



010

GEOLOGICAL REPORT
 on the property of
GLEN AUDEN RESOURCES LIMITED
 Groundhog Claims, Keith Township
 District of Sudbury
 Porcupine Mining Division, Ontario
 by
 Margaretha Zeeman, B.Sc.
 October 31, 1988

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SUMMARY

From July 17 to October 10, 1988 a geological mapping program was carried out on Glen Auden Resources Limited's 63 contiguous claims in northwestern Keith Township. The mapping supports K.V. Prest's geological interpretation of this area. Eighty-two rock samples were collected and analysed for gold and 27 other trace elements plus selected samples underwent wholerock analyses. Six samples had anomalous gold values between 31 and 130 ppb and eight samples had anomalous arsenic values between 110 and 680 ppm. The anomalous gold and arsenic values came from a sequence of carbonatized and foliated mafic and ultramafic volcanic rocks which straddle the CN railway tracks. Further exploration work consisting of an induced polarization survey and soil sample survey is recommended in this area. A re-examination and resampling of drill core from previous drilling on the present Glen Auden property and stored in the regional core library in Timmins, Ontario is also recommended. A budget of \$60,200 is proposed to complete this second phase of gold exploration on the property.

INTRODUCTION

A geological mapping program was carried out on Glen Auden Resources Limited property from July 17 to October 10, 1988. The property is located in Keith Township, Porcupine Mining Division, Ontario approximately eighty-five kilometers southwest of Timmins, Ontario (See Figure 1).

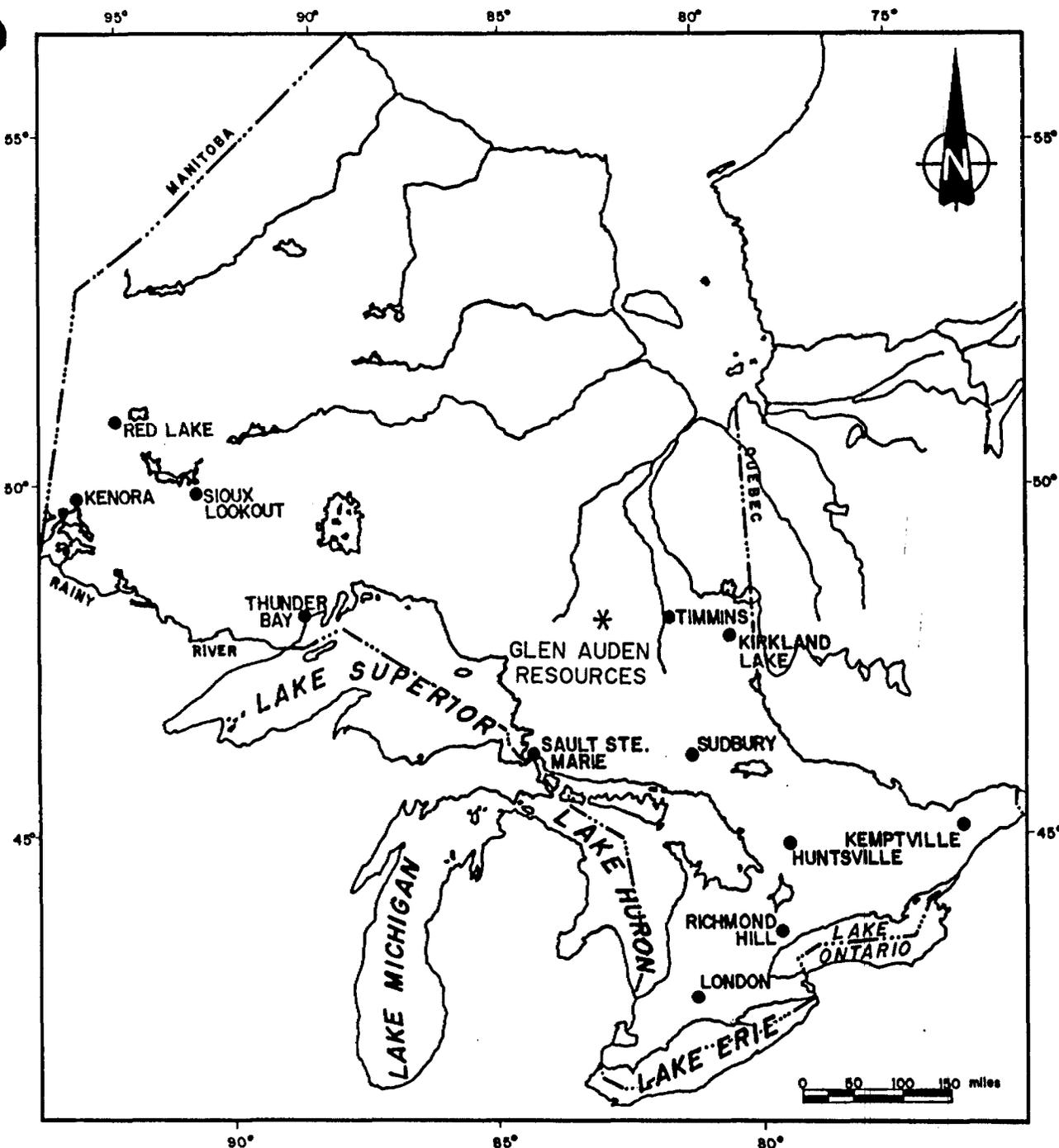
Access to the Glen Auden Resources Limited property is via the Groundhog River and Groundhog Lake, both of which may be accessed via Highway 101.

Mapping was accomplished by following claim lines and pace and compass traverses transecting the claims. Rock grab samples were routinely collected and sent to X-Ray Assay Laboratories, Toronto for geochemical analysis. All the samples were analysed for gold and 27 other trace elements by the neutron activation method. Several samples were also collected for wholerock analyses.

The objective of this mapping program was to systematically survey the property for its prospective gold potential.

PROPERTY DESCRIPTION

The Glen Auden Resources Limited property consists of sixty-three contiguous claims, the majority of which are situated between the Groundhog River and the eastern boundary of Keith Township (see Figure 2). The claim block covers an area of



PROVINCE OF ONTARIO

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for	GLEN AUDEN RESOURCES LTD.	
	Title	PROPERTY LOCATION MAP	
		Fig. 1	
	Date:	Scale: 1" = 160mi.	N.T.S.:
	Drawn:	Approved:	File: M-310

approximately six kilometers north-south by two kilometers east-west. The southern part of the property is transected by the CN railway tracks. The claim numbers and respective expiry dates are listed below.

<u>CLAIM NUMBERS</u>	<u>NO.</u>	<u>TOWNSHIP</u>	<u>DUE DATE</u>
1035686-715	30	Keith	May 16, 1989
1035717-738	22	Keith	May 16, 1989
1035740	1	Keith	May 16, 1989
1035785-786	2	Keith	May 16, 1989
1071623-626	4	Keith	May 16, 1989
1087290-293	4	Keith	September 27, 1989

There is generally little topographic relief on the property. Vegetation on the property is mainly open mixed forest of poplar, birch, balsam, spruce and stripped maple with a few swampy areas of cedars and tag alders. Most of the property is covered by glacial overburden, with bedrock exposures occurring predominantly in the central sector, particularly along the CN railway tracks. A few outcrops occur along the banks of the Groundhog River.

EXPLORATION HISTORY

The earliest recorded geological work done in the area of the property dates back to 1899 when W.A. Parks, a geologist from the Ontario Bureau of Mines, mapped the region around Horwood and Ivanhoe Lakes. Other government geologists who have reported on the geology in what is now eastern Keith Township include W.G.

Miller (1902), T.L. Tanton (1916), E.W. Todd (1924), and K.V. Prest, whose work conducted in 1947 has been the most detailed to date.

In 1946, the first recorded private exploration work was carried out by Consolidated Mining and Smelting Company on four patented claims adjacent to, and west of the Glen Auden Resources Limited property. These claims numbered as S2450, S2451, S2452 and S2453 were mapped as being underlain by andesite and rhyolite, with an east-west trending iron formation over 200 feet wide being located at the bend in the Groundhog River. Andesite with strong shearing and a nearby diabase outcropping were mapped in the southeast corner of claim S2452.

In 1946, Hoyle Mining Company drilled six diamond drill holes on the present Glen Auden claim numbers 1035717, 1071623 and 1035724. In 1947 they transferred their property to Keith Gold Mines Limited. From the Ontario Government Assessment Files, Report #T-73, the diamond drill hole identified as KG#4 on Groundhog Geology Map, South Sheet, of this report yielded samples which assayed trace to .005 oz/ton Au. The diamond drill hole labelled KG#6 on Groundhog Geology Map, South Sheet, intersected a 26 foot wide quartz-carbonate vein hosted by andesite which assayed .01 oz/ton Au. Core sections from drill holes KG-2, KG-4 and KG-7 are stored in the regional core library in Timmins, Ontario.

In 1947, Purdy Mica Mines Ltd. drilled ten holes east of the Groundhog River, nine of which were collared north of the railway tracks on the present Glen Auden Resources Limited claim numbers 1087293, 1035694 and 1035695. The tenth hole was drilled on a due south azimuth in the northeast corner of claim 1035701 immediately south of the railway tracks. A detailed geology map was produced based on this drilling and outcrops in the area of the drilling. The Purdy Mica Mines diamond drill hole labelled PM#1 on the Groundhog Drill Hole Location Map, drilled south of the railway tracks, is the only hole which reports a drill section with assays. A 5 foot sample of weakly sheared basic lava apparently assayed .005 oz/ton Au.

Sometime between 1947 and 1955, Purdy Mica Mines drilled up to fifteen diamond drill holes just south of the railway tracks near the Groundhog River on present Glen Auden claim numbers 1087290, 1087291 and 1087292. Drill core logs are available for only four of these holes that were logged by the resident geologist and are now available in the regional core library in Timmins. These holes intersected mainly andesite which is locally carboitized and mineralized with pyrite, pyrrhotite and minor amounts of chalcopyrite. Gold assays are not reported.

The Canadian Pacific Railway, which once held part of the present Glen Auden Resources property, drilled three diamond drill holes, on the west side of the Groundhog River, but not on

the present Glen Auden property.

A magnetometer survey was conducted by Algoma Ore Properties Ltd. in 1960 on the west side of the Groundhog River north of the railway tracks. The company also drilled two holes, one on the west side of the river and the other on the east side. Hole 1A, labelled A#1A on Groundhog Geology Map, South Sheet, on the east side of the river (claim number 1071623), intersected banded iron formation throughout the hole. The core from this hole is stored in the southwest corner of patented claim number S2450, 200 feet from the river.

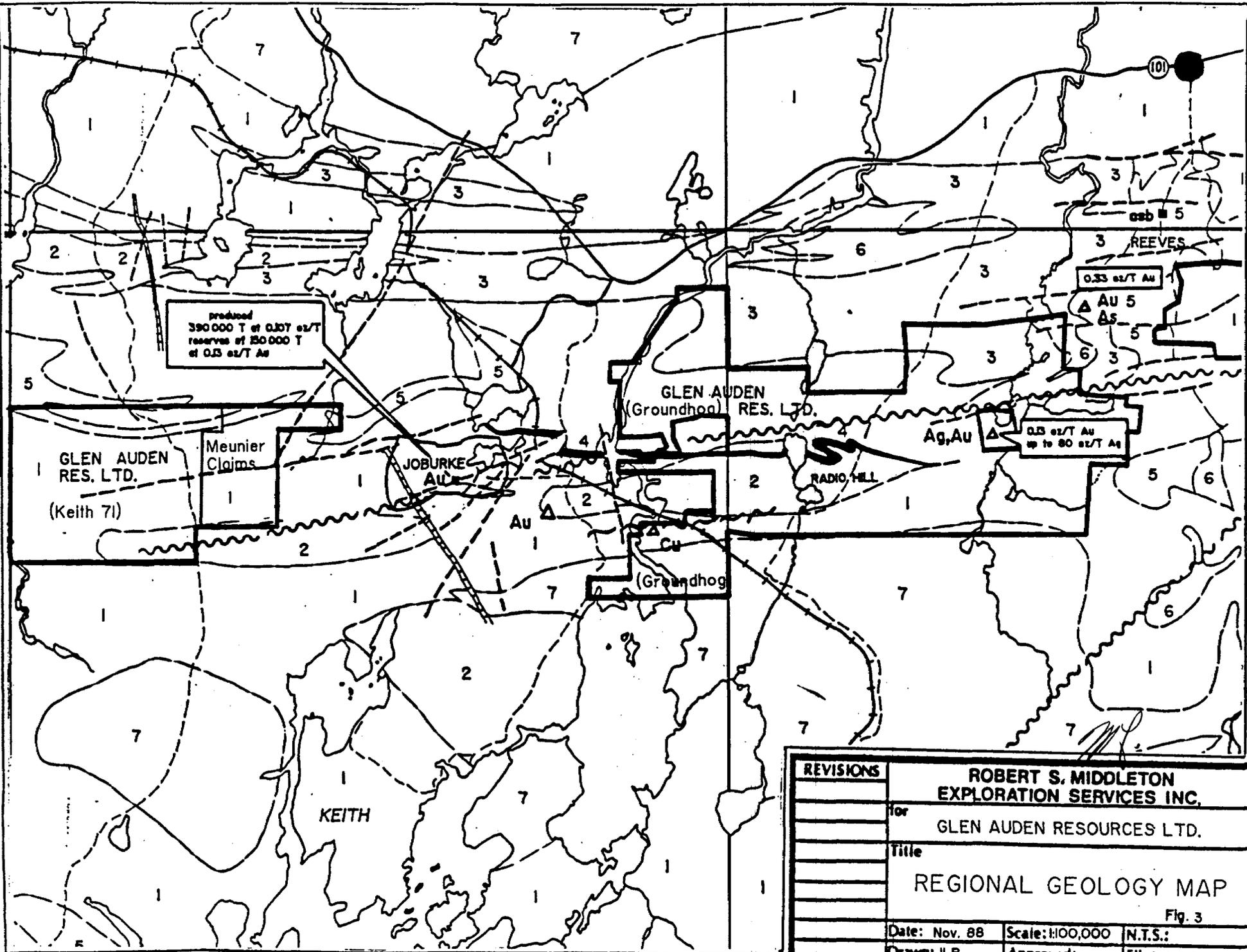
In 1966, Kukatush Mining Corporation Ltd. diamond drilled four holes, two of which were drilled on the present Glen Auden Resources Limited property. Drill hole K-7, labelled KM#7 on Groundhog Geology Map, North Sheet, and located on present claim number 1035740, intersected andesite at the top of the hole and rhyolite at the bottom. No significant mineralization was apparently encountered. Diamond drill hole K-9, identified as KM#9 on Groundhog Geology Map, South Sheet, and located on Glen Auden's claim number 1087293, intersected chloritic diorite in the top half and tuffaceous rock in the lower half of the hole. A 22 foot section of the tuff, which may be a misidentified carbonate alteration zone, contained blue quartz and fine pyrite, but again no assays were reported. All of the Kukatush drill core described here is stored at the core library in Timmins.

Dome Exploration in 1980 conducted a ground magnetometer survey over their property which included the northern portion of the present Glen Auden property. A very strong magnetic high trending east-northeast and widening eastwards was outlined. The source of the magnetic anomaly was interpreted to be magnetic iron formation, which coincides with a unit of banded iron formation that outcrops on the east side of the Groundhog River on Glen Auden's claim number 1035785.

REGIONAL GEOLOGY

The Glen Auden Resources Limited property is situated within the northern part of the Swayze Greenstone Belt. The dominant rock types in this region are mafic to intermediate volcanic rocks with minor felsic volcanic assemblages (see Figure 3). East-west trending sediments and iron formations run across the northern part of the region. Two large granitoid plutons intrude the volcanic and sedimentary rocks towards the south.

A major east-west trending shear zone cuts through the northern part of the area, in part paralleling a major iron formation. Several faults parallel and splay off from this shear zone. In and near this major shear zone are several gold showings, one of which developed into the Joburke Mine a few kilometers west of Glen Auden's property (see Figure 2). The Joburke Mine, presently being re-examined by Noranda Mines Ltd.,



REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for	GLEN AUDEN RESOURCES LTD.	
	Title	REGIONAL GEOLOGY MAP	
		Fig. 3	
	Date: Nov. 88	Scale: 1:100,000	N.T.S.:
	Drawn: JLB	Approved:	File: M-310

has produced 390,000 tons at 0.107 oz/ton and has reserves of 150,000 tons of 0.13 oz/ton.

The metamorphic grade is of greenschist facies.

PROPERTY GEOLOGY

The recent mapping program essentially supports K.V. Prest's (1950) interpretation of the geology for the area of Glen Auden's property. The geology of the property is only detailed in the central part due to lack of bedrock exposure elsewhere.

Based on previous mapping, diamond drilling and magnetometer surveying the northern and central portion of the Glen Auden property is underlain by mafic to intermediate volcanic rocks which strike east-west. Two east-west striking magnetite iron formations occur within this belt of mafic to intermediate flows. Based on Dome Exploration's magnetometer survey the northernmost iron formation appears to thicken towards the east. The south iron formation unit crosses the Glen Auden property where it is a single claim wide (no.1071623) and is well exposed on the east bank of the Groundhog River on patented claim numbers S2450 and S2451. K.V. Prest shows this iron formation as being fault displaced on Glen Auden's property (see map 1950-4, Prest, 1950).

Medium grained mafic rocks in the areas discussed above may represent synvolcanic intrusions or slowly cooled sections of thick flows.

The area around the CN Railway tracks has the greatest abundance of outcrops on Glen Auden's property. An east-west striking sequence of mafic volcanic rock, up to 700 meters wide, is well exposed in this area. South of the railway tracks on claim numbers 1087290, 1087291 and 1087292 there are several outcrops of moderately to strongly foliated mafic flow rock which is locally strongly altered by iron carbonate. A westerly striking felsic dyke, in which a number of exposures consists of quartz-feldspar porphyry, intrudes the foliated and carbonatized volcanic rock. Zones of disseminated iron sulfide mineralization as well as several pods of massive pyrrhotite containing minor amounts of chalcopyrite occur along the margins of the felsic dyke. A great deal of work has been done in this area with numerous trenches and a shallow shaft on claim number 1087291. North of the railway tracks the sequence of mafic volcanic rock contains units of possible ultramafic rock consisting of talc, carbonate and minor local green mica alteration. A great deal of diamond drilling has been done by Purdy Mica Mines in this area.

Between the two areas of mafic volcanic rocks lies an 800 meter wide sequence of intermediate to felsic extrusive rock and is shown best on Prest's map 1950-4. On claims adjoining the west boundary of the Glen Auden property there are outcrops of agglomerate and bedded tuffs as well as flow units.

The southern portion of Glen Auden's property appears to be

underlain by a granodiorite pluton.

MINERALIZATION AND ALTERATION

82 rock samples were collected from Glen Auden's property and were analyzed for gold and 27 trace elements by X-Ray Assay Laboratories of Toronto using the neutron activation method.

Six samples had anomalous gold values between 31 and 130 ppb gold. These samples were from the zone of strong iron carbonate alteration and sulfide mineralization on claim numbers 1087290 and 1087291. Refer to Table 1 for descriptions of these samples.

Anomalous concentrations of arsenic were found in eight samples taken from talc-chlorite schist, i.e., altered ultramafic rock, quartz-feldspar porphyry dyke rock and a magnetic diorite located within the sequence of carbonatized and foliated mafic and ultramafic rocks which straddle the CN railway tracks. The anomalous arsenic values varied from 110 to 780 ppm As. Refer to Table 2 for descriptions of these samples.

CONCLUSIONS

1. High strain deformation and hydrothermal alteration is most prominent in the south-central portion of Glen Auden's property within a westerly trending zone 200-300 meters wide in the vicinity of the CN railway tracks. Outcrops of mafic and possibly ultramafic volcanic rock are commonly talcose and/or chloritic and show moderate to strong degrees of iron carbonatization. Minor amounts of green chromium mica (fuchsite) occurs in talc-bearing rocks. On a regional sense, these rocks and the intermediate to felsic volcanic rocks to the north appear to correlate with the litho-

T A B L E 2
S A M P L E D E S C R I P T I O N S

SAMPLE NO.	CLAIM NO.	PPM AS	SAMPLE DESCRIPTION
8368	1035695	780	Moderately magnetic diorite with quartz stringers
8378	1087291	310	Sericite-chlorite-talc schist with strong fe-carbonate alteration
8384	1035694	110	Talc-chlorite schist with trace pyrite.
8329	1035695	560	Carbonatized ultramafic rock with strong fe-carbonate alteration, strong pervasive calcium-carbonate alteration, localized moderate green mica alteration and trace pyrite.
8330	1035695	310	Talc-chlorite schist with moderate to strong fe-carbonate alteration.
8331	1087293	680	Quartz-carbonate vein parted by ankerite and green mica, no visible sulfides.
8336	1035736	520	Quartz feldspar porphyry with quartz veins with fe-carbonate halo, green mica partings and weak talc alteration, no visible sulfides.

T A B L E 1
S A M P L E D E S C R I P T I O N S

SAMPLE NO.	CLAIM NO.	PPB AU	SAMPLE DESCRIPTION
8361	1087291	130	From pit with strong fe-carbonate alteration of mafic volcanic rock with pyrite lenses (20-25% py).
8363	1087290	91	Intermediate to mafic volcanic rock with weak to moderate localized fe-carbonate alteration and trace pyrite.
8376	1087291	31	From shaft with massive pyrrhotite and 2-3% pyrite.
8380	1087291	61	From pit of quartz-feldspar porphyry with strong fe-carbonate alteration, 40% black-grey graphite mylonite and 10-15% pyrite.
8381	1087290	51	Strongly foliated mafic volcanic rock with moderate pervasive calcium carbonate alteration and dolomite stringers.
8385	1087290	82	Mafic volcanic, strongly gossaned with 10-15% localized pyrite.

stratigraphic sequence of rocks found at the Joburke gold mine, located a few kilometers west of the property.

2. A dyke of felsic rock, locally displaying a quartz-feldspar porphyritic texture, has intruded the carbonatized mafic and ultramafic rocks. The dyke is carbonatized and weakly pyritic. Small pods or zones of iron sulfide mineralization, both disseminated and massive, occur at the margins of the dyke. The dyke strikes in an east-west direction and has been traced along strike for more than 1500 meters.
3. Samples from carbonatized and, to varying degrees pyritic rock yielded barely anomalous amounts of gold. The highest assay value obtained was 130 ppb gold. Eight samples from similarly altered and mineralized rock contain anomalous amounts of As, the highest value being 780 ppm As. Samples with high gold values did not correlate with those samples of high arsenic values.
4. Two diamond drill hole intersections in the central part of the property on claim numbers 1071623 and 1035724 yielded samples which assayed .005 oz/ton gold and .01 oz/ton gold. One to ten percent disseminated pyrite occurred within most of these samples. One sample which yielded .01 oz/ton gold was a quartz-carbonate vein with no visible sulfides.
5. The absence of alteration and deformation zones elsewhere on the property may simply be a function of the scarcity of outcrops for large areas of the property.

RECOMMENDATIONS

It is recommended that future exploration on the Groundhog property be concentrated on the sequence of rocks which show pervasive carbonate alteration, localized sulfide mineralization, and which were determined to contain anomalous gold and arsenic values. Another proposal is that the contact zone between ductily deformed mafic and ultramafic rocks and acid volcanic rocks constitutes a prospective area for gold mineralization.

The structural competency contrast between the two volcanic sequences is conducive to the formation of dilatant structures, i.e., eventual vein systems. The following recommendations are proposed:

1. Lincutting with a grid of 22 km covering the central portion of the property and lines spaced at 100m intervals. The trend of the lines would be north-south to cross the stratigraphy.
2. An induced polarization (IP) survey over the entire grid would detect disseminated sulfide mineralization which is associated with gold mineralization in some of the diamond drill core sampled previously. The survey should be done with an "a" spacing at 25m and $n=1,2,3,4$ should be read, using a pole dipole array.
3. A soil sampling program over the grid would potentially detect secondary dispersions of gold and gold indicator elements such as As, Cu and Zn from a blind mineralized zone. The survey should be done at 25m spacings and B horizon samples should be collected.
4. Much of the core that was drilled on Glen Auden's property is available in the Regional Core Library in Timmins, Ontario. This core should be examined and resampled.
5. Contingent on the results of the ground geophysics and sampling results, a diamond drill program should follow.

BUDGET FOR PHASE II

Linecutting:	
22 km @ \$250./km	\$ 5,500
I.P. Survey:	
11 km @ \$1,450./km	15,950
Soil Sampling:	
15 days @ \$400./day	6,000
Mob and Demob	1,900
Assaying:	
880 soil samples @ \$20./sample	17,600
100 drill core and rock grab samples @ \$20./sample	2,000
Geologist:	
7 days @ \$250./day	1,750
Reports	4,000
Subsistence & Contingencies	<u>5,500</u>
TOTAL	\$60,200

Respectfully submitted

Margaretha Zeeman

Margaretha Zeeman, B.Sc.

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1937 *Geology of the Horwood Lake Area, Ontario Department of Mines, Vol.46, part 2, 34pg., accompanied by Map No.46a, Horwood Lake Area.*
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1903 *Iron Ranges of Northern Ontario; Ontario Department of Mines, Vol.12, 315pg.*
- PARKS, W.A.
1899 *Niven's Base Line, 1899; Ontario Bureau of Mines, Vol.9, pp.132-135, 141 and 142.*
- PREST, V.K.
1950 *Geology of the Keith-Muskego Township Area; Ontario Department of Mines, Vol.59, part 7, 44pg., accompanied by Map No.1950-4, scale 1:12,000.*
- TANTON, T.L.
1916 *Reconnaissance along Canadian Northern Railway between Gogama and Oba, Sudbury and Algoma Districts, Ontario; Geological Survey of Canada, Summary Report 1916, 180pg. accompanied by preliminary Map No.1697*
- TODD, E.W.
1924 *Groundhog River Area; Ontario Department of Mines, Vol.33, part 6, 17pg.*

Previous work researched from the assessment files in Timmins, Ontario are as follows:

<u>Company (year)</u>	<u>File No.</u>
Algoma Ore (1961)	T-218
Canadian Pacific Railway (1959)	T-498
Consolidated Mining and Smelting (1946)	T-32
Dome Exploration (1980)	T-2338
Keith Gold (1947)	T-73
Kukatush Mining Corporation (1966)	T-1310
Purdy Mica Mines (1955)	T-83
Radiohill Mines (1967)	T-1362

CERTIFICATION

I, Margaretha Zeeman, of 136 Cedar Street South, in the city of Timmins, Province of Ontario, certify as follows concerning my report of the Glen Auden Resources Limited, Keith Township Groundhog Claims property, Province of Ontario and dated October 31, 1988:

1. I am a graduate of Laurentian University at Sudbury, Ontario, with a B.Sc. (Honours) Geology, obtained in 1986.
2. I have been practising in Canada for the past 18 months.
3. I have no direct interest in the properties, leases, or securities of Glen Auden Resources Limited, nor do I expect to receive any.
4. I was personally responsible for the interpretation of the geological data described in this report.

Dated this October 31, 1988
TIMMINS, Ontario

Margaretha Zeeman

Margaretha Zeeman, B.Sc.
Geologist

A P P E N D I X A

XRAL

**CERTIFICATE OF ANALYSIS
REPORT 6252**

**TO: ROBERT S. MIDDLETON EXPLORATION
ATTN: RON BURK
BOX 1637
136 CEDAR STREET SOUTH
TIMMINS, ONTARIO P4N 7W8**

**CUSTOMER No. 1078
DATE SUBMITTED
8-Aug-88**

REF. FILE 2320-K2

Total Pages 5

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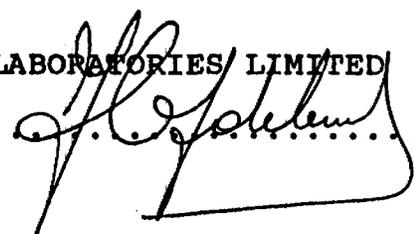
	METHOD	DETECTION LIMIT
AU PPB	NA	5.
NA %	NA	0.05
WRMAJ %	WR	0.01
CA %	NA	1.
SC PPM	NA	0.1
CR PPM	NA	10.
WRMIN PPM	WR	10.
FE %	NA	0.02
CO PPM	NA	5.
NI PPM	NA	200.
ZN PPM	NA	50.
AS PPM	NA	2.
SE PPM	NA	5.
RB PPM	NA	30.
MO PPM	NA	5.

	METHOD	DETECTION LIMIT
AG PPM	NA	5.
SB PPM	NA	0.2
BA PPM	NA	100.
LA PPM	NA	1.
CE PPM	NA	3.
SM PPM	NA	0.1
EU PPM	NA	0.2
YB PPM	NA	0.2
LU PPM	NA	0.05
HF PPM	NA	1.
TA PPM	NA	1.
W PPM	NA	4.
IR PPB	NA	20.
TH PPM	NA	0.5
U PPM	NA	0.5

DATE 20-SEP-88

X-RAY ASSAY LABORATORIES LIMITED

CERTIFIED BY



A-RAY ASSAY LABORATORIES LIMITED

ASSAY RESULTS

TABLE 1

SAMPLE	AU PPB	NA %	CA %	SC PPM	CR PPM	FE %	CO PPM	NI PPM	ZN PPM	AS PPM
8301	<8	1.90	7	52.6	270	7.98	42	<200	150	2
8302	<8	1.70	4	48.8	150	9.05	46	<300	140	<2
8303	<7	2.50	7	34.2	10	12.4	60	300	190	8
8304	<7	1.30	6	38.9	2000	9.23	73	600	190	<2
8305	8	0.35	5	33.8	1700	11.8	110	800	200	<2
8306	10	4.20	3	23.7	180	7.15	33	<300	170	<2
8307	<5	0.05	6	30.1	2600	7.31	78	1900	110	2
8308	<5	<0.05	6	20.8	2500	9.04	74	1000	220	<2
8309	<5	<0.05	3	14.2	1800	6.17	92	2700	120	<2
8310	<6	0.82	7	36.2	1400	10.9	77	700	280	5
8311	<5	<0.05	6	25.5	2400	9.32	110	1100	170	10
8312	9	4.10	6	23.1	110	4.91	29	<300	100	3
8313	<6	3.00	2	11.8	110	3.06	10	<200	90	7
8314	<7	3.60	3	9.1	110	3.43	18	<200	130	5
8315	<6	2.10	8	36.4	1100	10.2	58	300	210	<2
8316	<5	3.00	<1	3.7	10	0.71	<5	<200	<50	<2

SAMPLE	AU PPB	NA %	CA %	SC PPM	CR PPM	FE %	CO PPM	NI PPM	ZN PPM	AS PPM
8317	<5	1.50	1	3.0	<10	0.99	<5	<200	<50	2
8318	<5	0.25	4	20.6	1800	6.18	65	1400	120	110
8319	<8	6.00	<1	7.2	30	3.87	25	<300	100	2
8320	<5	0.33	6	25.7	2000	7.78	97	1500	110	58
8321	<5	0.28	6	28.1	2300	8.39	110	1700	120	64
8322	<5	<0.05	15	20.1	2000	7.04	93	2100	100	92
8323	<5	0.13	3	31.4	3000	9.42	130	2100	90	5
8324	<5	0.18	7	28.5	2300	8.53	110	1700	80	3
8325	<5	0.07	<1	0.5	30	0.27	<5	<200	<50	3
8326	<5	0.14	5	27.4	2600	8.94	130	2800	50	<2
8327	<5	0.06	5	29.4	2900	9.59	130	3000	80	18
8328	<14	5.70	5	5.2	90	1.94	13	<400	<160	3
8329	<5	0.64	4	31.9	1600	8.11	83	1100	70	560
8330	11	<0.05	6	18.6	1900	6.89	100	2300	80	310
8331	<5	0.07	5	19.3	1700	5.97	67	1100	100	680
8332	<5	0.16	7	20.6	2200	7.60	110	2300	60	9
8333	<5	1.30	6	26.6	2300	8.26	95	1300	<50	2
8334	<6	1.90	3	19.2	1500	7.18	84	1900	<60	5
8335	<11	1.50	14	50.9	390	9.67	66	<300	<90	3

SAMPLE	AU PPB	NA %	CA %	SC PPM	CR PPM	FE %	CO PPM	NI PPM	ZN PPM	AS PP
8336	<14	2.80	<3	26.1	1500	7.49	87	1300	<110	520
8337	<14	2.60	5	64.6	150	9.18	50	<400	160	57
8338	<11	1.80	4	46.2	420	7.46	60	<400	90	20
8339	<5	<0.05	<1	1.0	<10	23.5	<5	<200	150	24
8340	<5	<0.05	<1	1.2	<10	18.7	<5	<200	200	49
8341	<14	3.70	5	60.1	240	10.1	64	<500	<120	<2
8342	<6	0.74	10	33.2	2700	9.85	100	1700	180	2
8343	<6	0.10	5	29.8	2800	9.13	79	1600	170	50
8344	<7	2.50	10	46.5	190	8.36	38	<200	150	<2
8345	12	2.80	10	64.4	180	10.4	51	<300	240	<2
8346	<6	0.42	6	36.2	2700	10.3	100	1600	190	<2
8347	<6	0.37	7	37.1	2900	10.0	100	1800	230	<2
8348	<8	2.20	8	53.5	40	13.8	65	<300	210	4

X-RAY ASSAY LABORATORIES

ASSAY RESULTS

TABLE 2

SAMPLE	SE PPM	RB PPM	MO PPM	AG PPM	SB PPM	BA PPM	LA PPM	CE PPM	SM PPM
8301	<5	<40	<5	<5	0.5	<200	3	11	2.1
8302	<7	<50	<5	<5	0.2	<300	3	13	2.2
8303	<5	<50	5	<5	0.5	<100	5	23	3.3
8304	<5	<40	<5	<5	0.2	<200	1	<3	1.2
8305	<5	<30	<5	<5	0.4	<100	5	13	1.5
8306	<5	<60	<5	<5	<0.2	<200	13	27	3.6
8307	<5	<30	<5	<5	0.4	<200	<1	6	0.6
8308	<5	<30	<5	<5	0.5	<100	2	11	1.2
8309	<5	<30	<5	<5	0.4	<200	2	6	0.9
8310	<6	<40	<5	<5	0.6	<100	5	14	3.0
8311	<5	<30	<5	<5	0.5	<100	1	<3	1.2
8312	<5	100	<5	<5	0.6	500	13	30	3.4
8313	<5	70	10	<5	0.4	700	32	68	5.3
8314	<7	<50	<5	<5	0.9	1000	89	141	12.4
8315	8	<40	<5	<5	0.4	<100	8	15	3.4
8316	<5	<40	<5	<5	0.5	600	31	58	6.8

SAMPLE	SE PPM	RB PPM	MO PPM	AG PPM	SB PPM	BA PPM	LA PPM	CE PPM	SM PPM
8317	5	100	<5	<5	0.5	600	26	43	5.9
8318	<5	<30	<5	<6	0.2	<100	1	3	0.6
8319	<5	<70	<5	<5	0.8	200	69	128	10.1
8320	<5	<30	<5	<5	0.3	<100	1	10	0.9
8321	<5	<30	<5	<5	0.3	<100	2	5	1.1
8322	<5	<30	<5	<5	0.3	<100	<1	<3	0.6
8323	<5	<30	<5	<5	0.8	<100	1	9	0.8
8324	<5	<30	<5	<5	0.9	<100	10	24	1.6
8325	<5	<30	<5	<5	0.7	<100	<1	<3	<0.1
8326	<5	<30	<5	<5	<0.2	<100	1	7	0.7
8327	6	<30	<5	<5	1.0	<100	<1	6	0.6
8328	<9	<110	<6	<5	0.5	1100	14	14	2.0
8329	<5	30	<5	<5	1.7	200	1	5	0.9
8330	<5	<30	<5	<5	1.2	<100	2	8	0.9
8331	<5	50	<5	<5	4.6	300	1	3	0.6
8332	<5	<30	<5	<5	0.3	<100	1	<3	0.6
8333	<5	<30	<5	<5	0.5	<100	2	10	1.2
8334	<5	<40	<5	<5	0.7	<100	25	51	6.6
8335	<7	<60	<5	67	0.6	<300	3	9	2.1
8336	<9	<80	<7	<16	6.1	500	33	46	5.2

SAMPLE	SE PPM	RB PPM	MO PPM	AG PPM	SB PPM	BA PPM	LA PPM	CE PPM	SM PPM
8337	<8	80	8	<11	0.6	<300	6	13	2.7
8338	<7	210	<6	<5	1.4	800	14	38	3.7
8339	<5	30	<5	<5	0.4	<100	4	8	1.0
8340	<5	<30	<5	<5	0.4	<100	3	6	0.6
8341	18	<80	<6	<5	0.5	300	4	11	2.1
8342	<5	<30	<5	<5	<0.2	<100	2	<3	1.1
8343	<5	<30	<5	<7	0.4	<100	1	8	0.7
8344	<5	<40	<5	<5	0.5	<200	2	9	1.8
8345	<6	<40	<5	<5	<0.2	200	2	14	2.1
8346	<5	<30	<5	<5	0.4	<100	2	13	1.4
8347	<5	<30	<5	<5	0.3	<100	2	13	1.4
8348	<5	<40	<5	<5	0.2	200	21	43	5.6

X-RAY ASSAY LABORATORIES

ASSAY RESULTS

TABLE 3

SAMPLE	EU PPM	YB PPM	LU PPM	HF PPM	TA PPM	W PPM	IR PPB	TH PPM	U PPM
8301	<0.2	1.7	0.31	<1	<1	<4	<20	<0.5	<0.9
8302	<0.2	2.3	0.36	2	<1	<4	<20	1.1	<1.0
8303	1.3	1.9	0.31	1	3	<4	<20	0.8	<0.9
8304	<0.2	1.7	0.20	1	<1	<4	<20	<0.5	1.2
8305	0.3	1.2	0.18	1	<1	<4	<20	<0.5	<0.8
8306	<0.2	1.7	0.24	3	<2	<4	<20	1.3	1.4
8307	<0.2	0.9	0.10	<1	<1	<4	<20	<0.5	<0.7
8308	<0.2	0.8	0.09	1	<1	<4	<20	<0.5	<0.7
8309	<0.2	0.4	0.06	<1	<1	<4	<20	<0.5	<0.6
8310	<0.2	1.6	0.23	1	<1	<4	<20	<0.5	<0.8
8311	<0.2	0.9	0.11	1	<1	<4	<20	<0.5	<0.7
8312	1.2	1.7	0.38	3	<2	<4	<20	1.8	1.0
8313	<0.6	0.9	0.15	3	<1	<4	<20	3.9	<0.8
8314	2.6	0.7	0.11	6	<2	<4	<20	8.9	1.8
8315	<0.2	2.0	0.30	3	<1	<4	<20	0.5	1.0
8316	<0.6	2.8	0.53	5	<1	<4	<20	6.5	1.8
8317	0.5	2.0	0.33	3	2	<4	<20	5.5	1.4

SAMPLE	EU PPM	YB PPM	LU PPM	HF PPM	TA PPM	W PPM	IR PPB	TH PPM	U PPM
8318	<0.2	0.8	0.12	1	<1	<4	<20	<0.5	<0.7
8319	2.4	0.4	0.12	4	<2	<4	<20	6.1	<1.1
8320	0.3	0.8	0.15	<1	<1	<4	<20	<0.5	<0.7
8321	0.3	1.1	0.14	<1	<1	<4	<20	<0.5	<0.7
8322	0.3	0.7	0.10	<1	<1	<4	<20	<0.5	0.8
8323	<0.2	0.9	0.16	1	<1	<4	<20	<0.5	<0.8
8324	0.5	1.1	0.18	<1	<1	<4	<20	<0.5	<0.7
8325	<0.2	<0.2	<0.05	<1	<1	<4	<20	<0.5	<0.5
8326	0.3	0.8	0.11	<1	<1	<4	<20	<0.5	<0.7
8327	0.2	1.0	0.12	<1	<1	<4	<20	<0.5	<0.7
8328	<1.5	0.5	0.09	4	<4	<4	<20	3.4	2.6
8329	0.4	1.1	0.13	1	<1	<4	<20	<0.5	<0.9
8330	<0.2	0.6	0.09	<1	<1	<4	<20	<0.5	<0.7
8331	0.4	0.7	0.12	<1	<1	<4	<20	<0.5	<0.7
8332	0.2	0.6	0.12	<1	<1	<4	<20	<0.5	<0.6
8333	<0.2	0.8	0.17	<1	<1	<4	<20	<0.5	<0.7
8334	1.2	1.2	0.19	2	<1	<4	<20	2.5	1.7
8335	<0.7	2.0	0.30	1	<2	<4	<20	<0.8	2.5
8336	1.8	1.0	0.15	3	<3	<4	<20	4.2	2.2
8337	1.1	2.5	0.50	1	<2	<5	<20	<0.9	<2.1

SAMPLE	EU PPM	YB PPM	LU PPM	HF PPM	TA PPM	W PPM	IR PPB	TH PPM	U PPM
8338	<0.8	1.7	0.31	1	<2	5	<20	<0.8	<1.8
8339	1.3	0.8	0.12	<1	<1	<4	<20	<0.5	<0.5
8340	0.5	0.4	0.09	<1	<1	<4	<20	<0.5	<0.5
8341	<1.0	1.8	0.35	2	<3	6	<20	<0.9	<2.2
8342	<0.2	1.3	0.18	<1	<1	<4	<20	<0.5	<0.8
8343	<0.2	0.7	0.11	<1	<1	<4	<20	<0.5	<0.8
8344	<0.5	2.3	0.34	1	<1	<4	<20	<0.5	<0.9
8345	<0.2	2.3	0.42	1	<1	<4	<20	<0.6	<1.0
8346	<0.2	1.3	0.20	1	<1	<4	<20	<0.5	<0.8
8347	<0.2	1.5	0.20	<1	<1	<4	<20	<0.5	<0.8
8348	2.4	4.1	0.73	4	<1	<4	<20	3.7	1.7

X-RAY ASSAY LABORATORIES

WHOLE ROCK ANALYSIS

TABLE 4

SAMPLE	SI02	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	LOI	SUM
8302	48.6	12.6	6.84	6.89	1.97	0.02	12.0	0.20	0.97	0.07	8.70	99.0
8303	47.6	13.1	8.75	5.10	2.92	0.09	16.5	0.20	1.70	0.10	3.08	99.2
8304	46.9	9.34	7.40	15.4	1.59	0.04	12.0	0.20	0.54	0.05	4.47	98.2
8306	54.0	15.7	4.46	5.72	5.14	0.07	9.39	0.10	0.75	0.15	2.85	98.4
8307	45.2	5.57	7.11	23.3	<0.01	0.02	9.90	0.17	0.41	0.04	6.54	98.7
8308	47.6	2.43	8.71	20.6	<0.01	0.02	12.2	0.18	0.56	0.06	5.70	98.4
8310	49.7	6.99	10.1	13.5	0.82	0.17	13.7	0.24	0.94	0.07	2.39	98.8
8311	45.8	5.28	8.02	21.0	0.06	0.02	12.0	0.20	0.64	0.07	5.23	98.7
8312	57.0	18.2	5.95	3.21	4.79	0.30	6.22	0.18	0.77	0.14	3.39	100.2
8313	61.6	15.6	3.26	1.89	3.75	2.24	4.01	0.06	0.67	0.19	5.85	99.3
8315	50.1	9.20	11.2	8.21	2.51	0.18	14.0	0.25	1.07	0.09	1.54	98.5
8316	77.8	11.8	0.51	0.09	4.11	1.49	0.85	0.03	0.11	0.03	1.62	98.6
8319	56.6	18.4	1.24	4.47	7.93	0.26	5.26	0.03	0.76	0.56	3.08	98.7
8320	36.3	5.51	6.74	17.5	0.33	0.07	8.92	0.16	0.31	0.03	23.2	99.4
8322	31.9	4.00	13.0	15.8	0.02	0.01	8.31	0.24	0.24	0.03	25.9	99.7
8323	42.4	7.31	3.60	22.5	<0.01	0.01	10.7	0.16	0.42	0.04	11.5	99.0

SAMPLE	SI02	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	LOI	SUM
8326	42.1	4.99	3.87	27.9	0.16	0.03	10.3	0.18	0.35	0.03	8.16	98.4
8333	40.4	7.67	4.38	15.1	1.41	0.09	10.6	0.18	0.42	0.05	18.5	99.2
8335	47.9	15.2	12.5	5.77	1.65	0.15	11.7	0.20	0.77	0.06	2.77	98.7
8341	44.0	17.7	4.14	7.48	3.94	0.23	12.4	0.15	0.97	0.08	7.54	98.7
8342	44.7	7.24	9.58	20.2	0.60	0.09	11.0	0.18	0.40	0.04	3.85	98.2
8345	50.6	13.5	10.5	7.05	2.90	0.24	11.8	0.24	0.69	0.06	1.00	98.6
8347	45.7	7.56	8.65	19.9	0.34	0.05	11.3	0.19	0.45	0.04	4.08	98.6
8348	51.0	12.8	9.32	4.65	2.30	0.72	15.6	0.23	1.25	0.14	0.70	98.8

X-RAY ASSAY LABORATORIES

WHOLE ROCK ANALYSIS

TABLE 5

SAMPLE/PPM	CR	RB	SR	Y	ZR	NB	BA
8302	160	18	67	14	37	25	47
8303	47	27	168	20	44	16	30
8304	2010	<10	<10	15	<10	12	41
8306	185	<10	180	27	91	13	42
8307	2940	23	<10	<10	14	11	69
8308	2590	11	<10	<10	23	13	43
8310	1370	18	70	20	45	24	53
8311	2340	<10	<10	<10	23	12	39
8312	112	13	220	25	100	21	239
8313	124	74	504	<10	99	<10	706
8315	1090	20	98	17	49	18	37
8316	28	75	241	26	85	<10	545
8319	60	<10	426	<10	173	19	229
8320	1810	20	53	<10	<10	15	62
8322	1720	15	164	<10	<10	<10	23
8323	2550	18	30	12	<10	32	54
8326	2350	11	<10	<10	<10	<10	20
8333	2410	13	<10	<10	17	<10	122
8335	353	20	82	19	<10	27	<10
8341	254	14	69	14	31	11	190
8342	2330	<10	11	<10	12	<10	35
8345	158	<10	60	<10	18	23	47
8347	2470	<10	<10	20	<10	11	38
8348	43	32	103	25	101	26	237



SAMPLE	AU PPB	NA X	CA X	SC PPM	CR PPM	FE X	CO PPM	NI PPM	ZN PPM	AS PPM
8357	<6	1.00	6	34.6	60	6.06	34	<200	60	<2
8358	<5	0.17	1	3.5	30	2.64	32	<200	50	<2
8359	6	0.22	<1	3.0	<10	1.33	11	<200	300	70
8360	15	0.45	<1	11.3	30	3.38	12	<200	160	48
8361	130	0.61	<1	2.9	30	16.8	730	900	<50	20
8362	<5	<0.05	2	9.1	1300	3.27	91	3400	50	15
8363	91	0.81	2	41.3	310	5.79	37	<200	110	<2
8364	16	<0.05	9	16.6	1700	5.69	87	2100	70	23
8365	<5	3.20	<1	3.4	20	1.21	6	<200	<50	<2
8366	<5	3.20	2	6.7	30	2.70	13	<200	60	2
8367	<6	2.40	3	16.7	680	6.31	62	500	80	3
8368	<7	0.42	7	23.4	2600	7.82	110	2200	90	780
8369	<6	<0.05	1	28.3	2800	9.24	120	2400	60	5
8370	<6	0.12	6	28.4	2700	9.33	120	2800	60	9
8371	<6	0.59	8	35.5	3000	9.27	97	1700	80	3
8372	<5	0.23	<1	0.9	40	0.29	<5	<200	<50	2
8373	11	<0.05	5	28.5	2600	8.04	130	2100	120	16
8374	<7	0.09	<1	33.4	850	20.7	120	500	230	7
8375	<7	<0.05	<1	8.0	70	46.8	71	1300	<50	<2
8376	31	<0.05	<1	10.4	60	47.4	110	1500	80	75
8377	<5	0.48	1	26.0	300	9.41	33	300	100	45
8378	<5	<0.05	6	13.5	1600	6.46	96	3000	100	310
8379	<5	2.70	1	2.8	40	0.84	5	<200	90	11
8380	61	0.24	<1	11.9	30	5.21	110	200	570	78
8381	51	0.79	3	28.2	1700	14.2	86	1500	250	19
8382	<5	4.40	2	4.7	30	1.63	7	<200	100	11
8383	<5	2.00	1	5.5	20	1.31	6	<200	360	8
8384	<5	0.07	7	3.9	260	2.74	21	200	70	130
8385	82	1.10	10	13.1	50	18.0	25	<200	140	3
8386	<6	0.27	9	6.0	50	20.3	42	<200	190	<2
8387	<5	1.10	14	60.3	420	8.47	39	<200	90	<3
8388	<5	<0.05	<1	1.1	10	0.52	<5	<200	<50	6
8389	14	0.75	6	20.6	150	3.78	27	<200	140	11
8390	13	0.18	4	19.3	1300	10.1	39	300	120	18



SAMPLE	SE PPM	RB PPM	MO PPM	AG PPM	SB PPM	BA PPM	LA PPM	CE PPM	SM PPM
8357	<5	<30	<5	<5	2.8	<200	5	14	1.7
8358	<5	<30	<5	<5	0.2	<100	<1	<3	0.2
8359	<5	80	<5	<5	0.4	600	12	21	2.0
8360	<5	<30	<5	<5	0.2	300	10	20	2.0
8361	<5	<30	8	<5	0.7	<100	4	11	0.7
8362	<5	<30	<5	<5	0.4	<100	<1	<3	0.2
8363	5	100	<5	<5	0.7	800	4	12	1.6
8364	<5	<30	<5	<5	0.2	<100	1	<3	0.6
8365	<5	130	<5	<5	0.3	700	11	21	1.8
8366	<5	50	<5	<5	0.9	500	19	31	3.2
8367	<5	<30	<5	<5	1.5	400	37	61	5.0
8368	7	<30	<5	13	1.6	<100	1	<3	0.6
8369	<5	<30	<5	<5	0.4	<100	<1	<3	0.5
8370	<5	<30	<5	<5	0.7	<100	1	6	0.7
8371	<5	<30	<5	<5	0.3	<100	1	<3	0.9
8372	<5	<30	<5	<5	0.2	100	1	<3	0.2
8373	<5	<30	<5	<5	0.3	<100	<1	7	0.7
8374	7	<30	<5	<5	0.4	100	6	15	1.9
8375	5	<30	<5	<5	<0.2	<100	1	<3	0.3
8376	8	<40	<5	<5	0.3	<100	1	<3	0.4
8377	<5	70	<5	<5	0.2	1100	2	6	1.3
8378	<5	<30	<5	<5	1.1	<100	<1	<3	0.3
8379	<5	90	<5	<5	0.3	800	11	16	1.6
8380	6	60	<5	<5	0.4	1000	14	25	3.0
8381	<5	<30	<5	<5	<0.2	100	1	10	1.1
8382	<5	120	<5	<5	0.5	800	17	21	2.4
8383	<5	110	<5	<5	1.3	900	24	35	3.5
8384	<5	40	<5	<5	0.3	100	2	4	0.9
8385	11	<30	<5	<5	1.6	200	13	22	3.2
8386	<5	120	<5	<5	0.3	200	11	22	2.0
8387	<5	<30	<5	<5	0.6	300	2	8	2.2
8388	<5	<30	<5	<5	0.3	100	3	5	0.4
8389	<5	40	<5	<5	<0.2	300	1	4	1.2
8390	<5	<30	5	<5	0.5	200	3	7	1.2

SAMPLE	EU PPM	YB PPM	LU PPM	HF PPM	TA PPM	W PPM	IR PPB	TH PPM	U PPM
8357	0.6	1.8	0.24	<1	<1	<4	<20	0.6	<0.9
8358	<0.2	<0.2	<0.05	<1	<1	<4	<20	<0.5	<0.5
8359	0.5	0.6	0.11	2	<1	<4	<20	1.9	0.6
8360	0.5	0.8	0.12	2	<1	<4	<20	1.4	<0.6
8361	<0.2	<0.3	<0.05	<1	<1	<4	<20	0.5	<1.0
8362	<0.2	0.2	<0.05	<1	<1	<4	<20	<0.5	<0.6
8363	0.7	1.8	0.34	1	<1	<4	<20	<0.5	<1.0
8364	0.5	0.5	0.12	<1	<1	<4	<20	<0.5	<0.8
8365	0.6	0.2	<0.05	2	<1	<4	<20	2.1	1.1
8366	0.8	0.5	0.10	3	<1	<4	<20	2.7	1.3
8367	1.2	0.9	0.10	2	<1	<4	<20	4.9	1.7
8368	0.5	0.7	0.13	<1	<1	<4	<20	<0.5	<1.1
8369	0.2	0.9	0.20	<1	<1	<4	<20	<0.5	<1.0
8370	<0.2	0.8	0.10	<1	<1	<4	<20	<0.5	<1.0
8371	0.7	1.1	0.16	<1	<1	<4	<20	<0.5	<1.0
8372	<0.2	<0.2	<0.05	<1	<1	<4	<20	<0.5	<0.5
8373	0.3	0.8	0.10	<1	<1	<4	<20	<0.5	<1.0
8374	0.5	1.3	0.20	1	<1	<4	<20	0.9	<1.0
8375	0.2	0.2	0.10	<1	<1	<4	<20	<0.5	<1.2
8376	0.3	0.2	0.06	<1	<1	<4	<20	<0.5	<1.3
8377	0.5	1.3	0.22	1	<1	<4	<20	<0.5	<0.8
8378	0.2	0.5	0.06	<1	<1	<4	<20	<0.5	1.4
8379	0.3	0.2	<0.05	2	<1	<4	<20	1.9	1.2
8380	0.7	1.1	0.19	2	<1	<5	<20	1.9	<0.9
8381	0.4	0.8	0.14	<1	<1	13	<20	<0.5	1.9
8382	<0.2	0.5	0.06	3	<1	<4	<20	3.1	1.4
8383	1.2	0.4	0.05	3	<1	<4	<20	4.0	1.3
8384	0.5	0.5	0.06	<1	<1	<4	<20	<0.5	<0.6
8385	2.0	3.5	0.58	4	1	<5	<20	2.7	1.5
8386	1.0	2.2	0.35	2	<1	<5	<20	2.8	2.3
8387	0.6	1.7	0.34	2	<1	<9	<20	<0.5	<1.4
8388	0.2	<0.2	<0.05	<1	<1	<4	<20	<0.5	<0.5
8389	0.5	1.2	0.17	<1	<1	<5	<20	<0.5	<0.9
8390	0.3	0.7	0.15	1	<1	<4	<20	0.6	<0.7

SAMPLE \ %	SI02	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	LOI	SUM
8357	50.3	13.8	10.8	6.84	1.80	0.57	12.9	0.28	0.78	0.08	1.70	99.9
8359	85.7	7.22	0.47	0.50	0.16	2.05	1.70	0.03	0.19	0.04	1.85	100.0
8362	35.9	1.92	3.10	32.1	<0.01	0.03	4.72	0.36	0.12	0.03	21.3	99.8
8363	59.4	17.0	3.07	2.66	1.00	3.28	8.42	0.14	1.15	0.12	3.85	100.3
8365	73.4	14.6	0.66	0.89	4.31	2.67	1.63	0.02	0.25	0.07	1.62	100.3
8366	63.1	16.5	3.16	2.05	4.66	1.56	4.19	0.05	0.56	0.16	4.00	100.1
8369	39.2	7.32	2.62	26.7	<0.01	0.01	11.6	0.08	0.39	0.04	11.3	99.7
8370	43.0	6.46	5.76	23.6	0.04	0.06	11.3	0.17	0.38	0.04	8.00	99.2
8371	43.7	7.97	7.84	20.9	0.55	0.08	11.5	0.18	0.42	0.03	5.00	98.6
8378	33.8	3.48	6.98	23.2	<0.01	0.04	8.97	0.22	0.21	0.02	23.3	100.5

XRF W.R.A. SUMS INCLUDE ALL ELEMENTS DETERMINED. FOR SUMMATION, ELEMENTS ARE CALCULATED AS OXIDES

SAMPLE \ PPM	CR	RB	SR	Y	ZR	NB	BA
8357	85	33	135	21	18	21	218
8359	18	79	18	<10	56	13	824
8362	1540	22	43	<10	<10	<10	46
8363	331	96	129	19	30	15	982
8365	41	101	321	<10	58	<10	863
8366	43	55	435	<10	102	20	557
8369	2750	13	69	12	<10	18	79
8370	2450	19	12	22	<10	<10	26
8371	2770	16	13	<10	<10	18	49
8378	1790	<10	102	<10	<10	19	16



42B01NE0143 2.11889 KEITH

900

Ministry of
Northern Development
and Mines

Mining Lands Section
3rd floor, 880 Bay Street
Toronto, Ontario
M5S 1Z8

Ministère du
Développement du Nord
et des Mines

Telephone: (416) 965-4888

May 16, 1989

Your file: W8906-47,49
Our file: 2.11889

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

Dear Sir:

Re: Notice of Intent dated April 14, 1989 Geological
Survey submitted on Mining Claims P 1035686 et al
in the Keith Township.

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,

W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
MAY 19 1989
RECEIVED

D.K.DK:eb
Enclosure

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

Resident Geologist
Timmins, Ontario

R.S. Middleton Exploration Service
Timmins, Ontario



Ontario

Ministry of Northern Development and Mines

Technical Assessment Work Credits

AMENDED

File	2,11889
Date	April 14, 1989
Mining Recorder's Report of Work No.	W8906-47

Recorded Holder	GLEN AUDEN RESOURCES LIMITED
Township or Area	KEITH TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ days	P 1035686 to .93 incl
Magnetometer _____ days	1035695 to 708 incl.
Radiometric _____ days	1035710 to 15 incl
Induced polarization _____ days	1035717 to 19 incl
Other _____ days	1035721
	1035723 to 29 incl.
	1035732 to 34 incl
	1071623-24
	1071626
	1035737
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ 20 _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> 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

15 days Geological	10 days Geological	5 days Geological
P 1035694	P 1035709	P 1035720
1035730-31	1035722	
1035738	1035735-36	
1035786	1035740	
1071625	1035785	

No credits have been allowed for the following mining claims

<input type="checkbox"/> not sufficiently covered by the survey	<input type="checkbox"/> insufficient technical data filed
---	--



Recorded Holder
Glen Auden Resources Limited

Township or Area
Keith

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ 20 _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	P - 1087290 to 92 inclusive.

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

10 days Geological
P - 1087293

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

2-11889

Mining Act

Type of Survey(s) Geological Mapping Township or Area Keith
 Claim Holder(s) Alan Auden Resources Limited Prospector's Licence No. T 1915
 Address P.O. Box 1637 Timmins, Ontario P4N 7W8
 Survey Company R.S. Middleton Exploration Serv. Date of Survey (from & to) 86/10/88 - 88/10/88 Total Miles of line Cut
 Name and Address of Author (of Geo-Technical report) M. Zeeman, P.O. Box 1637 Timmins Ontario P4N 7W8

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	- Other	
	Geological	20
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	Other	
	Geological	
	Geochemical	

Airborne	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	
Electromagnetic	
Magnetometer	
Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.
Prefix	Number	
P	1087-290	
	1087-291	
	1087-292	
	1087-293	

Mining Claim		Expend. Days Cr.
Prefix	Number	

RECORDED
FEB -1 1989

* TO BE INCLUDED WITH THE REPORT OF WORK SUBMITTED ON DECEMBER 1, 1988 (same mapping job) (Geological Report written by M. Zeeman dated October 31/88)

Expenditures (excludes power stripping) 15.00
 Type of Work Performed Mapping
 Performed on Claim(s) FEB 1 1989
C. Cooper
 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.

Date Jan 31/89 Recorded Holder or Agent (Signature) C. Cooper

For Office Use Only
 Total Days Cr. Recorded 80 Date Recorded FEB 1 /89 Mining Record 80
 Date Approved as Recorded Branch Director [Signature]
 See revised work statement

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 C. Cooper, R.S. Middleton Exploration Services Inc.

(Page of 2)

2.11889

Mining Act

Type of Survey(s): **Geological Mapping** Township or Area: **Keith**
 Claim Holder(s): **Glen Auden Resources Limited** Prospector's Licence No.: **T-1915**
 Address: **P.O. Box 1637 Timmins Ontario P4N 7W8**
 Survey Company: **R.S. Middleton Exploration Serv. Inc.** Date of Survey (from to): **07, 07, 88 | 10, 10, 88** Total Miles of line Cut:
 Name and Address of Author (of Geo-Technical report): **M. Zeeman. P.O. Box 1637 TIMMINS ONT. P4N 7W8.**

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric - Other	
	Geological	20
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side	- Electromagnetic - Magnetometer - Radiometric - Other	
	Geological	
	Geochemical	

Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	- Electromagnetic - Magnetometer	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
P	1035686			1035709	
	1035687			1035710	
	1035688			1035711	
	1035689			1035712	
	1035690			1035713	
	1035691			1035714	
	1035692			1035715	
	1035693			1035717	
	1035694			1035718	
	1035695			1035719	
	1035696			1035720	
	1035697			1035721	
	1035698			1035722	
	1035699			1035723	
	1035700			1035724	
	1035701			1035725	
	1035702			1035726	
	1035703			1035727	
	1035704			1035728	
	1035705			1035729	
	1035706			1035730	
	1035707			1035731	
	1035708			1035732	

RECEIVED DEC 1 1988

RECEIVED FEB 15 1989

MINING LANDS RECORDED

Expenditures (exclude power on plug)

Type of Work Performed:

Performed on Claim(s): **DEC - 1 1988**

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.

Total number of mining claims covered by this report of work. **63**

For Office Use Only

Total Days Cr. Recorded: **1180** Date Recorded: **DEC. 1 / 88** Mining Director: *[Signature]*

Date Approved as Recorded: **1/18/89** Branch Director: *[Signature]*

See revised work statement.

Date: **Nov. 29/88** Reported Holder or Agent (Signature): *[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: **Cynthia Abernethy, P.S. Middleton Exploration Services Inc.**

DOCUMENT No. **W 8906-047**

- 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.

(1 of 2)

Mining Act

Type of Survey(s): **Geological Mapping**

Claim Holder(s): **Glen Auden Resources Limited**

Address: **P.O. Box 1637 Timmins Ontario P4N 7W8**

Survey Company: **R.S. Middleton Exploration Services Inc.**

Name and Address of Author (of Geo-Technical report): **M. Zeeman P.O. Box 1637 Timmins Ont. P4N 7W8.**

Township or Area: **Keith**

Prospector's Licence No.: **T-1915**

Date of Survey (from & to): **17.07.88 to 10.10.88**

Total Miles of line Cut: _____

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	20
	Geochemical	

Man Days	Geophysical	Days per Claim
RECEIVED JEC 1 1988	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
	Geological	
Geochemical		

Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
P	1035733				
	1035734				
	1035735				
	1035736				
	1035737				
	1035738				
	1035740				
	1035785				
	1035786				
	1071623				
	1071624				
	1071625				
	1071626				
	1087290 CA				
	1087291 CA				
	1087292 CA				
	1087293 CA				

CLAIMS RECORDED AFTER SURVEY COMPLETED (NOT ALLOWED) ETC.

RECORDED
DEC - 1 1988

Expenditures (excludes power stripping)

Work Performed

Remarks 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.

Date: **November 27/88** Recorded Holder or Agent (Signature): **Cynthia Abisagthy**

For Office Use Only

Total Days Cr. Recorded: _____ Date Recorded: _____ Mining Recorder: _____

Date Approved as Recorded: _____ Branch Director: **See previous statement**

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: **Cynthia Abisagthy, R.S. Middleton Exploration Services Inc.**



Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

- 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.

M-310

(Page 1 of 2)

Mining Act

2.11889

Type of Survey(s) Geological Mapping	Township or Area Keith
Claim Holder(s) Glen Auden Resources Limited	Prospector's Licence No. T-1915
Address P.O. Box 1637 Timmins Ontario P4N 7W8.	
Survey Company R.S. Middleton Exploration Serv. Inc	Date of Survey (from & to) 17 Oct. 88 to 31 Nov. 88
Name and Address of Author (of Geo-Technical report) M. Zeeman. P.O. Box 1637 TIMMINS ONT. P4N 7W8.	

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)	- Electromagnetic - Magnetometer	
For each additional survey using the same method: Enter 20 days (for each)	- Radiometric - Other	
RECEIVED DEC 1 1988	Geological	20
MINING LANDS SECTION	Geophysical	
Complete reverse side and enter (Days) per	- Electromagnetic - Magnetometer - Radiometric - Other	
RECEIVED DEC 1 1988	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Radiometric	

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
	1035686			1035709	
	1035687			1035710	
	1035688			1035711	
	1035689			1035712	
	1035690			1035713	
	1035691			1035714	
	1035692			1035715	
	1035693			1035717	
	1035694			1035718	
	1035695			1035719	
	1035696			1035720	
	1035697			1035721	
	1035698			1035722	
	1035699			1035723	
	1035700			1035724	
	1035701			1035725	
	1035702			1035726	
	1035703			1035727	
	1035704			1035728	
	1035705			1035729	
	1035706			1035730	
	1035707			1035731	
	1035708			1035732	

Expenditures (excludes power stripping)

Type of Work Performed
Performed on Claim(s)
Calculation of Expenditure Days Credits
Total Expenditures \$ <input type="text"/> + 15 = <input type="text"/>
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.

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

63

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Date Nov 29/88	Recorded Holder or Agent (Signature) <i>Cynthia Bernetty</i>
--------------------------	---

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 and that the same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying



2 of 2

Mining Act

Type of Survey(s) Geological Mapping		Township or Area Keith
Claim Holder(s) Glen Audem Resources Limited		Prospector's Licence No. T-1915
Address P.O. Box 1637 Timmins Ontario P4N 7W8		
Survey Company R.S. Middleton Exploration Services Inc.	Date of Survey (from & to) 17 Oct 88	Total Miles of line Cut
Name and Address of Author (of Geo-Technical report) M. Zeeman P.O. Box 1637 Timmins Ont. P4N 7W8		

Credits Requested per Each Claim in Columns at right

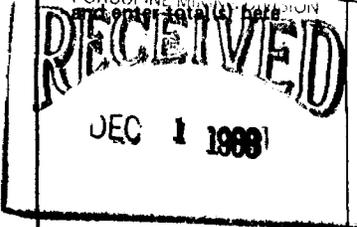
Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	20
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
P	1035733				
	1035734				
	1035735				
	1035736				
	1035737				
	1035738				
	1035740				
	1035785				
	1035786				
	1071623				
	1071624				
	1071625				
	1071626				
	1087290				
	1087291				
	1087292				
	1087293				



Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$ + =

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.

Total number of mining claims covered by this report of work. **63**

For Office Use Only			
Total Days Cr. Recorded	Date Recorded	Mining Recorder	
	Date Approved as Recorded	Branch Director	

Date **November 21 1988** Recorded Holder or Agent (Signature) **Amelia Bernetty**

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 on **11/21/88** and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

REFERENCE

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M. + S. - MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
①			SRO	135263
②			SRO	22417
③	SEC 36/80	7/2/80	SRO	188543

SAND AND GRAVEL

- ④ M.T.C. PIT
- ⑤ M.T.C. PIT 3A-15
- ⑥ M.T.C. PIT 3A-16
- ⑦ M.T.C. PIT 10B5
- ⑧ GRAVEL FILE 177587
- ⑨ M.N.R. PIT 3A-1 (MOE WASTE DISP SITE)

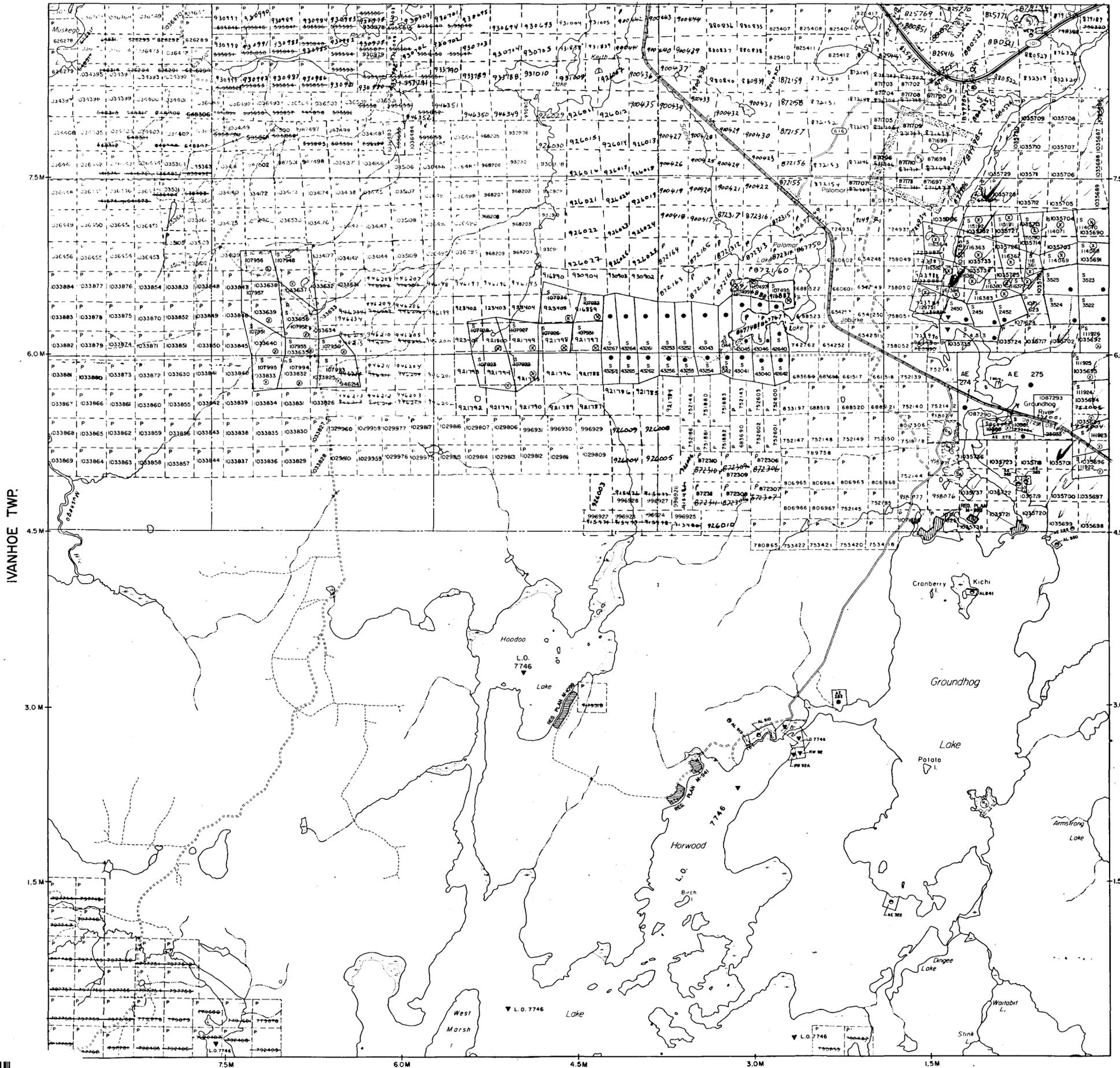
NOTES

SURVEY LINES SHOWN THUS ARE FOR CONTROL ONLY. CLAIMS CLASSIFIED AS BEING IN UNSUBDIVIDED TERRITORY. - March 7, 1947.
Surveyor General

FLOODING

Flooded areas on Hoodoo & Horwood Lakes and Groundhog R. to contour elev. 1117 L.O. 7746 File: 75166

MUSKEGO TWP.



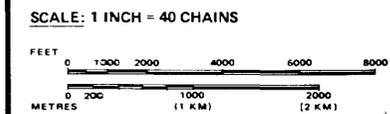
LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, BASE LINES, ETC.
 - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
 - LOT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	○
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	□
" MINING RIGHTS ONLY	□
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊗
CANCELLED	⊙
SAND & GRAVEL	⊙

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

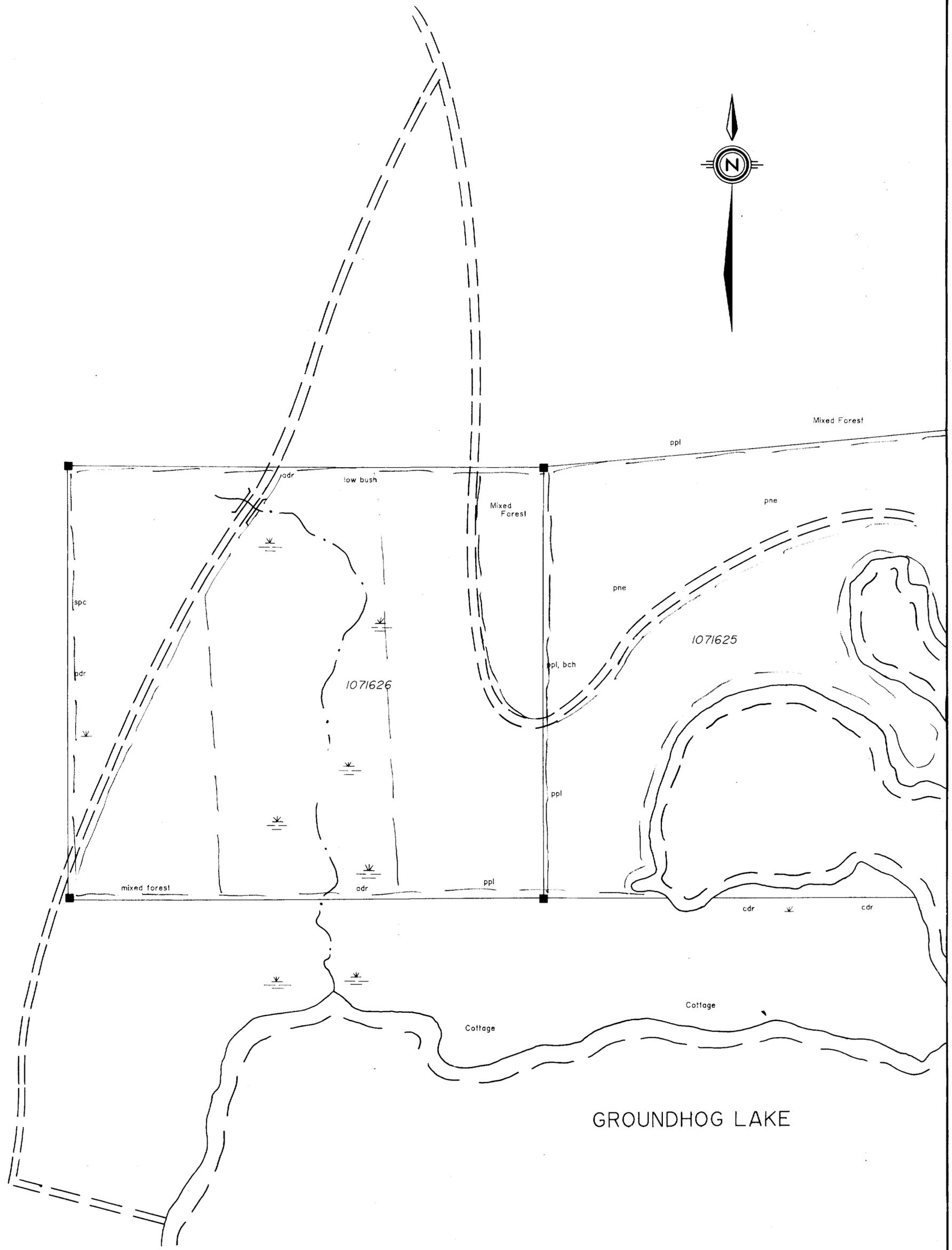


TOWNSHIP
KEITH
M.N.R. ADMINISTRATIVE DISTRICT
CHAPLEAU
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
SUDBURY



Date: APRIL 1985
Number: **G-3238**





LEGEND

2.11889

TREES

- cdr cedar
- spc spruce
- ppl poplar
- bsm balsam
- pne pine
- mpl maple
- adr alder
- tmk tamarack
- bch birch

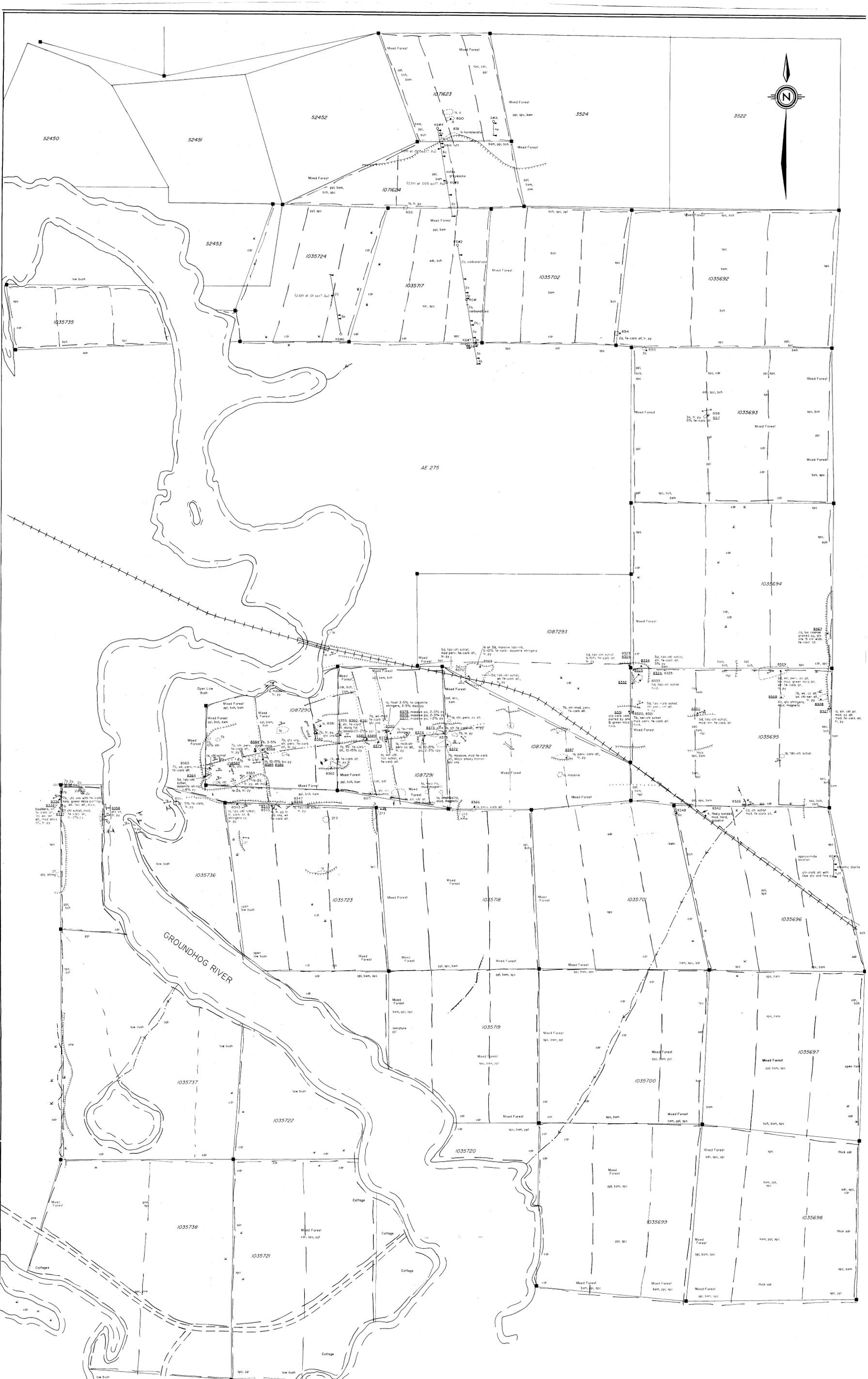
- creek
- swamp
- gravel road
- trail
- claim post and lines (assumed post)

erse lines

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for	GLEN AUDEN RESOURCES LIMITED	
	Title	GROUNDHOG GEOLOGY MAP- SOUTHWEST SHEET	
	Date: Nov. 15, 1988	Scale: 1: 2500	N.T.S.:
	Drawn: M.Z.	Approved:	File: M-310

Margaret Lannon





LEGEND

<p>LATE INTRUSIVE ROCKS</p> <p>6 Proterozoic diabase</p> <p>7 EARLY FELSIC INTRUSIVE ROCKS</p> <p>7a granitic rocks 7b quartz-feldspar porphyry</p> <p>8 EARLY MAFIC AND INTERMEDIATE INTRUSIVE ROCKS</p> <p>8a gabbro 8b pyroxene-porphyrific rock 8c diorite 8d feldspar porphyry</p> <p>9 ULTRAMAFIC ROCKS</p> <p>9a peridotite 9b serpentinized peridotite 9c komatiitic rock 9d carbonized ultramafic rock</p>	<p>4 SEDIMENTARY ROCKS</p> <p>4a argillite 4b wacke (siltstone, sandstone) 4c conglomerate 4d chert 4e iron formation 4f graphitic rock</p> <p>3 FELSIC VOLCANIC ROCKS</p> <p>3a massive flow or undifferentiated 3b flow breccia 3c porphyritic flow 3d tuff, crystal tuff 3e lapilli tuff</p> <p>2 INTERMEDIATE VOLCANIC ROCKS</p> <p>2a massive flow or undifferentiated 2b pillow flow 2c pillow or flow breccia 2d amygdaloidal 2e porphyritic 2f tuff, crystal tuff 2g lapilli tuff 2h conglomerate 2i reworked tuff (tuffaceous sedimentary rock)</p>	<p>1 MAFIC VOLCANIC ROCKS</p> <p>1a massive pillow or undifferentiated 1b pillow flow 1c pillow or flow breccia 1d amygdaloidal 1e varicillitic 1f porphyritic 1g pyroclastic</p> <p>TREES</p> <p>qtz quartz qv quartz vein silicified carb carbonate cc calcite ank ankerite ep epidote chl chlorite pyx pyroxene feld feldspar mag magnetite py pyrite pyrr pyrrhotite cpy chalcopyrite</p>	<p>foliation with dip cleavage with dip lineation with plunge jointing with dip drag fold brecciation bedding with dip and tops direction pillow tops direction shearing outcrop, float scarp trench pit shaft esker creek swamp gravel road trail railway tracks</p>
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GROUNDHOG LAKE

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
for	GLEN AUDEN RESOURCES LIMITED		
Title	GROUNDHOG GEOLOGY MAP - SOUTH SHEET		
Date	Nov. 15, 1988	Scale	1:2500
Drawn	M.Z.	Approved	N.T.S.
File	M-30		

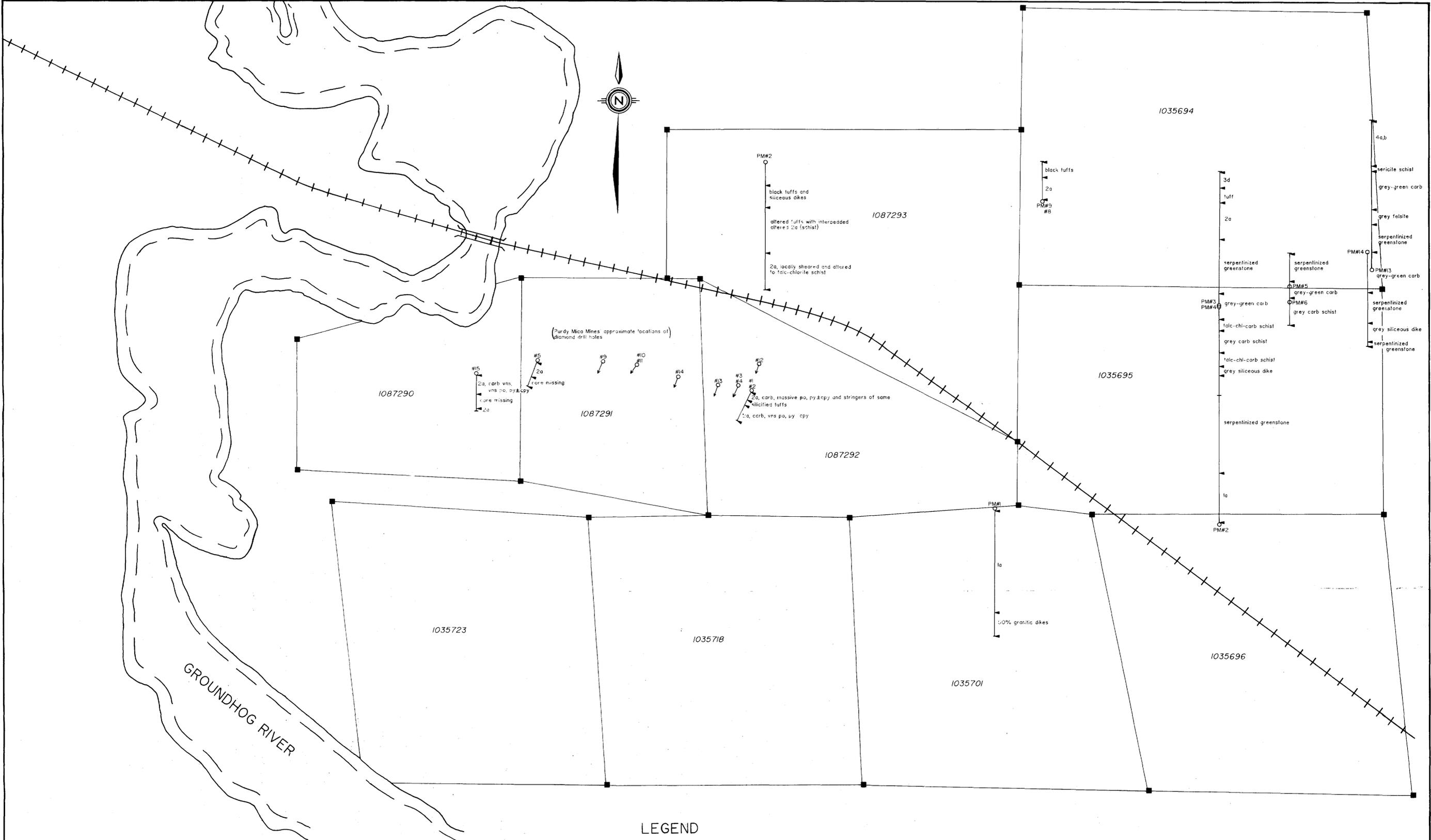
11889



GROUNDHOG RIVER



8 LATE INTRUSIVE ROCKS	4 SEDI
8a Proterozoic diabase	4a arg
	4b wa
	4c cor
	4d che
	4e lr or
	4f gra
7 EARLY FELSIC INTRUSIVE ROCKS	3 FEL:
7a granitic rocks	3a mos
7b quartz-feldspar porphyry	3b flow
	3c porp
	3d tuff
	3e lapill
6 EARLY MAFIC AND INTERMEDIATE INTRUSIVE ROCKS	2 INTEI
6a gabbro	2a mos
6b pyroxene-porphyry	2b pillo
6c diorite	2c amy
6d feldspar porphyry	2e porp
	2f tuff
	2g lapill
	2h aggl
	2j rew
5 ULTRAMAFIC ROCKS	
5a peridotite	
5b serpentized peridotite	
5c komatiitic	
5d carbonatized ultramafic rock	
— traverse lines	



LEGEND

- | | | | |
|--|--|--|--|
| <p>8 LATE INTRUSIVE ROCKS</p> <p>Proterozoic diabase</p> <p>7 EARLY FELSIC INTRUSIVE ROCKS</p> <p>7a granitic rocks
7b quartz-feldspar porphyry</p> <p>6 EARLY MAFIC AND INTERMEDIATE INTRUSIVE ROCKS</p> <p>6a gabbro
6b pyroxene-porphyry
6c diorite
6d feldspar porphyry</p> | <p>5 ULTRAMAFIC ROCKS</p> <p>5a peridotite
5b serpentinized peridotite
5c komatiitic
5d carbonatized ultramafic rock</p> <p>4 SEDIMENTARY ROCKS</p> <p>4a argillite
4b wacke (siltstone, sandstone)
4c conglomerate
4d chert
4e iron formation
4f graphitic rock</p> | <p>3 FELSIC VOLCANIC ROCKS</p> <p>3a massive flow or undifferentiated
3b flow breccia
3c porphyritic flow
3d tuff, crystal tuff
3e lapilli tuff</p> <p>2 INTERMEDIATE VOLCANIC ROCKS</p> <p>2a massive flow or undifferentiated
2b pillow flow
2c pillow or flow breccia
2d amygdaloidal
2e porphyritic
2f tuff, crystal tuff
2g lapilli tuff
2h agglomerate
2j reworked tuff (tuffaceous)</p> | <p>1 MAFIC VOLCANIC ROCKS</p> <p>1a massive pillow or undifferentiated
1b pillowed flow
1c pillow or flow breccia
1d amygdaloidal
1e variolitic
1f porphyritic
1g pyroclastic</p> |
|--|--|--|--|

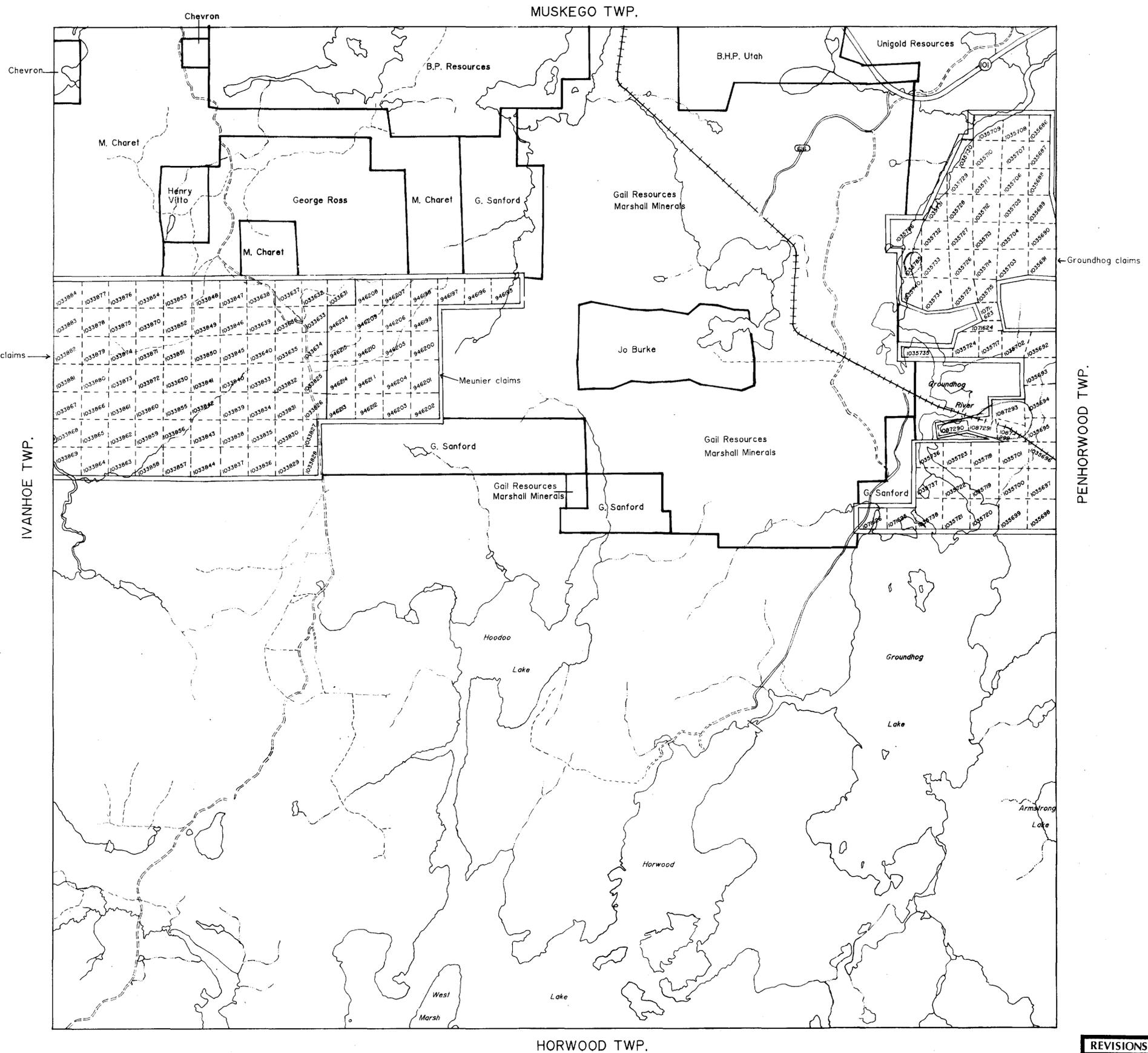
- | | | | |
|-------|--------------|---|-------------------------------------|
| qtz | quartz | | railway tracks |
| qv | quartz vein | ○ | diamond drill hole (depth known) |
| silic | silicified | ○ | (depth unknown) |
| carb | carbonate | ■ | claim post and lines (assumed post) |
| cc | calcite | | |
| ank | ankerite | | |
| ep | epidote | | |
| chl | chlorite | | |
| pyx | pyroxene | | |
| feld | feldspar | | |
| mag | magnetite | | |
| py | pyrite | | |
| po | pyrrhotite | | |
| cpy | chalcopyrite | | |

2.11889

Margaret Larson

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.	
	for GLEN AUDEN RESOURCES LIMITED	
	Title GROUNDHOG DRILL HOLE LOCATION MAP	
	Date: Nov. 15, 1988	Scale: 1: 2500 N.T.S.:
	Drawn: M.Z.	Approved: File: M-30





LEGEND

-  R.S. Middleton property boundary
-  other property boundaries
-  22 Meunier claim boundary

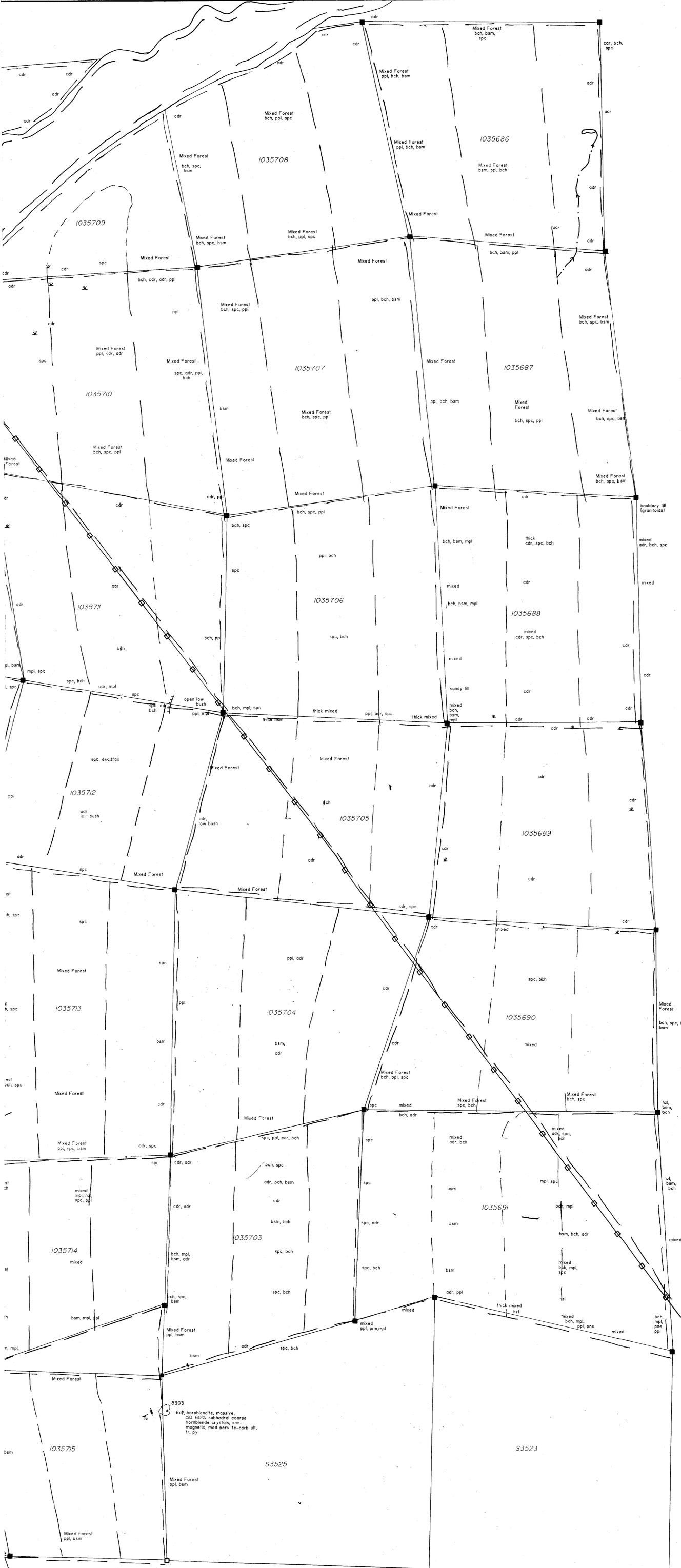
2.11889

Margaret Fenon

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for	GLEN AUDEN RESOURCES LTD.	
	Title	KEITH TOWNSHIP PROPERTY LOCATION AND CLAIM MAP	
	Date:	Nov. 88	Scale: 1:31,640
	Drawn:	JLB	Approved:
			File: M-310

Fig. 2





LEGEND

LATE INTRUSIVE ROCKS

- 8 Proterozoic diabase
- 7 EARLY FELSIC INTRUSIVE ROCKS
 - 7a granitic rocks
 - 7b quartz-feldspar porphyry
- 6 EARLY MAFIC AND INTERMEDIATE INTRUSIVE ROCKS
 - 6a gabbro
 - 6b pyroxene-porphyry
 - 6c diorite
 - 6d feldspar porphyry
- 5 ULTRAMAFIC ROCKS
 - 5a peridotite
 - 5b serpentinized peridotite
 - 5c komatiitic
 - 5d carbonatized ultramafic rock

SEDIMENTARY ROCKS

- 4a argillite
- 4b wacke (siltstone, sandstone)
- 4c conglomerate
- 4d chert
- 4e iron formation
- 4f graphitic rock
- 3 FELSIC VOLCANIC ROCKS
 - 3a massive flow or undifferentiated
 - 3b flow breccia
 - 3c porphyritic flow
 - 3d tuff, crystal tuff
 - 3e lapilli tuff
- 2 INTERMEDIATE VOLCANIC ROCKS
 - 2a massive flow or undifferentiated
 - 2b pillow flow
 - 2c flow breccia
 - 2d amygdaloidal
 - 2e porphyritic
 - 2f tuff, crystal tuff
 - 2g lapilli tuff
 - 2h agglomerate
 - 2j reworked tuff (tuffaceous)

MAFIC VOLCANIC ROCKS

- 1a massive pillow or undifferentiated
- 1b pillow flow
- 1c pillow or flow breccia
- 1d amygdaloidal
- 1e variolitic
- 1f porphyritic
- 1g pyroclastic

TREES

- cdr cedar
- spc spruce
- ppl poplar
- bsm balsam
- pne pine
- mpl maple
- adr alder
- lmk lamack
- bch birch

- sp foliation with dip
- cb cleavage with dip
- lineation with plunge
- jointing with dip
- drag fold
- △ brecciation
- bedding with dip and tops direction
- pillow lops direction
- shearing
- x, ⊙ outcrop, float
- scarp
- trench
- pit
- shaft
- esker
- swamp
- gravel road
- trail
- +++ railway tracks

- claim post and lines (assumed post)
- ▲ sample location and number (trace element)
- 8336 (wholerock and trace element)
- diamond drill hole

2. 11889

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GLEN AUDEN RESOURCES LIMITED		
	Title GROUNDHOG GEOLOGY MAP-NORTH SHEET		
	Date: Nov. 15, 1988 Scale: 1:2500 N.T.S.		
	Drawn: M.Z.	Approved:	File: M-30