$250/day \$1250
Analytical Costs* \$ 830
Truck expense 220 km @ \$0.30/km \$ 66

* Analytical Cost Breakdown*

XRAY ASSAY LABORATORIES

Whole Rock: 14 @ \$14 each \$196.00
Rare Earth's: 6 @ \$57 each \$342.00
ICP geochem: 10 @ \$3 each \$ 30.00
Au, Pt, Pd: 2 @ \$9 each \$ 18.00
Sample Prep: 16 @ \$3.50 \$ 56.00
subtotal \$642.00
minus volume discount 16 @ \$1 -\$ 16.00
total \$626.00
prorated sample shipment 18% of \$28.20 \$ 5.08
total \$631.08 \$631.08

ACME ANALYTICAL LABORATORIES

Cu, Ni Analysis: 15 @ \$3 \$ 45.00
Au Analysis: 15 @ \$5 \$ 75.00
Soil Sample Prep: 15 @ \$1 \$ 15.00
Prorated sample shipment: 12.7% of \$40
plus 1 extra sample (\$8.15) \$ 13.23
total \$148.23 \$148.23

GEOPLASTECH INC

Thin sections: 4 @ \$12 each \$ 48.00
Prorated shipping: 21.1% of \$11.85
(\$8.00 + \$3.85) \$ 2.50
total \$ 50.50 \$ 50.50
total \$829.81

RECEIVED
JUN 15 1993
MINING LANDS BRANCH



41016SW9160 2.15071 HEENAN

900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Section
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

September 10, 1993

Our File: 2.15071
Transaction #: W9360.00117

Mining Recorder
Ministry of Northern
Development and Mines
60 Wilson Avenue
1st Floor
Timmins, Ontario
P4N 2S7

Dear Sir/Madam:

**Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIM
P1133769 IN HEENAN TOWNSHIP**

The assessment work credits for Geology, Section 12, Geophysics, Section 14 and Assays, Section 17 of the Mining Act Regulations, have been approved as outlined on the original submission.

The approval date is August 25, 1993.

If you have any questions regarding this correspondence, please contact Lucille Jerome at (705) 670-5855.

Yours sincerely,

Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

LJ/dm

cc: Resident Geologist
Timmins, Ontario

Assessment Files Library ✓
Toronto, Ontario

**Report of Work Conducted
 After Recording Claim**
 Mining Act

M.L.

Transaction Number
W9360.00117
2.15071

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

- Instructions:**
- Please type or print and submit in duplicate.
 - Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the Mining Recorder.
 - A separate copy of this form must be completed for each Work Group.
 - Technical reports and maps must accompany this form in duplicate.
 - A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s) DAVID VICTOR MULLEN		Client No. 173713
Address 735 MELROSE BLVD TIMMINS ONTARIO P4N 5H9		Telephone No. (705) 264-5916
Mining Division PORCUPINE	Township/Area HEENAN TWP	M or G Plan No. M-925
Dates Work Performed From: JULY 7, 1992		To: MAY 31, 1993

Work Performed (Check One Work Group Only)

Work Group	Type
<input checked="" type="checkbox"/> Geotechnical Survey	GEOPHYSICS (2), GEOLOGY, LINECUTTING, GEOCHEMISTRY
<input type="checkbox"/> Physical Work, Including Drilling	
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

RECEIVED

JUN 15 1993

MINING LANDS DIVISION

Total Assessment Work Claimed on the Attached Statement of Costs \$ 3900

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
DAVID MULLEN	AS ABOVE

RECORDED

JUN 03 1993

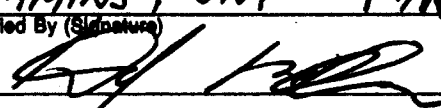
Receipt _____

(attach a schedule if necessary)

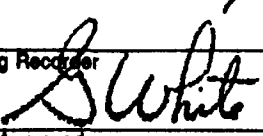
Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date	Recorded Holder or Agent (Signature)

Certification of Work Report

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying DAVID V MULLEN 735 MELROSE BLVD TIMMINS, ONT P4N 5H9		
Telephone No. (705) 264-5916	Date JUNE 3/93	Certified By (Signature) 

For Office Use Only

Total Value Cr. Recorded \$3,900.	Date Recorded JUNE 3/93	Mining Recorder 	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">RECEIVED</p> <p style="text-align: center;">JUN 3 1993</p> <p style="text-align: center; font-size: 0.8em;">@Lisan/Cd</p> </div>
	Deemed Approval Date SEPT. 1/93	Date Approved	
	Date Notice for Amendments Sent		



Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction

9360.00/17

2.15071

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4^e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert- conseil	Type GEOPHYSICS / LINECUTTING	1045	
	GEOLOGY	1250	2295
Supplies Used Fournitures utilisées	Type ANALYTICAL SUPPLIES	830	
	EXPLOSIVES	78.50	
			908.50
Equipment Rental Location de matériel	Type BOAT	57.47	
			57.47
Total Direct Costs Total des coûts directs			3261

2. Indirect Costs/Coûts indirects

** Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work.
Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type AIRFARE	380.96	
	TRUCK	66	
Food and Lodging Nourriture et hébergement	CABIN RENTAL	191.57	
Mobilization and Demobilization Mobilisation et démobilisation			
Sub Total of Indirect Costs Total partiel des coûts indirects			639.09
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'exécédant pas 20 % des coûts directs)			658.51
Total Value of Assessment Credit (Total of Direct and Allowable Indirect costs)			3919.51
Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)			3919.51

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment all or part of the assessment work submitted.

Note: Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	x 0.50 =

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Evaluation totale demandée
	x 0,50 =

Certification Verifying Statement of Costs

I hereby certify: that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as RECORDED HOLDER I am authorized (Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

J'atteste par la présente : que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ je suis autorisé (titulaire enregistré, représentant, poste occupé dans la compagnie)

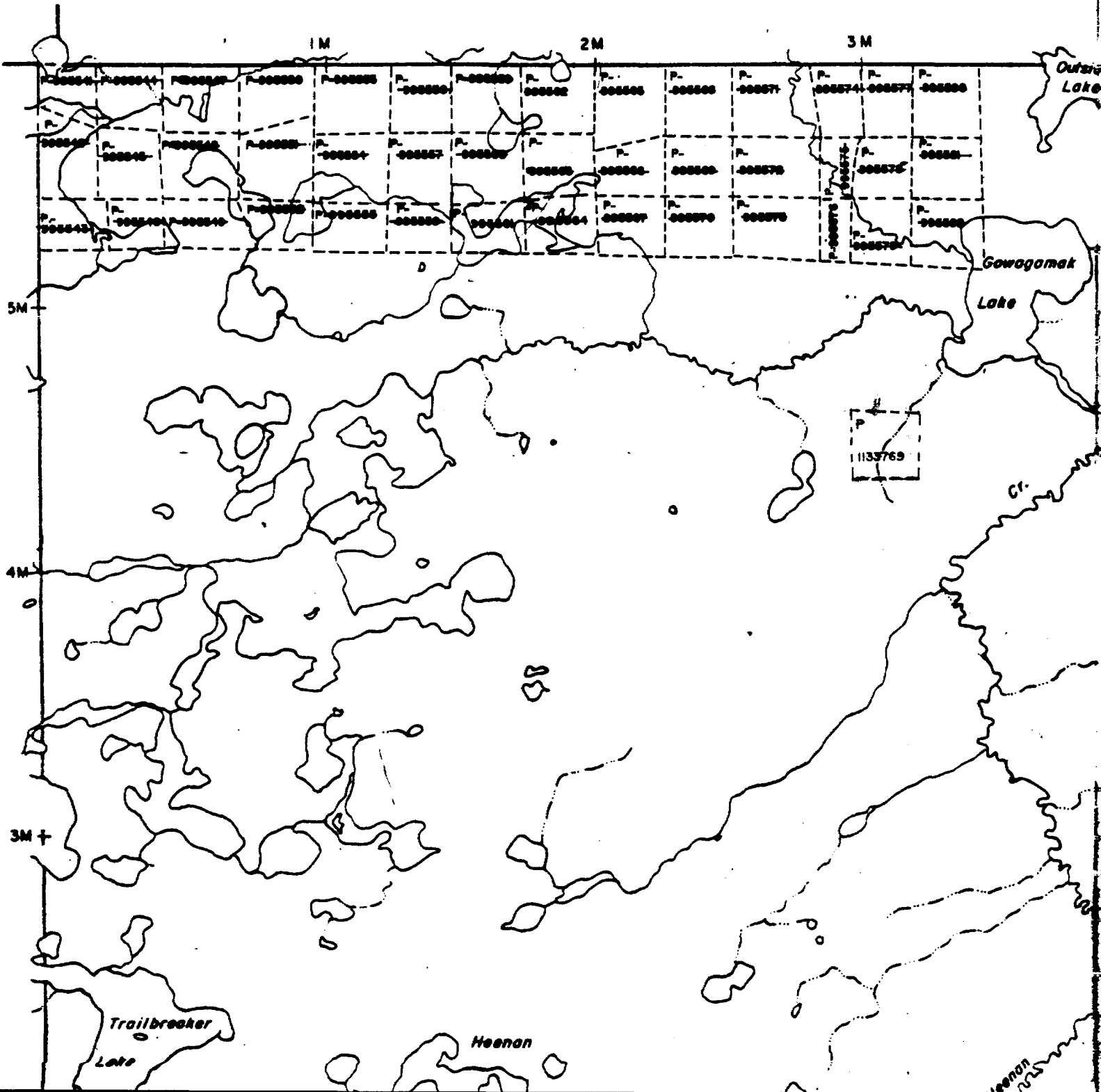
à faire cette attestation.

Signature  Date JUNE 3/93

HEENAN

2. 15071

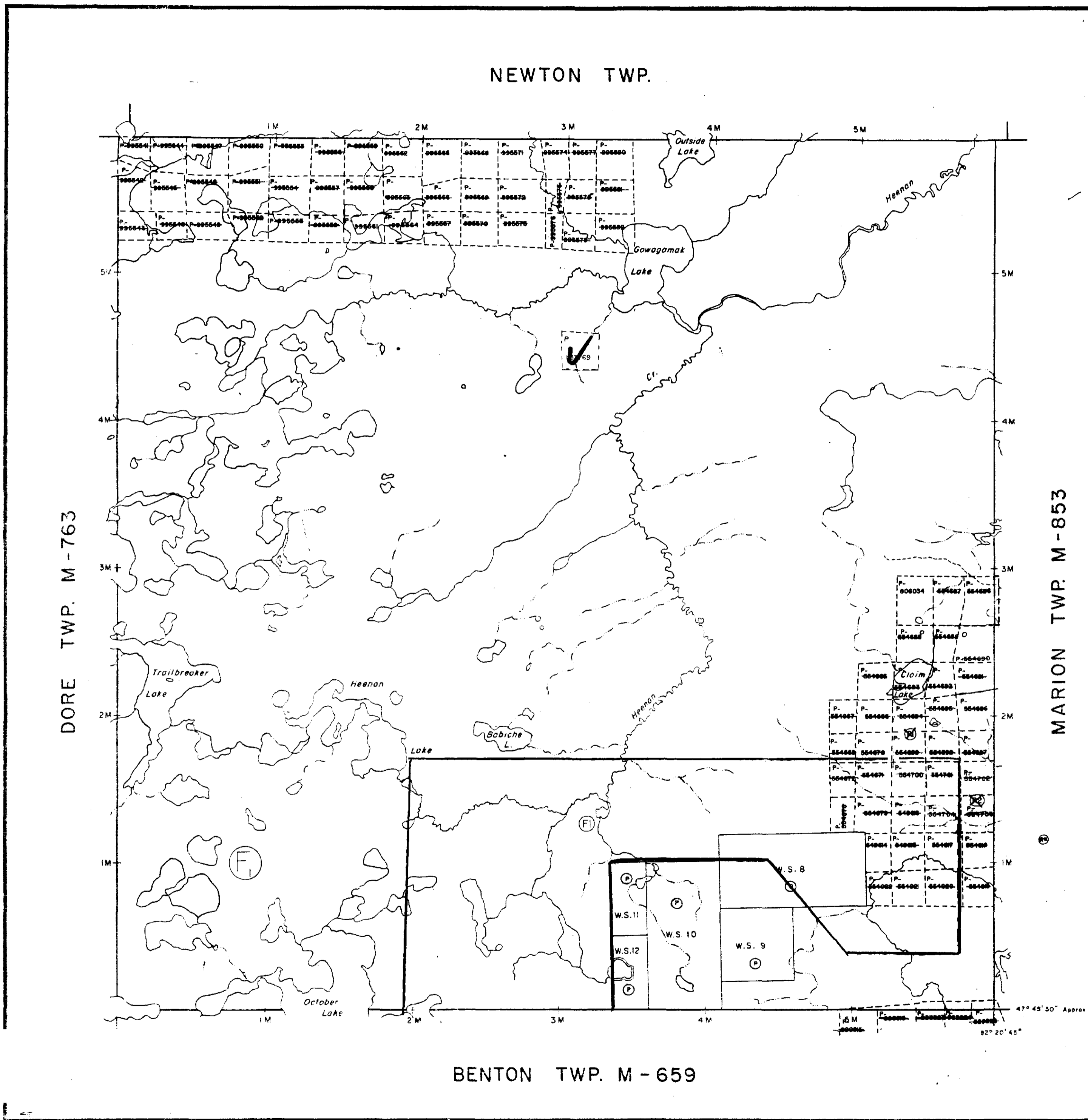
NEWTON TWP.



250-M

HEENAN TWP.

250-M



NEWTON TWP.

THE TOWNSHIP OF

HEENAN

RECEIVED

JUN 14 1989 DISTRICT 9. 15071 SUDBURY

SUDBURY MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.D.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKEG	—
MINES	Ⓜ
CANCELLED	Ⓧ

NOTES

400' Surface rights reservation around the shores of all lakes and rivers.

Ⓜ MINING AND SURFACE RIGHTS WITHDRAWN FROM STAKING UNDER SECTION 38 OF THE MINING ACT R.S.O. 1990 ORDER NO. W00786 DATED 86-MAY-21

Ⓛ MINING AND SURFACE RIGHTS WITHDRAWN FROM STAKING UNDER SECTION 38 OF THE MINING ACT R.S.O. 1990 ORDER NO. W8197 (LOCAL FILE NRW 5167) DATED 87-FEB-03

F THIS TWP. IS SUBJECT TO FOREST ACTIVITIES IN 1952/93. FURTHER INFORMATION AVAILABLE ON FILE.

Ⓟ SURFACE AND MINING RIGHTS RE-OPENED TO PROSPECTING, STAKING, OUT. SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 EFFECTIVE 92-MAY-03 AT 7:00 AM E.S.T. ORDER NO. O.P. 8192 HER DATED 92-APR-15

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

CHECKED BY D. CHOLETTE IN SERVICE OCT. 24/89

PLAN NO. M-925

ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS

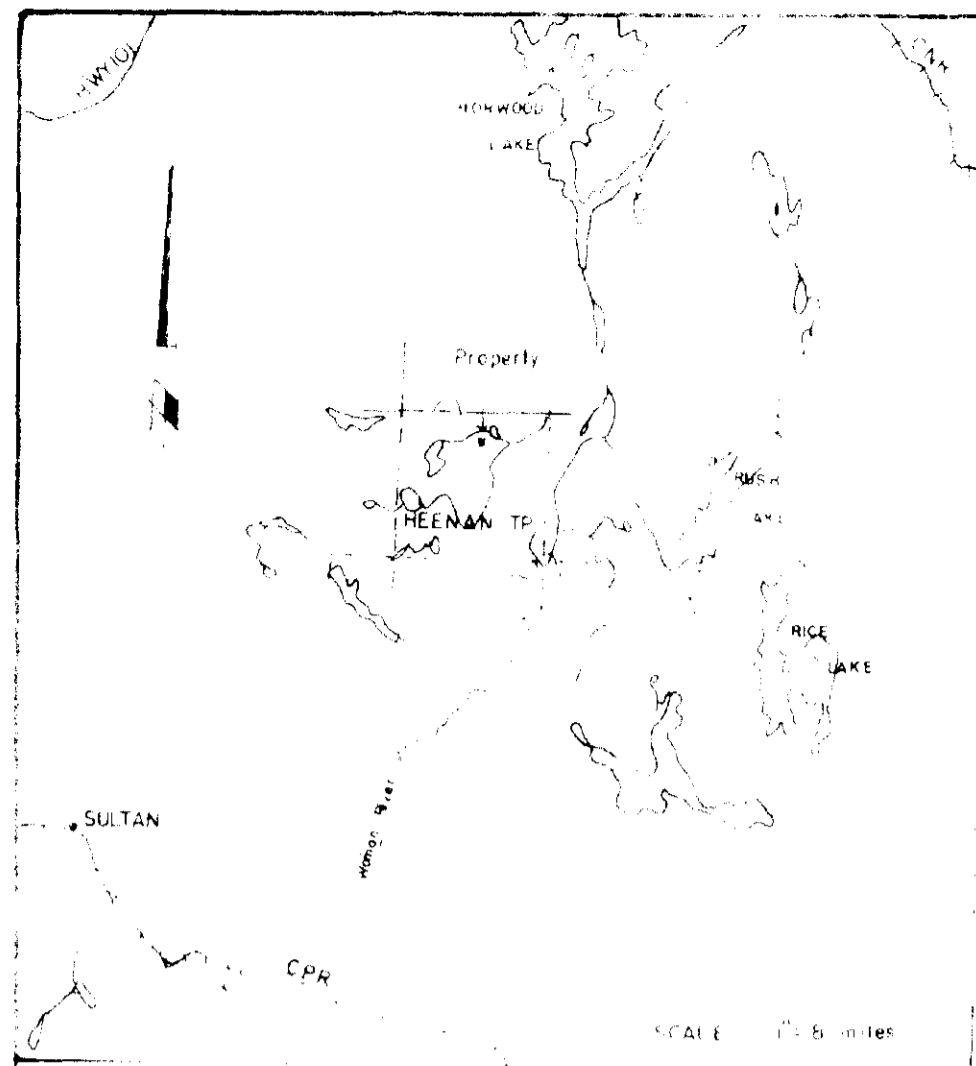
BENTON TWP. M - 659



250-M

HEENAN TWP.

250-M



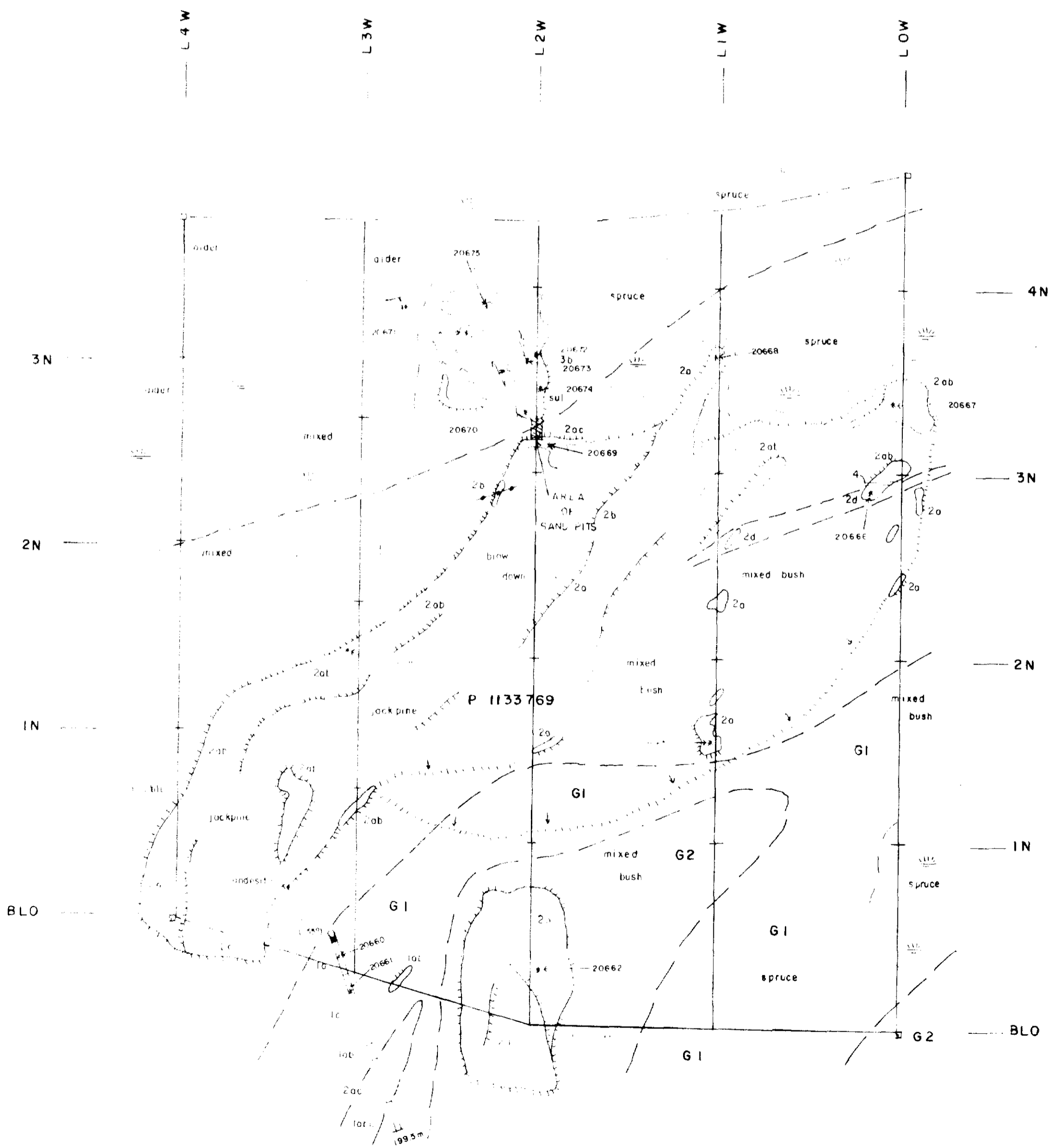
GOWAGAMAK
LAKE



LEGEND

- 4** MAFIC DYKES
 - 3** LAYERED MAFIC INTRUSION
 - a gabbro
 - b anorthosite
 - c fine grained (chilled)
 - 2** KOMATIITIC BASALT
 - a massive
 - b pillowed, polysutured
 - c variolitic
 - d spinifex-textured (pyroxene)
 - 1** KOMATIITE
 - a spinifex-textured (olivine)
 - b polysutured
 - c massive
- sul sulphides G geophysical interpretation

- igneous layering
- flow contact
- faulting
- geological contact
- outcrop with cliff
- slope
- swamp
- claim post
- drill hole
- sample location



2. 15071

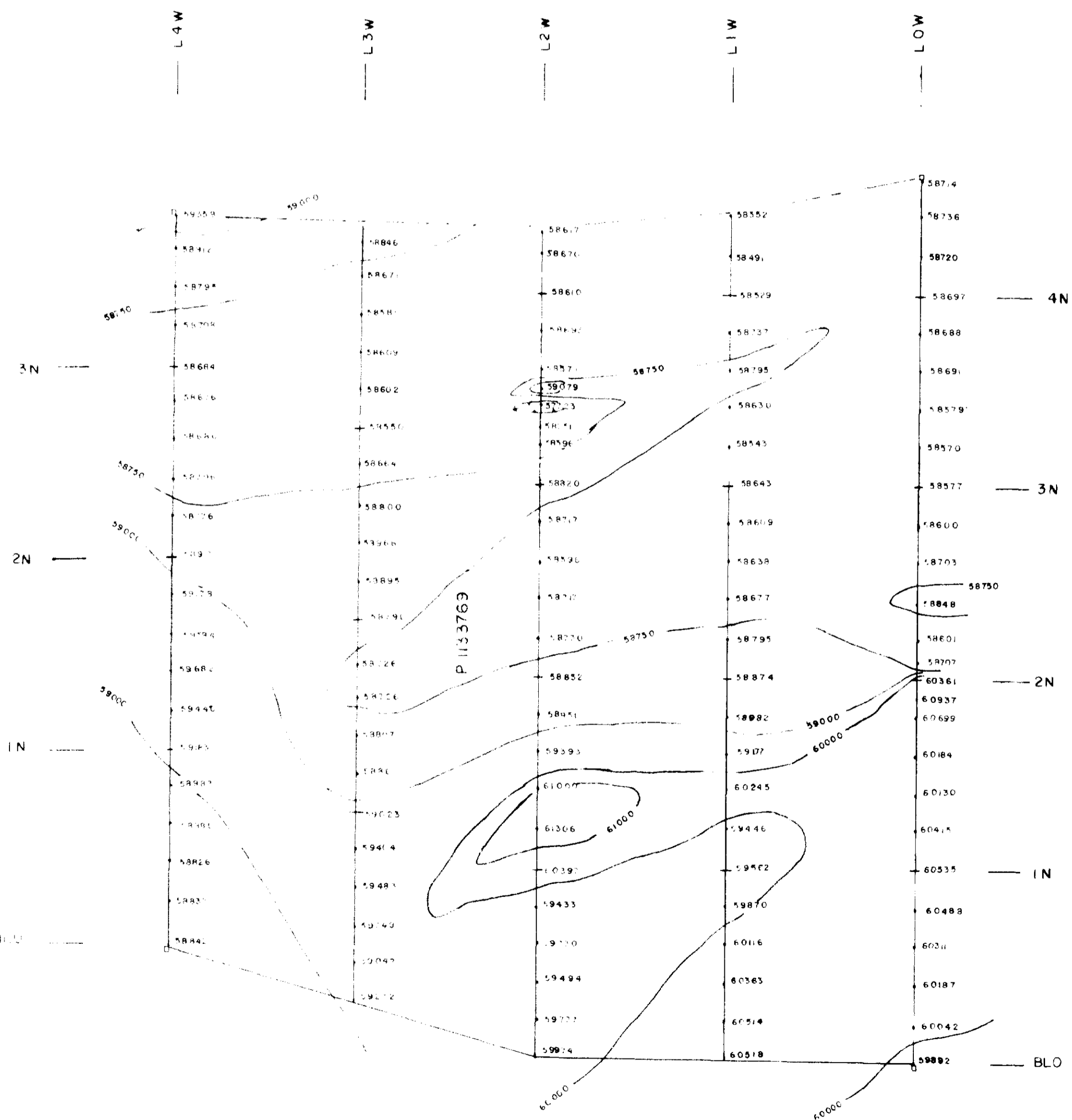
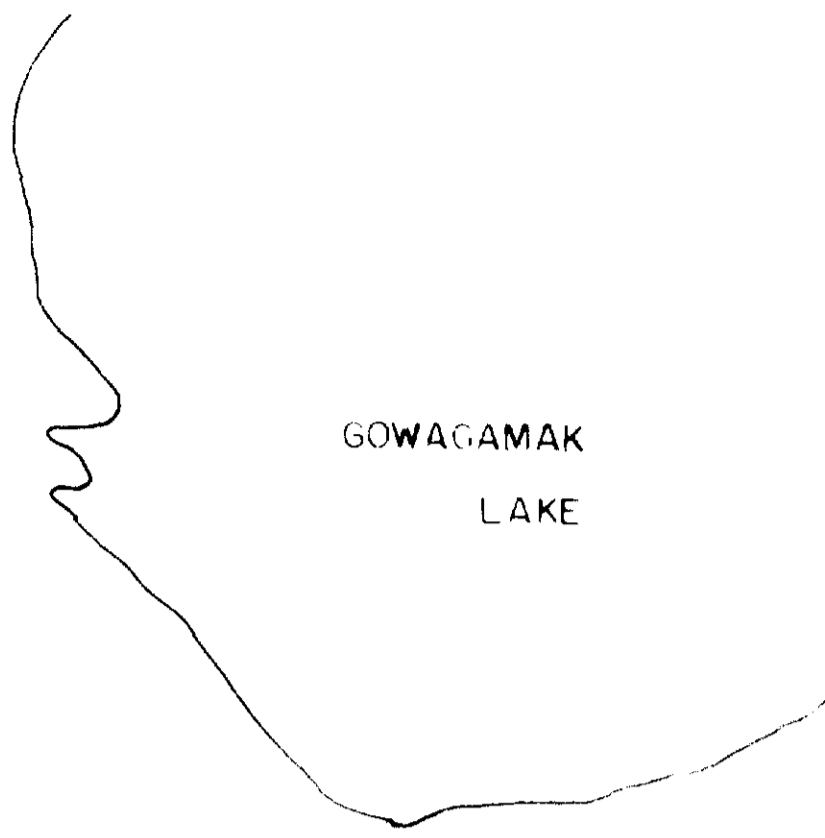
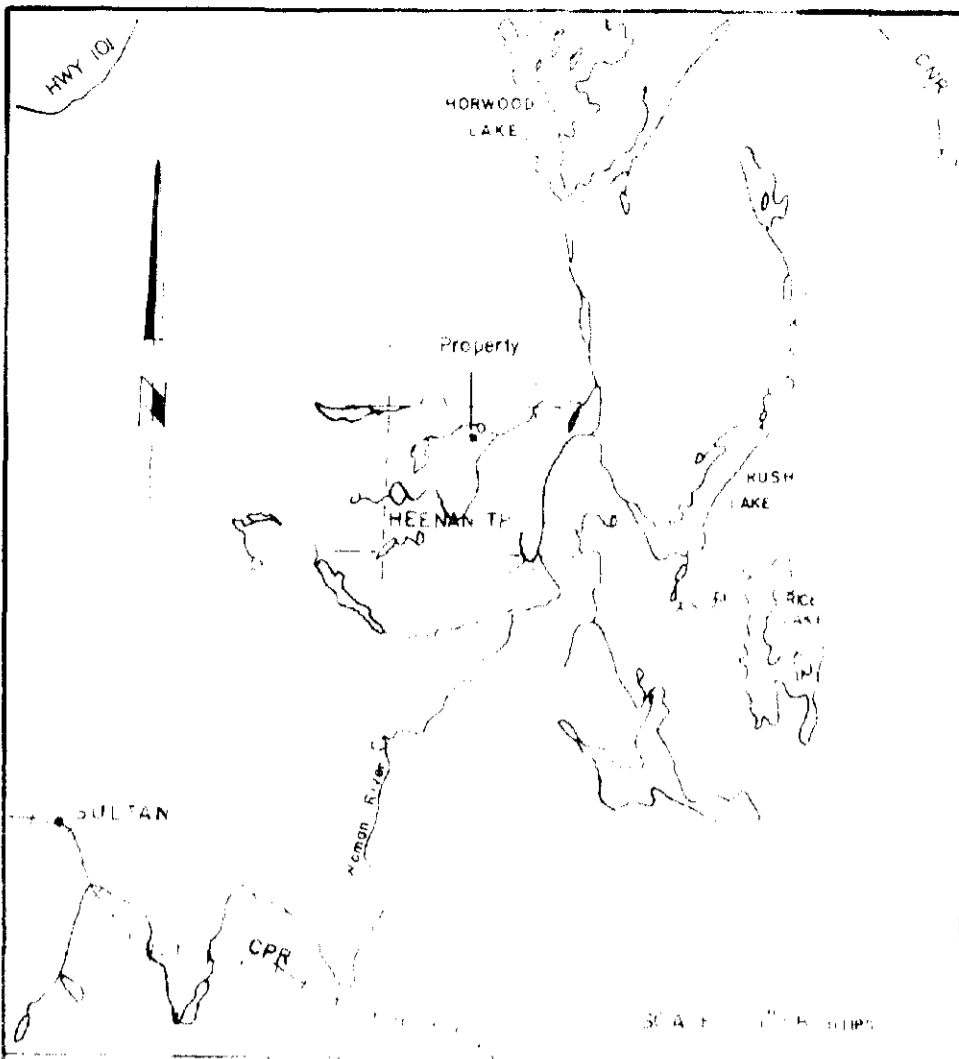
HEENAN TWP. PROPERTY

GEOLOGY and
SAMPLE LOCATIONS

Scale: 1:50,000
Date: Dec 21, 1992
Drawn: D.M.



D.M.



INSTRUMENT: BARRINGER GM-122
 TYPE: Total Field Proton Precession
 readings in gammas

2.15071

HEENAN TWP PROPERTY

MAGNETIC SURVEY

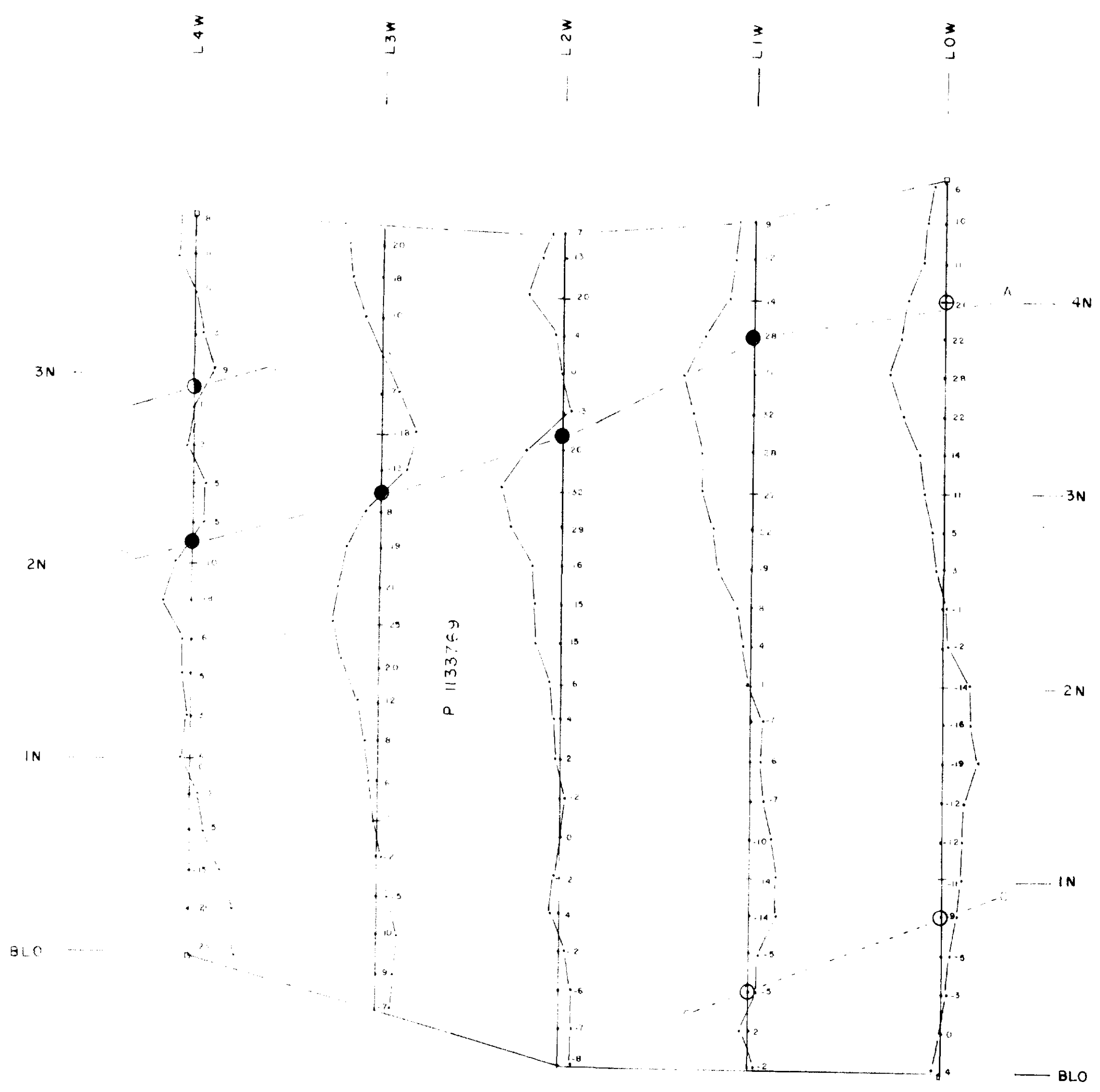
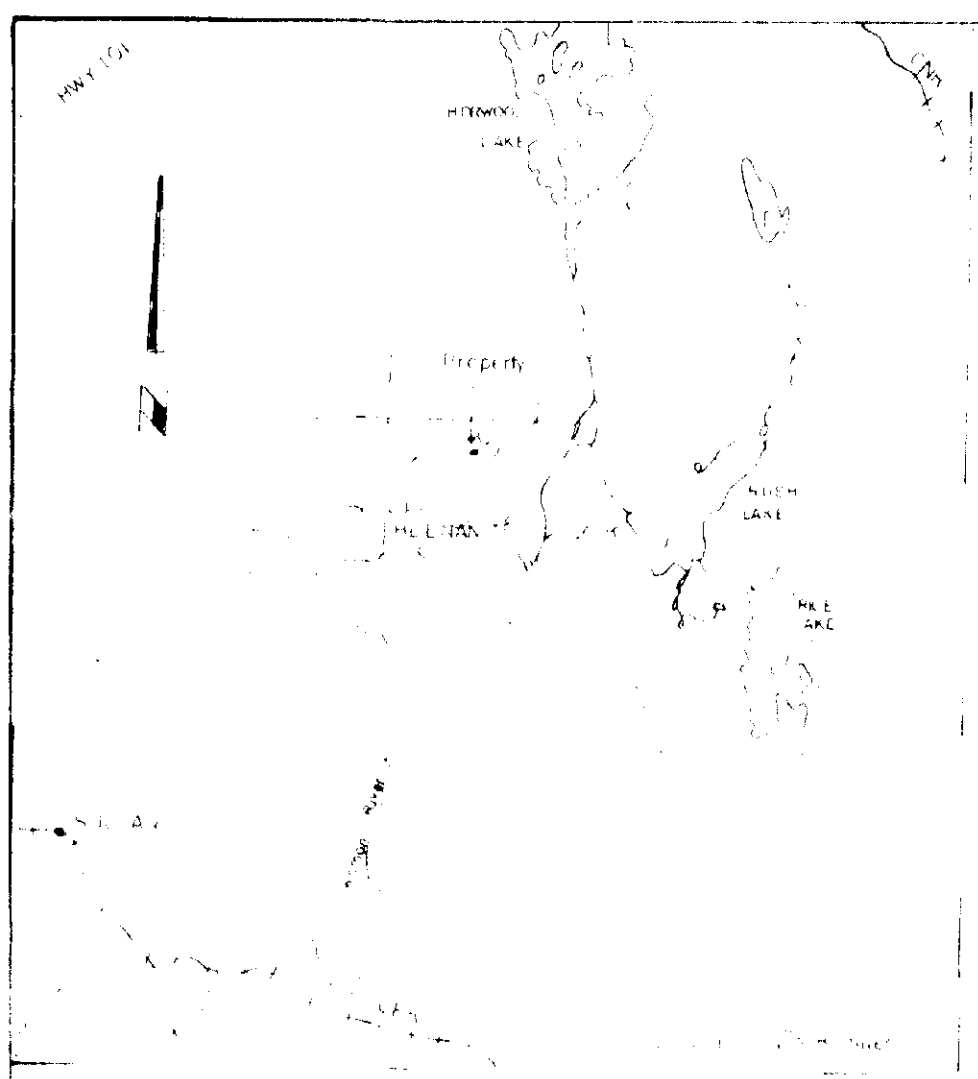


410165W6162 2.15071 HEENAN

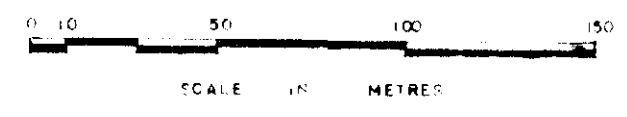
220

D/He

SCALE	1:2000	DATE	1994
PAGE	1	NO.	1



INSTRUMENT: Crone Radem
 Tx STATION: Cutler, Maine
 FREQUENCY: 24 kHz
 PROFILE SCALE: 1cm = 20°
 OPERATOR: FACING EAST
 ● strong
 ◐ moderate
 ○ weak
 negative values = north dips



2.15071

HEENAN TWP PROPERTY

VLF-EM SURVEY

SCALE: 1:2000	DATE: 1/24/1992
DATE: 1/24/1992	SCALE: 1:2000

Orler

