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MINING LANDS SECTION

REPORT ON

RADIATION SURVEY

18-CLAIM GROUP

CASAN MINING LIMITED

GAUTHIER TOWNSHIP

EAST KIRKLAND LAKE GOLD AREA

ONTARIO

August 21, 1978

## INTRODUCTION

This report describes the results of a radiation survey, conducted by Casan Mining Limited, covering an 18-claim group property located in Gauthier Township, East Kirkland Lake gold area, Ontario. The survey was carried out by Mr. G. L. Roberts, P.Eng., in June 1978, using a 400-foot line grid, cut and chained on the property in 1976, and re-established for the 1978 program of exploration work. The results are depicted on Plan No. 5 accompanying this report, plotted to a scale 1" - 200'. Plans Nos. 1, 2 and 3 are magnetic and electromagnetic plans and compilation sheet prepared for the company in 1977. Plan No. 4 is the geological plan with data obtained during the same program of exploration work conducted in June 1978.

## SURVEY AREA

The 18 claims covered by the survey are contiguous and are identified as follows:

L-482773-8, inclusive  
L-440934-45, inclusive

## LOCATION AND ACCESS

The claim group is located at the north central part of Gauthier Township, one mile north of Dobie, tying onto the north of Upper Canada Mine.

Access was made by motorcar from Kirkland Lake via Highway 66 to Northlands Park eastward through the No. 1 shaft area of formerly Northland Mines Ltd. to a bush road which runs across the central part of the property.

#### PREVIOUS WORK

In the winter of 1976-77, the company conducted a program of magnetic and electromagnetic surveys on this 18-claim group. The results were described by the writer in a report dated January 20, 1977. Readers are referred to this report and another report on geological survey dated July 20, 1978, for work carried out on this claim group and for some of the history of the property.

#### TOPOGRAPHY AND GEOLOGY

Topography, inferred geology and general outline of outcrop areas are plotted with the radiation survey data on Plan No. 5.

In short, the property is on a partly eroded sand plain with many esker-like and dune-like sand hills that rise a few feet to 100 feet or more above swampy low ground. There are few small outcrop areas, commonly with few boulders and/or erratics in the immediate vicinity.

The north part of the property is mostly underlain by Keewatin acid volcanics and the central part is underlain by Timiskaming sediments with two narrow zones of interbanded acid volcanics. The southwest part of the property is underlain by Algoman syenite and porphyry syenite, intruding the sediments.

The volcanics and sediments are steeply dipping and apparently schistosed to various degrees. The contacts between the various rock formations are all covered by overburden.

#### SURVEY METHOD

The radiation survey was carried out by using a McPhar TV-1 scintillometer with 100-foot station readings. The instrument was calibrated at McPhar Geophysics Limited in Toronto and daily in the field.

Total count readings were taken at about two feet from the surface at all stations and recorded at  $\times 10^2$  per minute.

#### SURVEY RESULTS AND INTERPRETATION

Data obtained by the radiation survey are plotted on Plan No. 5 and contoured at  $25 \times 10^2$  counts per minute intervals.

In correlation with topography and geology, the results showed that radiation at the swamps, as a rule, ranged from 2500 to 5000 counts per minute. This is taken as the background range of radioactivity in the property area.

The sand hills are commonly ranged from 7500 to 11,000 counts per minute, similar to radiation registered in the outcrop areas of Timiskaming sediments. The sediments are commonly rich in potassium feldspar.

Similar but slightly higher range, from 15,000 to 17,500 counts per minute, was encountered along the partly exposed intrusive contact zone between Algoman syenite and Timiskaming sediments-volcanics, in the vicinity of shaft No. 2, Claim L-440934. A reading of 20,000 counts per minute was encountered at an outcrop of syenite along this contact zone.

The survey encountered no anomalous radiation at the few exposures of Timiskaming basal conglomerate. However, at the two small outcrop areas of Keewatin rhyolite, the survey encountered readings from 30,000 to 40,000 counts per minute. These are anomalous readings (about 8 times

background) similar in range to radioactive pegmatite with uranium possibilities known in other areas. Uranium mineralization occurs in some rhyolites in other provinces.

CONCLUSIONS AND RECOMMENDATIONS

The survey has encountered anomalous radiation over two small outcrop areas of Keewatin rhyolite. Further examination and sampling in these outcrop areas are justified and recommended.

Data obtained by the survey has been discussed in this report and may be used to correlate with other data to assist in further exploring the possibility of the property.

Respectfully submitted,

CANA EXPLORATION CONSULTANTS LIMITED



S. S. Szetu, Ph.D., P.Eng.

August 21, 1978



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MINING LANDS SECTION

REPORT ON  
GEOLOGICAL SURVEY  
18-CLAIM GROUP  
CASAN MINING LIMITED  
GAUTHIER TOWNSHIP  
EAST KIRKLAND LAKE GOLD AREA  
ONTARIO

July 20, 1978.

CANA EXPLORATION CONSULTANTS LIMITED

This report describes the results of a geological survey, conducted by Cana Exploration Consultants Limited, covering an 18-claim group property of Casan Mining Limited located in Gauthier Township, East Kirkland Lake gold area, Ontario. The survey was carried out by the writer of this report in June, 1978, using a line grid established on the property in the fall of 1976. The survey was hindered to an extent by the fact that picket lines located in the areas covered by timber mining was destroyed by recent ripping of the ground, using certain machinery, possibly for the purpose of reforestation. The picket lines thus destroyed had to be re-established. The survey data and interpretation are depicted on Plan No. 4 accompanying this report, plotted to a scale 1" = 200'. Plans Nos. 1, 2 and 3 are geophysical plans and compilation sheet prepared for the company in 1977.

SURVEYED AREA:

The 18 claims covered by the survey are contiguous and are identified as follows:

L-482773-8, inclusive; L-440936-45, inclusive;

L-440934 and L-440935.

The writer also made a traverse through the company's additional three claims tying onto the northwest of the surveyed area. These three claims appeared to be covered by sand plain, sand ridges and lakes.

#### LOCATION AND ACCESS:

The property is located at the north central part of Gauthier Township, one mile north of Dobie, tying onto the north of Upper Canada Mine. It extends northwesterly, with its northwest part adjoining to the northeast of Crestland Mines Limited, formerly Northland Mines Limited.

Access was made by motor car from Kirkland Lake via Highway 66 to Northlands Park, and by a bush road from Northlands Park eastward through the No. 1 shaft area of Northland Mines to the bush road which runs across the central part of the property.

#### PREVIOUS WORK:

In the winter of 1976-77, the company conducted a program of geophysical surveys on this 18-claim group. The surveys were carried out by Cana Exploration Consultants Limited, and the results were described by the writer in a report dated January 20, 1977. Readers are referred to this report for the geophysical data and also to the history of the property.

It should be noted here that the airborne E. M. anomaly referred to in said report was conducted by Upper Canada Mines Limited, apparently prior to May, 1966, and the ground follow-up E. M. surveys were conducted in March and May, 1966 by Moreau Woodard & Company Limited of Toronto. While the first survey failed, the second survey succeeded in detecting a conductor zone at an inferred depth of over 210' on the ground held under option by Upper Canada. The conductor zone opens to the west to a patented claim then held by Northland.



Data in the office of the Resident Geologist at Kirkland Lake also showed one hole drilled in 1966 on the then known as Taylor Option, logged by J. G. Bragg, Chief Geologist, Upper Canada Mines Limited. This hole was located at the central part of then Claim 79866 across the eastern section of the airborne E. M. anomaly, which showed stronger conduction to the west. The hole cut a narrow band of graphitic sediments with occasional bands and nodules of pyrite at a considerable depth.

Another hole was drilled to a shallow depth of 148.6' at a location further east by the then owner of the property, Mr. T. C. Taylor, for assessment work purposes. According to Mr. Taylor, the drill site found near L28N, 1450' E, was the setup for this shallow hole.

As Casan Mining Limited now has claims covering the full lengths of the airborne conductor, including the unchecked and apparently more outstanding western section, detailed information about these drill holes and other relevant data will be added to the company's compilation map (Map No. 3) for further evaluation.

#### TOPOGRAPHY:

The property is largely covered by swamps with scattered sand hills that rise a few feet to about 100' or more above low ground. Some of these hills are elongated esker-like, others are dune-like. No gravel was observed at any of these sand hills. Few boulders and erratics are located in the vicinities of the few outcrop areas.

The ripping of flat ground in the areas covered by timber mining for reforestation has exposed nothing but sand. The drill hole put down by Upper Canada and referred to in the previous section of this report intersected 110' of sand over 63' of gravel before cutting bedrock.

The topography is thus a partly eroded sand plain with many swamps, a few creeks, a few narrow and small outcrop areas.

GENERAL GEOLOGY:

General geology of the area is on Map No. 50c, accompanying report Vol. L, Part VIII, 1941, by J. E. Thomson and A. T. Griffis, and on Map No. 32e, accompanying report by A. G. Barrows and P. E. Hopkins in Vol. XXXII, Part 4, 1923, all by Ontario Department of Mines.

According to these maps, the property area is underlain by a north-west-striking belt of Timiskaming sediments and volcanics, overlying Keewatin volcanics and intruded from the southwest by a large stock of Algoman syenite. The main difference between the two maps are the classification by Barrows and Hopkins of a small outcrop of Algoman black lamprophyre, grading occasionally into a reddish lamprophyre or syenite and located at the south boundary area of the claim group, while Thomson and Griffis mapped it as trachyte. In fact, a large area of said lamprophyre of Barrows and Hopkins located to the southwest of the property area was classified by Thomson and Griffis as Timiskaming trachyte.

The various rock formations with their different members as noted in the field and in correlation with the geology of the township, given by Jas. E. Thomson and A. T. Griffis, are classified as follows:

Quaternary

Pleistocene: sand, clay  
- Great unconformity -

Pre-Cambrian

Algoman: syenite (and syenite porphyry)  
- Intrusive contact

Timiskaming: (Acid volcanics: tuff, trachyte  
(  
(Sediments: greywacke, arkosic  
( greywacke, greywacke with some small  
( pebbles, conglomerate, slaty and sheared  
( sediment, strongly carbonatized sediment

Keewatin: (Andesite  
(  
(Acid volcanics: Rhyolite, bedded tuff.

DETAILED GEOLOGY:

Keewatin Series:- The north part of the property is apparently mostly underlain by Keewatin acid volcanics as several outcrops of mostly rhyolite was observed in trenched areas along the Keewatin-Timiskaming contact zone, and calcareous bedded tuff was observed further north along the east boundary. Drill holes by Taylor and Upper Canada intersected the same at the northwest part of the property. Further north, the acid volcanics are interbedded with andesite.

There is only one small occurrence of andesite found on the property. This, however, appears to be an erratic located between L8S and L4S near 18 + 50'E. It is a greenish dark grey, fine-grained volcanic rock and is apparently more basic than the rhyolite. As the geology at the northeastern part of the property is largely unknown and previous ground magnetic survey encountered an area of slightly higher magnetic intensity there, it is not entirely impossible to have interbedded andesite underlain on this part of the property.

Typical light grey rhyolite was observed on L24N, 600' to 750' E. It is mineralized with pyrite. It has some fine quartz-calcite veinlets and odd silicious fragments. The small outcrops found to the west near L28N are located along a long trench which is largely covered by overburden. The rocks are apparently carbonated in part. There is a small pile of vein quartz found at the trench to indicate the occurrence of a quartz vein. The rhyolite occurs at the trenches around L4S, 1750' to 1800' E. grades from slightly greenish-grey to light grey, also mineralized with pyrite in places, and has several quartz veins or veinlets. Few quartz veinlets appeared to have been injected at a sharp angle to some schistosity observed in part of the rhyolite. Clearing of debris, overburden and pumping out of water are required for further examination.

The bedded tuff observed between L0 and 4S, near the east boundary of the property, is a very soft light grey carbonated tuff. It is schistosed

and strikes toward the old drill hole located near L28N. Mr. Taylor cut carbonated tuff in this shallow drill hole.

Timiskaming Series:- The central section of the property is apparently mostly underlain by Timiskaming sediments which has a narrow but distinct zone of conglomerate along its north contact with the Keewatin volcanics for a considerable distance at the eastern part of the property. It is not certain if this zone tapers out toward the west. Pebbles and boulders are up to 6" in length and are largely greenstone, porphyries, acid lavas and quartz.

Overlying this conglomerate is the fine-grained greywacke which is the predominant rock type among the sediments. Noticeable crystals in the fine-grained greywacke are feldspar and quartz. When the grains are coarser, the feldspars appear more prominent and are marked as arkosic greywacke. Although quartzite was noted in this series by others in this township, crystals of feldspar are always predominant over quartz in the outcrops examined by the writer.

A layer of small pebbles was observed at a small outcrop between L12N and L16N, about 650' from the assumed north boundary and probable base of the formation of sediments. A somewhat similar occurrence is located at 1400'E, L24S.

The sediments are more or less schistosed and accentuated at the slaty parts. One outstanding outcrop located at L24N, 275'E, 30'S is strongly schistosed or sheared and has the appearance of a tuff, except

for the occurrence of possible sand grains in part. In fact, this outcrop was mapped as trachitic tuff in the field as it is located a short distance from an area of rhyolite. However, geological map No. 50c indicated that this outcrop is a sediment and thus noted as sheared sediment on Plan No. 4. Microscopic examination is required for its identification.

At the south part of the property a band of slaty and strongly sheared sediments is located near and to the southeast of No. 2 shaft. Elongation of crystals around harder quartz grains and the elongation of different sedimentary bands are visible using a hand lens. Greywacke in the vicinity is apparently more or less sheared, lighter in colour and finer grained than common to the north. No attempt was made to study grain gradations as parts of the trenches and outcrops were covered by debris, overburden and/or water. Map No. 50c of O. D. M. indicates that such studies showed that the beds have been overturned.

To the northwest of No. 2 shaft and along the contact zone with syenite, there is a narrow zone of dark grey to brownish-grey calcareous rock which carried visible grains of calcite crystals in an aphanitic groundmass. This zone is noted as strongly carbonated sediment with two outcrops located between L16S and L20S.

In addition to the sediments, the Timiskaming series consists of interbanded volcanics. On L24S, 1525'W, 20'N, 25' northeast of an outcrop of syenite, there is a dark grey fine-grained rock which looks like lamprophyre but without phenocrysts of mica. Weak trachitic texture was

noted in places. The rock carries some calcite veinlets. The location corresponds closely to an outcrop of trachyte noted on the above-said Map No. 50c. It also corresponds in location to an outcrop area noted as lamprophyre, in contact with syenite, on Map No. 32e by A. G. Burrows and P. E. Hopkins. Further study is required.

On L20N, 250'W and about 100'S, there is an outcrop of bedded tuff which is brownish-grey in colour, somewhat felsic and without quartz grains. Adjoining to the southeast, there are outcrops and trenches which showed the occurrence of a slightly greenish-grey, fine to medium-grained trachitic rock. This rock carries some hairline calcite-quartz veinlets and streaks of minute pyrite in places. The tuff and trachyte are inferred as representing a zone of interbanded acid volcanics located near the central part of the Timiskaming sediments.

Algoman:- There are three small outcrops of Algoman syenite observed on the southwest part of the property, two of which were tested by trenching. The syenite is reddish-brown to grey, fine to medium-grained, with scattered pyrite cubes. The best exposure is at the trench located on L16S, 1060'W, 20'S from the picket line where the syenite is somewhat porphyritic and samples collected in 1975 by the staker assayed 0.03 oz/Au per ton.

A boulder of syenite porphyry was observed a short distance from a trench located on L4S to indicate the possibility of having syenite porphyry

associated with the syenite. In fact, some of the loose fragments from this trench are somewhat porphyritic.

#### STRUCTURAL GEOLOGY:

Detailed structural data of the outcrop observed in the field are depicted on the plan (Plan No. 4), accompanying this report. Although there are not many outcrops, the schistosity measurements are apparently helpful for structural interpretation, which, as depicted on the plan, is similar to that given by Thomson and Griffis on Map No. 50c, except for the following:

- (1) There is a band of acid volcanics located within the Timiskaming sediments.
- (2) There is a narrow zone of strongly carbonated rock located along the syenite contact in the vicinity of the No. 2 shaft. This carbonated zone was described by Thomson and Griffis but not indicated on Map No. 50c.
- (3) Schistositities observed are, as a rule, dipping steeply northeast. As some overturned beds were observed by Government geologists in the area, it is probable that some folding may occur within the large inferred section of Timiskaming sediments. A possible synclinal fold may be located along the interbanded acid volcanics.
- (4) Shear zones, other than that observed along the syenite contact at the No. 2 shaft area, may occur within the steeply dipping, more or less schistosed sediments.



- (5) The Keewatin volcanics may occur in zones of different rock types running more or less parallel to its boundary with the Timiskaming sediments.

The above-mentioned points will be further discussed when a compilation of all data on the property is completed and a correlation with ground geophysical data is made.

MINERAL OCCURRENCES:

According to information obtained from the operators of former Northland Gold Mines Limited, interesting ore-grade gold mineralization was obtained in a vein at the No. 2 shaft. Details of this will be given in the future. However, except for a few pieces of vein material found at the dump, trenches at the No. 2 shaft are well obscured by debris and vegetation.

Free gold was said to have been observed at the trenches located on L4S, 1800'E. Many loose and in-place vein materials were observed and collected for assaying. These samples are mineralized with pyrite, but no free gold was observed by the writer. Some clearing and dewatering are required for a thorough examination.

The mineralized quartz found at a long trench located to the south of L28N, 500'E, will also be assayed for gold. This trench should also be cleared for examination.

As mentioned before, 0.03 oz/Au per ton was found in a sample of syenite collected from a trench located on the property. The mineralized rhyolite will be tested by semi-quantitative spectrographic analysis for gold and base-metal possibilities.

CONCLUSIONS AND RECOMMENDATIONS:

The geological survey has obtained useful data for further understanding of the rock formations and structures of the property. A general interpretation of these are given on Plan No. 4 accompanying this report. Several new observations have been made. Further studies and more detailed interpretation will be made when correlated with other data obtained or to be obtained on the property.

The survey, however, failed to examine closely gold occurrences said to be located on the property due to the fact that the occurrences are obscured by debris, vegetation and water in the trenches. The interesting trenches have to be cleared for further examination and sampling. A program of surface sampling will be recommended when all data regarding this property are compiled for the company.

Respectfully submitted,

CANA EXPLORATION CONSULTANTS LIMITED

SSS:rk  
Encl.  
Toronto, Ontario  
July 20, 1978

*S. S. Szetu*  
S. S. Szetu, Ph. D., P. Eng.  
Consulting Geologist

*Qualification*  
*63,1064*

CANA EXPLORATION CONSULTANTS LIMITED



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REPORT ON  
SOIL SAMPLINGS  
DEPTH PENETRATION OF OVERBURDEN  
AND  
GEOCHEMICAL SURVEY

18 - CLAIM GROUP  
CASAN MINING LIMITED  
GAUTHIER TOWNSHIP  
EAST KIRKLAND LAKE GOLD AREA  
ONTARIO

DECEMBER 10, 1978

BY: G.L.ROBERTS  
P.ENG.,M.E.I.C.

CANDALE MINING MANAGEMENT SERVICES LTD

INTRODUCTION

This report describes the results of a program of soil samplings, depth penetrations, and geochemical survey conducted and carried out under the supervision of Candale Mining Management Services Ltd covering an 18 claim group property of Casan Mining Limited located in Gauthier Township, East Kirkland Lake Gold Area, Ontario. The work was carried out by the writer and his assistants in June, July, August, and September of this year (1978), using a line grid originally established on the property in the fall of 1976 and which had to be extensively restaked.

SURVEYED AREA

The 18 claims covered by this report are continuous and are identified as follows;

L-482773	L-440934
L-482774	L-440935
L-482775	L-440936
L-482775	L-440937
L-482776	L-440938
L-482777	L-440939
L-482778	L-440940
	L-440941
	L-440942
	L-440943
	L-440944
	L-440945

LOCATION AND ACCESS

The property is located at the north central part of Gauthier Township, one mile north of Dobie, tying onto the north of Upper Canada Mine. It extends northwesterly with its northwest part adjoining to the northeast of Crestland Mines Limited, formerly Northland Mines Limited.

Access was made by motor car from Kirkland Lake via Highway 66 to Northlands Park, and by a bush road from Northlands Park eastward through the No. 1 shaft area of Northland Mines to the bush road which runs across the central part of the property.

PREVIOUS WORK

In the winter of 1976-77, the company conducted a program of geophysical surveys on this 18 claim group. The surveys were carried out by Cana Exploration Consultants Limited, and the results were described by Dr. S.S.Szetu in a report dated January 20, 1977. Readers are referred to this report for the geophysical data and also to the history of the property.

It should be noted here that the airborne E.M. anomaly referred to in said report was conducted by Upper Canada Mines Limited, apparently prior to May, 1966, and the ground follow-up E.M. surveys were conducted in March and May, 1966 by Moreau Woodward & Company Limited of Toronto. While the first survey failed, the second survey succeeded in detecting a

conductor zone at an inferred depth of over 210' on the ground held under option by Upper Canada. The conductor zone opens to the west to a patented claim then held by Northland.

Data in the office of the Resident Geologist at Kirkland Lake also showed one hole drilled in 1966 on the then known as Taylor Option, logged by J.G.Bragg, Chief Geologist, Upper Canada Mines Limited. This hole was located at the central part of then Claim 79866 across the eastern section of the airborne E.M. anomaly, which showed stronger conduction to the west. The hole cut a narrow band of graphite sediments with occasional bands and nodules of pyrite at a considerable depth.

Another hole was drilled to a shallow depth of 148.6' at a location further east by the then owner of the property, Mr. T. C. Taylor, for assessment work purposes. According to Mr. Taylor, the drill site found near L28N, 1450' E. was the setup for this shallow hole.

As Casan Mining Limited now has claims covering the full lengths of the airborne conductor, including the unchecked and apparently more outstanding western section, detailed information about these drill holes and other relevant data will be added to the company's compilation map for further evaluation. During the month of June 1978 the company, Casan Mining Limited, conducted two programs, a geological survey and a radiation survey on this 18 claim group. The surveys were carried out by Cana Exploration Consultants Limited under the direction of Dr. S.S.Szetu and the results are described by the author, Dr. S.S. Szetu in his reports dated July 20, 1978 and August 21, 1978.

FIELD CREWS

The work was carried out in July of 1978 by the author and Mr. Karl Remazki using a 6' steel auger.

All samples were logged, bagged, and numbered as noted. The samples are presently being held for future chemical analysis.

SUMMARY OF WORK

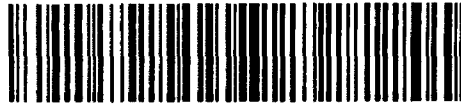
The attached Map No. 11 details the location of the soil samples obtained and the depth of auger penetration made through the soil overburden to sand or rock strata.

Where the depth penetration is shown as 6' then the swamp overburden was in excess of this depth and the soil sample was taken at the 6'-0" depth regardless.

Sample numbers are in numerical order from 1-825 and are taken on the stations of the control grid as indicated.

STORAGE OF SAMPLES

All samples have been crushed and dried and are presently held in a heated and dry location at 1350 Winding Trail, Mississauga, Ontario. Gold analysis of these samples are still to be made for the assessment year 1979 and when the available funding becomes available.



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REPORT ON  
DRILLING,  
STRIPPING,  
ROCK TRENCHING,  
&  
ASSAYING

18 - CLAIM GROUP  
CASAN MINING LIMITED  
GAUTHIER TOWNSHIP  
EAST KIRKLAND LAKE GOLD AREA  
ONTARIO

December 10, 1978

By; G.L. ROBERTS  
P.ENG., M.E.I.C.

CANDALE MINING MANAGEMENT SERVICES LTD.



INTRODUCTION

This report describes the results of a program of drilling, stripping, rock sampling, and assaying conducted and carried out under the supervision of Candale Mining Management Services Ltd covering an 18 claim group property of Casan Mining Limited located in Gauthier Township, East Kirkland Lake Gold Area, Ontario. The work was carried out by the writer and his assistants in June, July, August, and September of this year (1978), using a line grid originally established on the property in the fall of 1976 and which had to be extensively restaked.

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### GEOLOGY

The north part of the property is mostly underlain by Keewatin acid volcanics and the central part is underlain by Timiskaming sediments with two narrow zones of interbanded acid volcanics. The south west part of the property is underlain by Algoman Syenite and porphyry syenite, intruding the sediments.

The volcanics and sediments are steeply dipping and apparently schistosed to various degrees. The contacts between the various rock formations are all covered by overburden.

### GENERAL

The geological report produced for Casan Mining Limited by Cana Exploration Consultants Ltd. and written by Dr.S.S. Szetu dated July 20, 1978 requested that detailed surface sampling of the claims held by this company should be carried out before any drilling exploration be undertaken.

Casan Mining Limited contracted with Dynamic Construction Ltd. of Toronto to undertake the excavation of trenches and surface blasting, trenching and drilling that would allow detailed sampling of the rock areas available for exploration.

### TOPOGRAPHY

Most of the area covered by the claims involved is covered with glacial sand overburden to depths of up to 150'. Few areas have rock exposed on or near the surface which would allow sampling to a definitive extent. Many swamps and a few creeks are present. Sand eskers rising to 100' are common.

### OLD WORKINGS

Old trenches that could be found were from the 1920's and the most recent 1940's exploration periods and as such were fully overgrown with trees and in many cases had reverted to their original sand overburdened condition.

### RESEARCH OF PREVIOUS EXPLORATION

Extensive research was conducted into the previous drilling programs and with the help of the Northern Miner records and the few Consolidated Northland Mine records that were still available, we have produced a map showing all previous drill holes carried out on the property.

A personal interview between myself and Mr. Byrne, who conducted the drilling operation for Consolidated Northland Mines in the 1940's confirmed that no instrumentation in Magnetometer, Electromagnetic or Radiation were ever conducted on these claims during their ownership.

It is interesting to note that when the up to date E.M. anomalies we have since obtained are plotted over the old drilling holes that all drill holes miss the newly indicated E.M. anomalies.

### TIME PERIOD OF WORK INVOLVED

Surface sampling was carried out by machine and hand labour over the period of the summer of 1978.

### PICKET LINE RESTAKING

Extensive restaking of the picket lines had to be carried out as the original pickets had been knocked down by government

tree planting machines. This took a considerable amount of time and held up the crews for several days.

#### ROAD CONSTRUCTION

Vehicle roads had to be repaired and cut to facilitate the entry of vehicles onto the property. Bridges over beaver dams had to be rebuilt.

#### OBSERVATIONS

An interview with Mr. T.C. Taylor, who is now retired and who was, at one time, underground drilling superintendent for the old Upper Canada Gold Mines which hold the adjacent claims to the south of Casan's stated that any mineral occurrence on these properties would only be struck at a depth in excess of 1000' since this had been the general record of Upper Canada findings. Mr. Taylor had held at one time or another several claims to the north of Casan's which he had drilled personally or had contracted to Upper Canada for drilling and development.

From Mr. Taylor's experience and drilling information recorded and verbal, that was obtained from employees of the old Consolidated Northland gold mines, it was evident that shallow (i.e. 100' - 400') diamond drilled holes would not give positive indications of the true ore holding at economic development depths but that only holes in excess of 1000' would be of any true worth.

CONCLUSION OF RESEARCH

Original plans were therefore abandoned and additional ground surveys and trenching assessments should be conducted in order to locate a test hole that would minimize the risk of obtaining a 'dry hole' and that would justify the expense of the one hole depth of 2000' at a cost of \$60,000 per hole minimum.

GENERAL WORK UNDERTAKEN

Dynamic Construction Ltd under our direction opened up for inspection the following;

1/ Approximately 1305 linear feet of trenching, including removal of trees, overburden blasting and breakage and excavation of rock.

2/ Twenty-five (25) drill holes between 6' - 8' in depth to determine bed rock.

3/ 12' deep shaft - removal of overburden, pumping out of ground water, excavation of rock in a 6' X 6' square shaft.

4/ 5' pit - removal of overburden, pumping out of water, breakage and excavation of rock.

ROCK SAMPLING

In each of the already named above areas, a careful study was made of the trenches and pits for mineralization. The trenches and pits were thoroughly examined. The walls and floors which contained outcrop were cross sectioned and veins or areas in which there was either mineralization or which looked anomolous were removed from their location, catalogued, and subjected to assaying. The detailed results of the work conducted in each of these locations is described in detail on the following pages along with copies of the assayed analysis received from an independent technical service laboratory.



INVOICE

**Dynamic Construction Ltd.**

1350 WINDING TRAIL, #86  
MISSISSAUGA, ONTARIO L4Y 2T8

INVOICE TO: CASAN MINING LIMITED  
Suite 220  
12 Richmond St. E.,  
Toronto, Ontario

For work carried out during 1978 on the 18 claims known as the Old Northland Gold Mines;

1305 linear feet of trenching, including removal of trees, overburden blasting and breakage of rock

25 drill holes - 6-8' auger holes to determine bed rock

12' shaft removal of overburden, pumping out of ground water, breakage and removal of rock

5' pit Removal of overburden, pumping out of water, breakage and removal of rock.

Work completed of Kirkland Lake Claims;

L16N	75'	New Trench
L20N	120'	Reopened Trench
L24N	25' bore holes, 6' depth -	
L4S	100'	Reopened Trench
	12' shaft	Excavation
	300'	Reopened Trench
	50'	Reopened Trench
L24N	160'	Reopened Trench
L28N	150'	Reopened Trench
L22S	150'	Reopened Trench
	100'	Reopened Trench
L16S	100'	Reopened Trench
	5' pit	

Total 1305' trenching  
25 X 6' drill holes, 150 linear feet  
12' depth shaft 6' X 6'  
5' depth pit

TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT C. 112  
TRENCH NEAR BEAVER DAM  
SAMPLE NO 2795*
- 2/ DRAWING REFERENCE *PLAN 10 D.  
LINE NO L165*
- 3/ TOPOGRAPHY *SWAMPY  
BEAVER DAM.*
- 4/ DATE *SEPTEMBER 1978.*
- 5/ DETAILS OF PIT *REOPENED. OLD PIT & CARRIED  
OUT NEW EXCAVATION IN AREA*
- 6/ SAMPLING CARRIED OUT BY *MR KARL RAMAZKI.*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS TRENCH WERE  
OBTAINED. THE MOST PROMISING  
SAMPLE WAS ASSAYED.*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD  
SEPTEMBER 1978.*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960216

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Burhamdale Investments

REPORT No.

T - 08064

Inv. #9018

SAMPLE(S) OF ROCK

Gold (Au) oz/ton

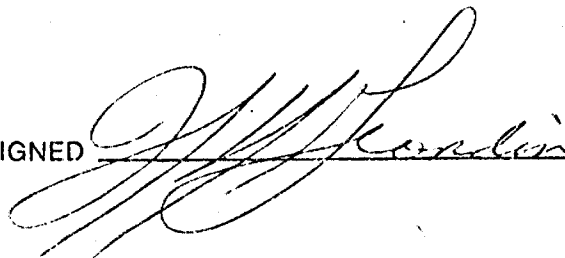
2795

<0.001

Samples, Pulps and Rejects discarded after two months

DATE September 20th, 1978.

SIGNED



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT D  
SAMPLE NO 2803*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO L45*
- 3/ TOPOGRAPHY *TREE & BUSH OVERBURDEN.  
HEAVY SPRUCE REGROWTH*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED DEEPENED  
& EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI  
MR G.L. ROBERTS  
MR G.C. ROBERTS.*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 25 AREAS  
FROM THIS TRENCH PORTION WERE  
OBTAINED THE MOST PROMISING  
SAMPLE WAS ASSAYED.*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO.  
CASSON MINING LTD.,  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

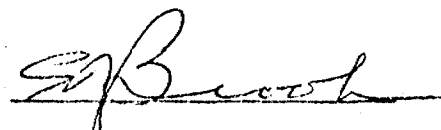
2797	nil
99	0.04
2800	nil
01	nil
02	nil
03	nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT D  
SAMPLE NO. 4*
- 2/ DRAWING REFERENCE *PLAN 10  
LINE L45.*
- 3/ TOPOGRAPHY *TREE & BUSH OUEBURDEN  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *JULY 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED DEEPEMED  
& EXTENDED*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS TRENCH PORTION WERE  
OBTAINED THE MOST PROMISING.  
SAMPLE WAS ASSAYED.*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEETS*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.  
T - 07937

Inv. #8876

SAMPLE(S) OF ROCKS

	<u>#2</u>	<u>#3</u>	<u>#4</u>
Gold (Au) oz/ton	0.003	0.008	0.001

Samples, Pulps and Rejects discarded after two months

DATE August 31, 1978.

SIGNED *[Signature]*



- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.

T - 07937

Inv. #8876

SAMPLE(S) OF ROCKS

	Sample # 2	Sample # 3	Sample # 4		Sample # 2	Sample # 3	Sample # 4
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	H	H	H	Manganese	.05%	.1%	.05%
Antimony	-	-	-	Magnesium (MgO)	2%	2%	3%
Arsenic	-	1%	-	Molybdenum	-	-	-
Barium	.2%	.2%	.2%	Neodymium (Nd <sub>2</sub> O <sub>3</sub> )	-	-	-
Beryllium (BeO)	-	-	-	Nickel	.002%	.001%	.002%
Bismuth	-	-	-	Phosphorus	-	-	-
Boron	.01%	.005%	-	Silver	-	-	-
Calcium (CaO)	2%	3%	2%	Silicon (SiO <sub>2</sub> )	H	H	H
Cadmium	-	-	-	Sodium (Na <sub>2</sub> O)	2%	2%	2%
Cerium (CeO <sub>2</sub> )	-	-	-	Strontium	.1%	.2%	.1%
Chromium	-	-	.02%	Tantalum (Ta <sub>2</sub> O <sub>5</sub> )	-	-	-
Cobalt	<.01%	<.01%	<.01%	Thorium (ThO <sub>2</sub> )	-	-	-
Columbium (Cb <sub>2</sub> O <sub>5</sub> )	-	-	-	Tin	-	-	-
Copper	.005%	.002%	.001%	Titanium	.2%	.2%	.5%
Gallium	.001%	.001%	.001%	Tungsten	-	-	-
Germanium	-	-	-	Uranium (U <sub>3</sub> O <sub>8</sub> )	-	-	-
Iron (Fe)	5%	5%	5%	Vanadium	.02%	.02%	.02%
Lanthanum (La <sub>2</sub> O <sub>3</sub> )	-	-	-	Yttrium (Y <sub>2</sub> O <sub>3</sub> )	.001%	.001%	.001%
Lead	-	.01%	-	Zinc	-	-	-
Lithium (Li <sub>2</sub> O)	-	-	-	Zirconium (ZrO <sub>2</sub> )	.01%	.01%	<.01%
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE H - High - 10 - 100% approx.  
M - Medium - 1 - 10% approx.  
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found  
X Not Looked For  
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED

*[Signature]*





TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT D.  
SAMPLE NO 5*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO L45.*
- 3/ TOPOGRAPHY *TREE & BUSH OVERBURDEN.  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *JULY 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED DEEPEMED  
& EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS.  
FROM THIS TRENCH PORTION  
WERE OBTAINED, THE MOST  
PROMISING SAMPLE WAS ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET.*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3469 PAGE

TO. CANDATE MINING  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3469

SAMPLE(S) OF 4 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

1	nil
5	trace
6	0.02
200	0.02

Note: traces less than 0.01 oz/ton Au

X-RAY ASSAY LABORATORIES LIMITED

DATE Aug. 31/78.

CERTIFIED BY 

TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT D.  
SAMPLE NO 2.*
- 2/ DRAWING REFERENCE *PLAN 100  
LINE L45*
- 3/ TOPOGRAPHY *TREE & BUSH OUBURDEN  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *JULY 1978.*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED DEEPENED  
& EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS PORTION OF THE  
TRENCH WERE OBTAINED THE  
MOST PROMISING SAMPLE WAS  
ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEETS*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.

T - 07937

Inv. #8876

SAMPLE(S) OF ROCKS

	<u>#2</u>	<u>#3</u>	<u>#4</u>
Gold (Au) oz/ton	0.003	0.008	0.001

Samples, Pulps and Rejects discarded after two months

DATE August 31, 1978.

SIGNED *[Signature]*



- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.

T - 07937

Inv. #8876

SAMPLE(S) OF ROCKS

	Sample # 2	Sample # 3	Sample # 4		Sample # 2	Sample # 3	Sample # 4
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	H	H	H	Manganese	.05%	.1%	.05%
Antimony	-	-	-	Magnesium (MgO)	2%	2%	3%
Arsenic	-	1%	-	Molybdenum	-	-	-
Barium	.2%	.2%	.2%	Neodymium (Nd <sub>2</sub> O <sub>3</sub> )	-	-	-
Beryllium (BeO)	-	-	-	Nickel	.002%	.001%	.002%
Bismuth	-	-	-	Phosphorus	-	-	-
Boron	.01%	.005%	-	Silver	-	-	-
Calcium (CaO)	2%	3%	2%	Silicon (SiO <sub>2</sub> )	H	H	H
Cadmium	-	-	-	Sodium (Na <sub>2</sub> O)	2%	2%	2%
Cerium (CeO <sub>2</sub> )	-	-	-	Strontium	.1%	.2%	.1%
Chromium	-	-	.02%	Tantalum (Ta <sub>2</sub> O <sub>5</sub> )	-	-	-
Cobalt	<.01%	<.01%	<.01%	Thorium (ThO <sub>2</sub> )	-	-	-
Columbium (Cb <sub>2</sub> O <sub>5</sub> )	-	-	-	Tin	-	-	-
Copper	.005%	.002%	.001%	Titanium	.2%	.2%	.5%
Gallium	.001%	.001%	.001%	Tungsten	-	-	-
Germanium	-	-	-	Uranium (U <sub>2</sub> O <sub>3</sub> )	-	-	-
Iron (Fe)	5%	5%	5%	Vanadium	.02%	.02%	.02%
Lanthanum (La <sub>2</sub> O <sub>3</sub> )	-	-	-	Yttrium (Y <sub>2</sub> O <sub>3</sub> )	.001%	.001%	.001%
Lead	-	.01%	-	Zinc	-	-	-
Lithium (Li <sub>2</sub> O)	-	-	-	Zirconium (ZrO <sub>2</sub> )	.01%	.01%	<.01%
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE H - High - 10 - 100% approx.  
M - Medium - 1 - 10% approx.  
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found  
X Not Looked For  
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED

*Hebman*



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT E (LOST TRENCH)  
SAMPLE NO 2801*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO L45*
- 3/ TOPOGRAPHY *TREE, SAND & BUSH OUEBURDEN.  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *AUGUST 1978.*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED;  
DEEPEMED & EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR. KARL REMAZKI  
MR GL ROBERTS*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 15 AREAS  
FROM THIS TRENCH WERE OBTAINED  
THE MOST PROMISING SAMPLE  
WAS ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO.

CASSON MINING LTD.,  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

2797	nil
99	0.04
2800	nil
01	nil
02	nil
03	nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY

TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT F.  
SAMPLE NO 2802.*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO 45*
- 3/ TOPOGRAPHY *TREE & BUSH OVERBURDEN  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED  
DEEPEMED & EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL. REMAZKI  
MR G.L. ROBERTS  
MR G.C. ROBERTS*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 15 AREAS  
FROM THIS TRENCH WERE  
OBTAINED THE MOST PROMISING  
SAMPLE WAS ASSAYED.*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET.*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*



# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO. **CASZON MINING LTD.,**  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

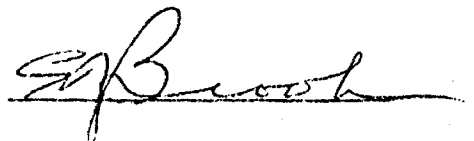
Sample	Auoz/ton
2797	nil
99	0.04
2800	nil
01	nil
02	nil
03	nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT G*  
*SAMPLE 2796*
- 2/ DRAWING REFERENCE *PLAN N<sup>o</sup> 10*  
*LINE L16N*
- 3/ TOPOGRAPHY *2'-3' OUERBURDEN*  
*SPRUCE TREE REGROWTH AREA.*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *NEW TRENCH.*
- 6/ SAMPLING CARRIED OUT BY *MR. KARL REMAZKI.*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS*  
*FROM THIS TRENCH WERE OBTAINED*  
*THE MOST PROMISING SAMPLE WAS*  
*ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEETS*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM **Cassan Mining,  
Unit 86,  
1350 Winding Trall,  
Mississauga, Ontario.**

REPORT No.  
**T - 07938**

Inv. #8875

SAMPLE(S) OF ROCKS

	<u>2796</u> ✓	<u>2798</u>
Gold (Au) oz /ton	0.001	0.001

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED *M. Delbrun*



- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM

Cassan Mining,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.

T - 07938

SAMPLE(S) OF

ROCKS

	Sample 2796	Sample 2798	Sample	Sample 2796	Sample 2798	Sample
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	H	H	Manganese	.05%	.05%	
Antimony	-	-	Magnesium (MgO)	3%	2%	
Arsenic	-	-	Molybdenum	-	-	
Barium	.1%	.2%	Neodymium (Nd <sub>2</sub> O <sub>3</sub> )	-	-	
Beryllium (BeO)	-	-	Nickel	.005%	.002%	
Bismuth	-	-	Phosphorus	-	-	
Boron	-	-	Silver	-	-	
Calcium (CaO)	2%	3%	Silicon (SiO <sub>2</sub> )	H	H	
Cadmium	-	-	Sodium (Na <sub>2</sub> O)	2%	2%	
Cerium (CeO <sub>2</sub> )	-	-	Strontium	.05%	.1%	
Chromium	.03%	.01%	Tantalum (Ta <sub>2</sub> O <sub>5</sub> )	-	-	
Cobalt	<.01%	<.01%	Thorium (ThO <sub>2</sub> )	-	-	
Columbium (Cb <sub>2</sub> O <sub>5</sub> )	-	-	Tin	-	-	
Copper	.001%	.002%	Titanium	.5%	.5%	
Gallium	.001%	.001%	Tungsten	-	-	
Germanium	-	-	Uranium (U <sub>3</sub> O <sub>8</sub> )	-	-	
Iron (Fe)	5%	5%	Vanadium	.02%	.02%	
Lanthanum (La <sub>2</sub> O <sub>3</sub> )	-	-	Yttrium (Y <sub>2</sub> O <sub>3</sub> )	-	-	
Lead	-	-	Zinc	-	-	
Lithium (Li <sub>2</sub> O)	-	-	Zirconium (ZrO <sub>2</sub> )	<.01%	.01%	
Extra Elements						
Caesium			Platinum			
Gold			Rhenium			
Hafnium			Rubidium			
Indium			Tellurium			
Palladium			Thallium			

Figures are approximate:

CODE H - High - 10 - 100% approx.  
M - Medium - 1 - 10% approx.  
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found  
X Not Looked For  
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED

*[Signature]*

TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT H  
SAMPLE No 2797*
- 2/ DRAWING REFERENCE *PLAN 10A  
L16N*
- 3/ TOPOGRAPHY *2'-0" - 3'-0" OVERBURDEN  
SPRUCE TREE REGROWTH AREA.  
APPROX 2'-0 ELEVATION ABOVE SWAMP.*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *NEW TRENCH.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI  
MR G.C. ROBERTS*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS TRENCH WERE OBTAINED  
THE MOST PROMISING SAMPLE  
WAS ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO.  
CARBON MINING LTD.,  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

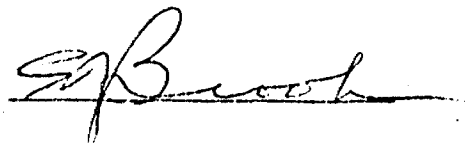
2797	nil
99	0.04
2800	nil
01	nil
02	nil
03	nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT I  
SAMPLE 2798*
- 2/ DRAWING REFERENCE *DRAWING N° 10  
LINE LIGN*
- 3/ TOPOGRAPHY *2'-3' OF SAND OVERBURDEN.  
SPRUCE TREE REGROWTH AREA.*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *NEW TRENCH.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI  
MR GL ROBERTS  
MR G.C. ROBERTS.*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS TRENCH WERE  
OBTAINED THE MOST PROMISING  
SAMPLE WAS ASSAYED.*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEETS*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544  
TELEX 06-960215

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM **Cassan Mining,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.**

REPORT No.

**T - 07938**

**Inv. #8875**

SAMPLE(S) OF ROCKS

	<u>2796</u>	
Gold (Au) oz/ton	0.001	

<u>2798</u> ✓
0.001

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED

*A. Delbrun*





# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM

Cassan Mining,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.

T - 07938

SAMPLE(S) OF

ROCKS

	Sample 2796	Sample 2798	Sample	Sample 2796	Sample 2798	Sample
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	H	H	Manganese	.05%	.05%	
Antimony	-	-	Magnesium (MgO)	3%	2%	
Arsenic	-	-	Molybdenum	-	-	
Barium	.1%	.2%	Neodymium (Nd <sub>2</sub> O <sub>3</sub> )	-	-	
Beryllium (BeO)	-	-	Nickel	.005%	.002%	
Bismuth	-	-	Phosphorus	-	-	
Boron	-	-	Silver	-	-	
Calcium (CaO)	2%	3%	Silicon (SiO <sub>2</sub> )	H	H	
Cadmium	-	-	Sodium (Na <sub>2</sub> O)	2%	2%	
Cerium (CeO <sub>2</sub> )	-	-	Strontium	.05%	.1%	
Chromium	.03%	.01%	Tantalum (Ta <sub>2</sub> O <sub>5</sub> )	-	-	
Cobalt	<.01%	<.01%	Thorium (ThO <sub>2</sub> )	-	-	
Columbium (Cb <sub>2</sub> O <sub>5</sub> )	-	-	Tin	-	-	
Copper	.001%	.002%	Titanium	.5%	.5%	
Gallium	.001%	.001%	Tungsten	-	-	
Germanium	-	-	Uranium (U <sub>2</sub> O <sub>3</sub> )	-	-	
Iron (Fe)	5%	5%	Vanadium	.02%	.02%	
Lanthanum (La <sub>2</sub> O <sub>3</sub> )	-	-	Yttrium (Y <sub>2</sub> O <sub>3</sub> )	-	-	
Lead	-	-	Zinc	-	-	
Lithium (Li <sub>2</sub> O)	-	-	Zirconium (ZrO <sub>2</sub> )	<.01%	.01%	
Extra Elements						
Caesium			Platinum			
Gold			Rhenium			
Hafnium			Rubidium			
Indium			Tellurium			
Palladium			Thallium			

Figures are approximate:

CODE H - High - 10 - 100% approx.  
M - Medium - 1 - 10% approx.  
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found  
X Not Looked For  
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED




TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT J*  
*SAMPLE N<sup>o</sup> 2799*
- 2/ DRAWING REFERENCE *PLAN 10*  
*LINE L16N*
- 3/ TOPOGRAPHY *2'-0" TO 3'-0" OUEBURDEN*  
*SPRUCE TREE REGROWTH AREA*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *NEW TRENCH*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*  
*MR GL ROBERTS*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 5 AREAS*  
*FROM THIS TRENCH WERE OBTAINED*  
*THE MOST PROMISING SAMPLE WAS*  
*ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO.  
CASSON MINING LTD.,  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

2797 nil

99 0.04

2800 nil

01 nil

02 nil

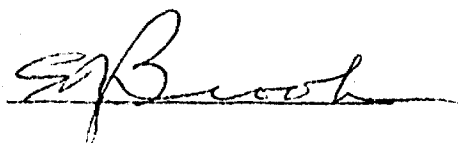
03 nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT M.  
SAMPLE NO 2800*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO L28 N*
- 3/ TOPOGRAPHY *ROCK OUTCROP. WITH HEAVY SARUCE  
GROWTH.*
- 4/ DATE *AUGUST 1978.*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED. &  
DEEPEMED*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI  
MR G.L. ROBERTS  
MR G.C. ROBERTS*
- 7/ DETAILS OF SAMPLING *CHIP. SAMPLING OF 15 AREAS  
FROM THIS TRENCH WERE OBTAINED  
THE MOST PROMISING SAMPLE WAS  
ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3470 PAGE

TO.  
CASBON MINING LTD.,  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3470

SAMPLE(S) OF 6 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

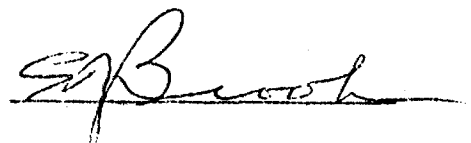
Sample	Auoz/ton
2797 /	nil
99	0.04
2800	nil
01	nil
02	nil
03	nil

X-RAY ASSAY LABORATORIES LIMITED

Aug. 31/78.

DATE

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT N  
SAMPLE NO 6*
- 2/ DRAWING REFERENCE *PLAN NO 10  
LINE NO L24N.*
- 3/ TOPOGRAPHY *TREE & BUSH OVERBURDEN  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *JULY 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED  
DEEPEMED & EXTENDED*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS PORTION OF THE  
TRENCH WERE OBTAINED, THE  
MOST PROMISING SAMPLE WAS  
ASSAYED*
- 8/ RESULTS OF ASSAY *SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3469 PAGE

TO. CANDATE MINING  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3469

SAMPLE(S) OF 4 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

1	nil
5	trace
6	0.02
200	0.02

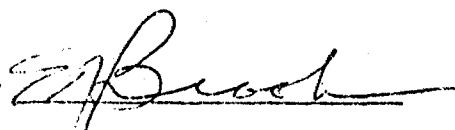
Note: traces less than 0.01 oz/ton Au

X-RAY ASSAY LABORATORIES LIMITED

DATE

Aug. 31/78.

CERTIFIED BY



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT N*  
*SAMPLE N°200*
- 2/ DRAWING REFERENCE *PLAN No 10*  
*LINE No L24N*
- 3/ TOPOGRAPHY *TREE & BUSH OUEBURDEN*
- 4/ DATE *AUGUST 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED*  
*DEEPEMED & EXTENDED*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS*  
*FROM THIS PORTION OF THE*  
*TRENCH WERE OBTAINED. THE*  
*MOST PROMISING SAMPLE WAS*  
*ASSAYED*
- 8/ RESULTS OF ASSAY  
*SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*



# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5765

## Certificate of Analysis

NO. 3469 PAGE

TO. CANDATE MINING  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3469

SAMPLE(S) OF 4 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

1	nil
5	trace
6	0.02
200	0.02

Note: traces less than 0.01 oz/ton Au

X-RAY ASSAY LABORATORIES LIMITED

DATE Aug. 31/78.

CERTIFIED BY 

TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT N  
SAMPLE NO 3*
- 2/ DRAWING REFERENCE *PLAN 10  
LINE L24N*
- 3/ TOPOGRAPHY *TREE & BUSH OVER BURDEN  
HEAVY SPRUCE REGROWTH*
- 4/ DATE *JULY 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED DEEPEMED  
& EXTENDED*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP SAMPLING OF 10 AREAS  
FROM THIS PORTION OF THE  
TRENCH WERE OBTAINED THE  
MOST PROMISING SAMPLE WAS  
ASSAYED*
- 8/ RESULTS OF ASSAY  
*SEE FOLLOWING SHEETS*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD*

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No. T - 07937
-------------------------

Inv. #8876

SAMPLE(S) OF ROCKS

	<u>#2</u>	<u>#3</u>	<u>#4</u>
Gold (Au) oz/ton	0.003	0.008	0.001

Samples, Pulps and Rejects discarded after two months

DATE August 31, 1978.

SIGNED *[Signature]*



- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

# TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE: (416) 625-1544

TELEX 06-960215

## CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM Candale Mines,  
Unit 86,  
1350 Winding Trail,  
Mississauga, Ontario.

REPORT No.  
T - 07937

Inv. #8876

SAMPLE(S) OF ROCKS

	Sample # 2	Sample # 3	Sample # 4		Sample # 2	Sample # 3	Sample # 4
Aluminum (Al <sub>2</sub> O <sub>3</sub> )	H	H	H	Manganese	.05%	.1%	.05%
Antimony	-	-	-	Magnesium (MgO)	2%	2%	3%
Arsenic	-	1%	-	Molybdenum	-	-	-
Barium	.2%	.2%	.2%	Neodymium (Nd <sub>2</sub> O <sub>3</sub> )	-	-	-
Beryllium (BeO)	-	-	-	Nickel	.002%	.001%	.002%
Bismuth	-	-	-	Phosphorus	-	-	-
Boron	.01%	.005%	-	Silver	-	-	-
Calcium (CaO)	2%	3%	2%	Silicon (SiO <sub>2</sub> )	H	H	H
Cadmium	-	-	-	Sodium (Na <sub>2</sub> O)	2%	2%	2%
Cerium (CeO <sub>2</sub> )	-	-	-	Strontium	.1%	.2%	.1%
Chromium	-	-	.02%	Tantalum (Ta <sub>2</sub> O <sub>5</sub> )	-	-	-
Cobalt	<.01%	<.01%	<.01%	Thorium (ThO <sub>2</sub> )	-	-	-
Columbium (Cb <sub>2</sub> O <sub>5</sub> )	-	-	-	Tin	-	-	-
Copper	.005%	.002%	.001%	Titanium	.2%	.2%	.5%
Gallium	.001%	.001%	.001%	Tungsten	-	-	-
Germanium	-	-	-	Uranium (U <sub>3</sub> O <sub>8</sub> )	-	-	-
Iron (Fe)	5%	5%	5%	Vanadium	.02%	.02%	.02%
Lanthanum (La <sub>2</sub> O <sub>3</sub> )	-	-	-	Yttrium (Y <sub>2</sub> O <sub>3</sub> )	.001%	.001%	.001%
Lead	-	.01%	-	Zinc	-	-	-
Lithium (Li <sub>2</sub> O)	-	-	-	Zirconium (ZrO <sub>2</sub> )	.01%	.01%	<.01%
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE H - High - 10 - 100% approx.  
M - Medium - 1 - 10% approx.  
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found  
X Not Looked For  
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 31st, 1978.

SIGNED

*Hebman*



TRENCH AND PIT ANALYSIS SUMMARY

- 1/ LOCATION *PIT 0  
SAMPLE N<sup>o</sup> 1.*
- 2/ DRAWING REFERENCE *PLAN 100  
LINE N<sup>o</sup> 122A.N.*
- 3/ TOPOGRAPHY *TREE & BUSH OVERBURDEN  
HEAVY SPRUCE REGROWTH.*
- 4/ DATE *JULY 1978*
- 5/ DETAILS OF PIT *OLD PIT REEXCAVATED, DEEPENED  
& EXTENDED.*
- 6/ SAMPLING CARRIED OUT BY *MR KARL REMAZKI*
- 7/ DETAILS OF SAMPLING *CHIP: SAMPLING OF 10  
AREAS FROM THIS PORTION  
OF THE TRENCH WERE OBTAINED  
THE MOST PROMISING SAMPLE WAS*
- 8/ RESULTS OF ASSAY *ASSAYED*  
  
*SEE FOLLOWING SHEET*
- 9/ EXCAVATION CARRIED OUT BY *DYNAMIC CONSTRUCTION LTD.*

# X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

## Certificate of Analysis

NO. 3469 PAGE

TO. CANDATE MINING  
Attn: K. Remazki

RECEIVED Aug. 29/78

INVOICE NO. 3469

SAMPLE(S) OF 4 rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

Sample Auoz/ton

1	nil
5	trace
6	0.02
200	0.02

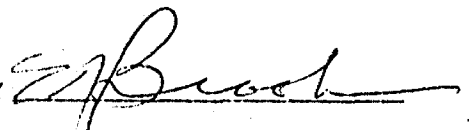
Note: traces less than 0.01 oz/ton Au

X-RAY ASSAY LABORATORIES LIMITED

DATE

Aug. 31/78.

CERTIFIED BY





GEOPHYSICAL - GEOLOGIC  
TECHNICAL DATA STATEMENT

32D04NW0141 2.2761 GAUTHIER

900

RECEIVED

10 2 1978

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

Type of Survey Radiation survey

Township or Area Gauthier Township

Claim holder(s) Casan Mining Limited

Author of Report S. S. Szetu, Ph. D., P. Eng.

Address Rm 220, 12 Richmond St. East, Toronto, Ont.

Covering Dates of Survey June 11 - Aug. 20th, 1978  
(linecutting to office)

Total Miles of Line cut 18.03 miles re-established

MINING LANDS SECTION

MINING CLAIMS TRAVERSED  
List numerically

(prefix)	(number)
L ✓	482773
L ✓	482774
L ✓	482775
L 1/4 not covered	482776
L ✓	482777
L ✓	482778
L 1/4	440934
L 1/4	440935
L ✓	440936
L ✓	440937 ✓
L ✓	440938
L ✓	440939
L 1/4	440940
L ✓	440941
L 1/4	440942
L ✓	440943 ✓
L ✓	440944 ✓
L ✓	440945 ✓

SPECIAL PROVISIONS CREDITS REQUESTED	DAYS per claim
Geophysical	
--Electromagnetic	
--Magnetometer	20
--Radiometric	
--Other	
Geological	20
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)  
Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Aug. 21, 1978 SIGNATURE: S. S. Szetu  
Author of Report or Agent

PROJECTS SECTION L.D.  
Res. Geol. \_\_\_\_\_ Qualifications 63.1064  
Previous Surveys \_\_\_\_\_

Checked by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

GEOLOGICAL BRANCH \_\_\_\_\_

Approved by \_\_\_\_\_ date \_\_\_\_\_

TOTAL CLAIMS \_\_\_\_\_

OFFICE USE ONLY

If space insufficient, attach list

Show instrument technical data in each space for  
type of survey submitted or indicate "not applicable"

## GEOPHYSICAL TECHNICAL DATA

### GROUND SURVEYS

Number of Stations 822 Number of Readings 822  
Station interval 100 ft and some 50 ft  
Line spacing 400'  
Profile scale or Contour intervals 25 x 10<sup>2</sup> cpm  
(specify for each type of survey)

### MAGNETIC

Instrument \_\_\_\_\_  
Accuracy - Scale constant \_\_\_\_\_  
Diurnal correction method \_\_\_\_\_  
Base station location \_\_\_\_\_

### ELECTROMAGNETIC

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

### GRAVITY

Instrument \_\_\_\_\_  
Scale constant \_\_\_\_\_  
Corrections made \_\_\_\_\_  
Base station value and location \_\_\_\_\_

Elevation accuracy \_\_\_\_\_

### INDUCED POLARIZATION -- RESISTIVITY

Instrument \_\_\_\_\_  
Time domain \_\_\_\_\_ Frequency domain \_\_\_\_\_  
Frequency \_\_\_\_\_ Range \_\_\_\_\_  
Power \_\_\_\_\_  
Electrode array \_\_\_\_\_  
Electrode spacing \_\_\_\_\_  
Type of electrode \_\_\_\_\_



SELF POTENTIAL

Instrument \_\_\_\_\_ Range \_\_\_\_\_

Survey Method \_\_\_\_\_

Corrections made \_\_\_\_\_

RADIOMETRIC

Instrument McPhar TV-1 scintillometer

Values measured x 10<sup>2</sup> total count

Energy windows (levels) 0.4 mev.

Height of instrument 2 ft. Background Count 50 x 10<sup>2</sup>

Size of detector 1 1/4" x 1"

Overburden as per map accompanying report  
(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey \_\_\_\_\_

Instrument \_\_\_\_\_

Accuracy \_\_\_\_\_

Parameters measured \_\_\_\_\_

Additional information (for understanding results) \_\_\_\_\_

AIRBORNE SURVEYS

Type of survey(s) \_\_\_\_\_

Instrument(s) \_\_\_\_\_  
(specify for each type of survey)

Accuracy \_\_\_\_\_  
(specify for each type of survey)

Aircraft used \_\_\_\_\_

Sensor altitude \_\_\_\_\_

Navigation and flight path recovery method \_\_\_\_\_

Aircraft altitude \_\_\_\_\_ Line Spacing \_\_\_\_\_

Miles flown over total area \_\_\_\_\_ Over claims only \_\_\_\_\_

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Total Number of Samples \_\_\_\_\_

Type of Sample \_\_\_\_\_  
(Nature of Material)

Average Sample Weight \_\_\_\_\_

Method of Collection \_\_\_\_\_

Soil Horizon Sampled \_\_\_\_\_

Horizon Development \_\_\_\_\_

Sample Depth \_\_\_\_\_

Terrain \_\_\_\_\_

Drainage Development \_\_\_\_\_

Estimated Range of Overburden Thickness \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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

Mesh size of fraction used for analysis \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ANALYTICAL METHODS**

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

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

Others \_\_\_\_\_

Field Analysis (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Field Laboratory Analysis

No. (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Commercial Laboratory (\_\_\_\_\_ tests)

Name of Laboratory \_\_\_\_\_

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

General \_\_\_\_\_

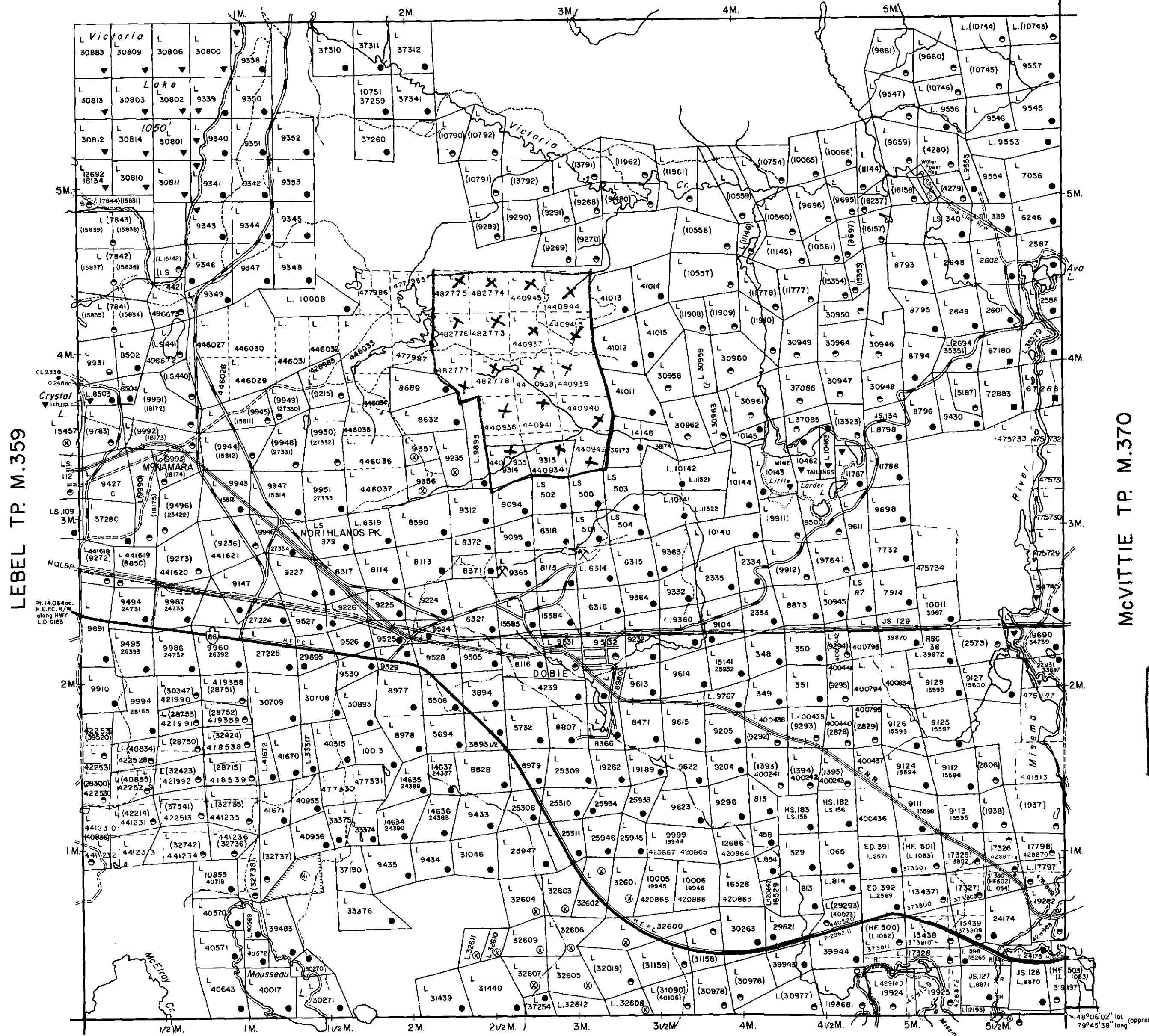
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NOTES

400' surface rights reservation along the shores of all lakes and rivers.

© M.T.C. File 101421 Pit No. 1666

ARNOLD TP. M.321



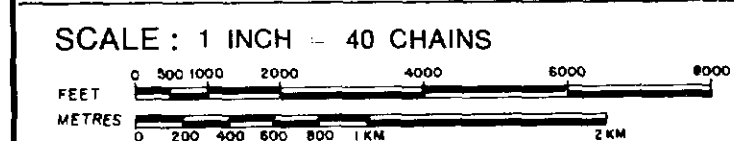
LEGEND

- 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
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

2.2761

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	▼
CROWN LAND SALE	C.S.
ORDER-IN-COUNCIL	OC
RESERVATION	⊙
CANCELLED	⊗
SAND & GRAVEL	⊕



DATE OF ISSUE	ACRES	HECTARES
NOV - 8 1978	40	16
SURVEYS AND MAPPING BRANCH TOWNSHIP		

**GAUTHIER**

DISTRICT  
TIMISKAMING  
MINING DIVISION  
LARDER LAKE

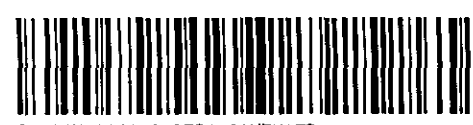
Ministry of Natural Resources

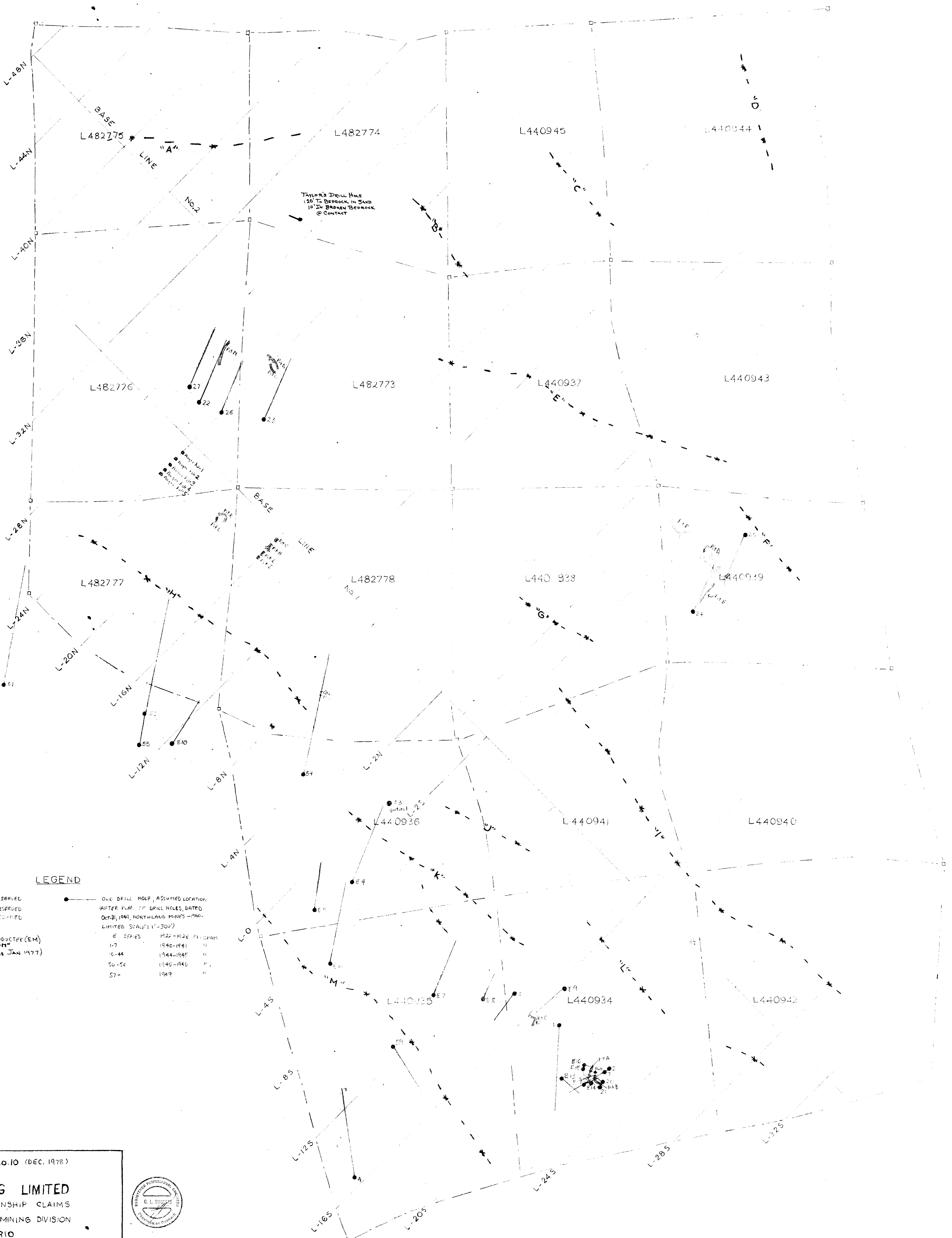
Ontario Surveys and Mapping Branch

Date JAN. 1973 Plan No. M.350

Whitney Block Queen's Park, Toronto

McELROY TP. M.366





**LEGEND**

- CLAIM POST OBSERVED
  - CLAIM LINE OBSERVED
  - - - CLAIM LINE ASSUMED
  - ∇ TRENCH
  - \* - INDICATED CONDUCTIVE (EM) AND INFERRED AXIS "A-H" (BY CANA EXPLORATIONS JAN 1977)
  - OLD DRILL HOLE, ASSUMED LOCATION (AFTER PLAN OF DRILL HOLES DATED OCT 31, 1949, NORTHLAND MINES - 1960 - LIMITED SCALE: 1"=300')
- | E SERIES | 1922-1928 PROGRAM |
|----------|-------------------|
| 1-7      | 1940-1941 "       |
| 10-44    | 1944-1945 "       |
| 50-56    | 1945-1946 "       |
| 57-      | 1949 "            |

PLAN No. 10 (DEC. 1978)

**CASAN MINING LIMITED**

GAUTHIER TOWNSHIP CLAIMS

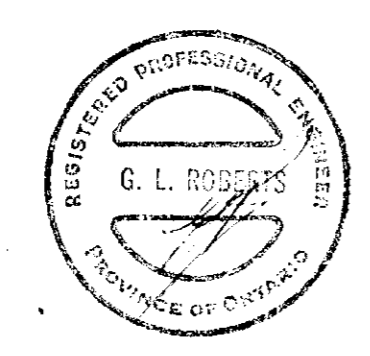
LARDER LAKE MINING DIVISION

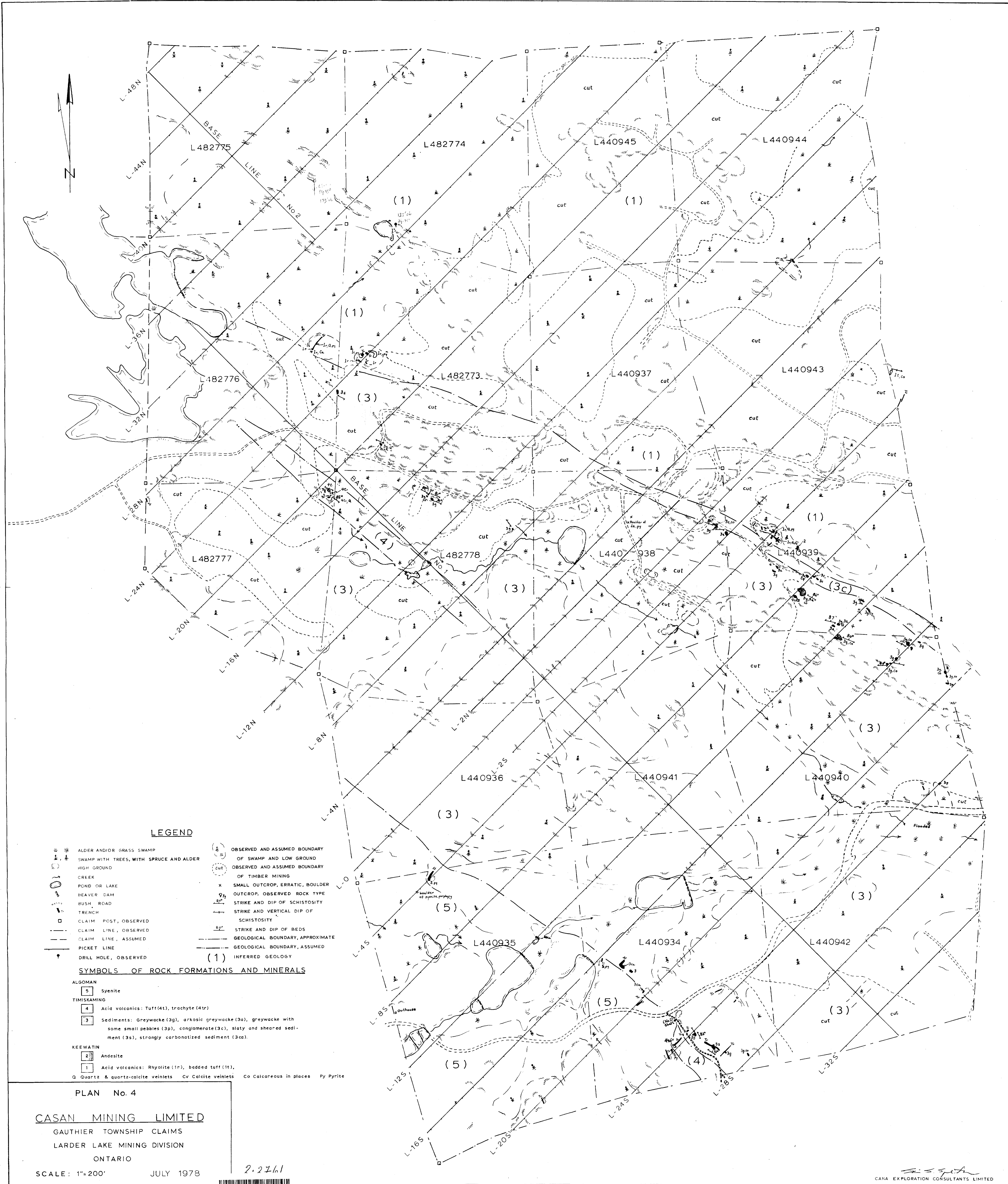
ONTARIO

2. 2761

SCALE: 1"=200'

DEC. 1978





**LEGEND**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>ALDER AND/OR GRASS SWAMP</li> <li>SWAMP WITH TREES, WITH SPRUCE AND ALDER</li> <li>HIGH GROUND</li> <li>CREEK</li> <li>POND OR LAKE</li> <li>BEAVER DAM</li> <li>BUSH ROAD</li> <li>TRENCH</li> <li>CLAIM POST, OBSERVED</li> <li>CLAIM LINE, OBSERVED</li> <li>CLAIM LINE, ASSUMED</li> <li>PICKET LINE</li> <li>DRILL HOLE, OBSERVED</li> </ul> | <ul style="list-style-type: none"> <li>OBSERVED AND ASSUMED BOUNDARY OF SWAMP AND LOW GROUND</li> <li>OBSERVED AND ASSUMED BOUNDARY OF TIMBER MINING</li> <li>SMALL OUTCROP, ERRATIC, BOULDER</li> <li>OUTCROP, OBSERVED ROCK TYPE</li> <li>STRIKE AND DIP OF SCHISTOSITY</li> <li>STRIKE AND VERTICAL DIP OF SCHISTOSITY</li> <li>STRIKE AND DIP OF BEDS</li> <li>GEOLOGICAL BOUNDARY, APPROXIMATE</li> <li>GEOLOGICAL BOUNDARY, ASSUMED</li> <li>INFERRED GEOLOGY</li> </ul> |
|--|--|

**SYMBOLS OF ROCK FORMATIONS AND MINERALS**

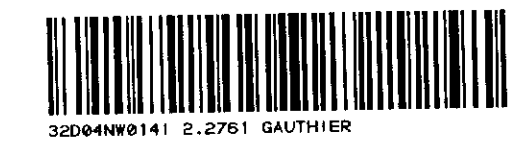
- |             |   |
|-------------|---|
| ALGOMAN     | 5 Syenite   |
| TIMISKAMING | 4 Acid volcanics: Tuff (4t), trachyte (4tr)   |
|             | 3 Sediments: Greywacke (3g), arkosic greywacke (3a), greywacke with some small pebbles (3p), conglomerate (3c), slaty and sheared sediment (3s), strongly carbonatized sediment (3ca) |
| KEEWATIN    | 2 Andesite  |
|             | 1 Acid volcanics: Rhyolite (1r), bedded tuff (1t)   |
|             | Q Quartz & quartz-calcite veinlets Cv Calcite veinlets Co Calcareous in places Py Pyrite  |

PLAN No. 4

**CASAN MINING LIMITED**  
 GAUTHIER TOWNSHIP CLAIMS  
 LARDER LAKE MINING DIVISION  
 ONTARIO

SCALE: 1"=200' JULY 1978

2.27.61





**LEGEND**

- ALDER AND/OR GRASS SWAMP
- SWAMP WITH TREES
- HIGH GROUND
- CREEK
- POND OR LAKE
- BEAVER DAM
- PUSH ROAD
- TRENCH
- CLAIM BEST OBSERVED
- CLAIM LINE OBSERVED
- CLAIM LINE ASSUMED
- OUTCROP AREA
- INFERRED GEOLOGICAL BOUNDARY (AFTER PLAN No. 4)

RADIATION READINGS OBTAINED BY USING A McPHAR TV-1 SCINTILLOMETER AT STATIONS ESTABLISHED ON CUT LINE GRID. READING X 100 = TOTAL COUNT PER MINUTE

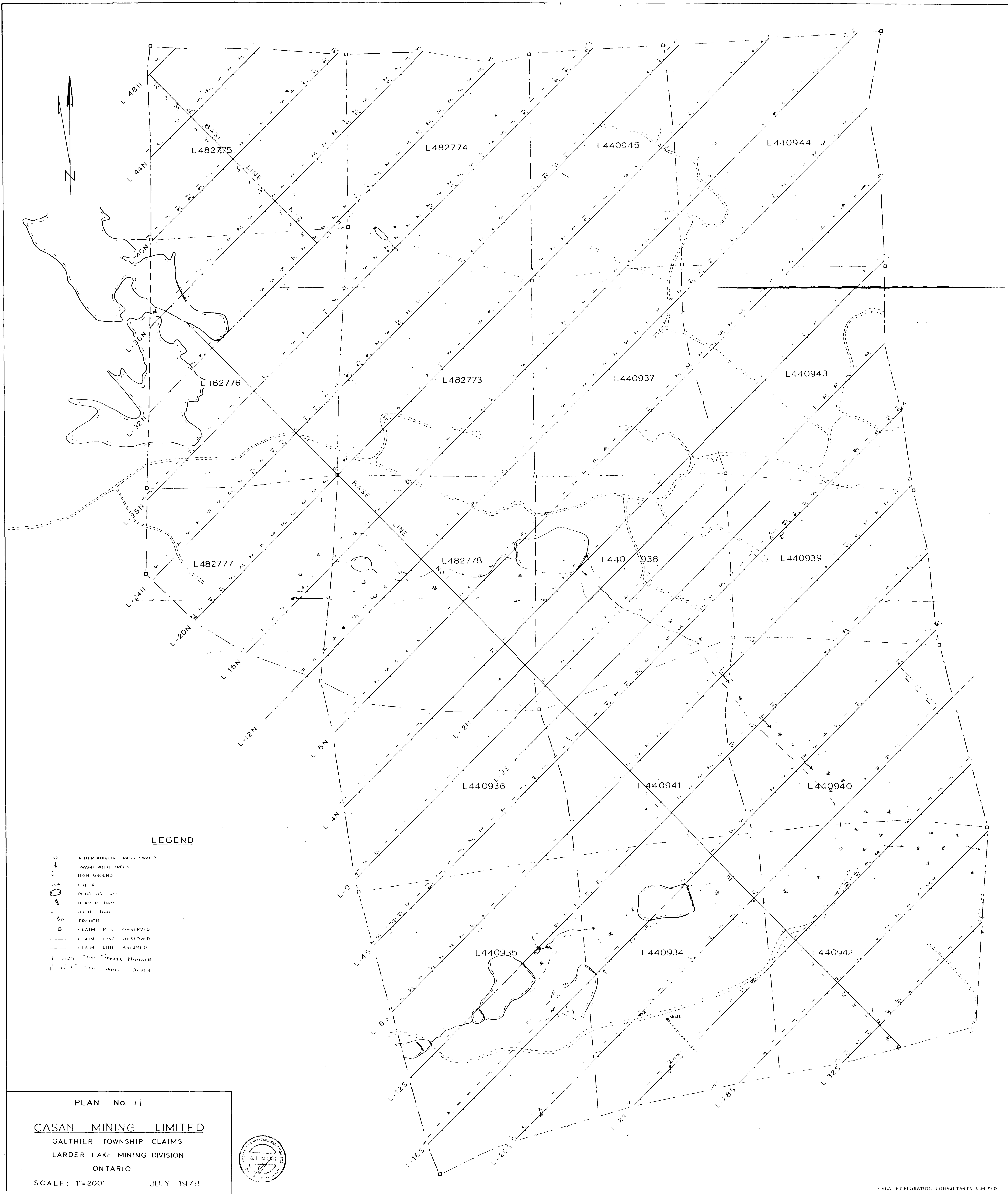
**CONTOUR INTERVALS (X10<sup>3</sup>) CPM**

	BELOW 50
	50 to 75
	75 to 100
	100 to 125
	125 to 150
	OVER 150

PLAN No. 5  
 RADIATION SURVEY  
 CASAN MINING LIMITED  
 GAUTHIER TOWNSHIP CLAIMS  
 LARDER LAKE MINING DIVISION  
 ONTARIO  
 SCALE: 1"=200' AUG. 1978

22761





**LEGEND**

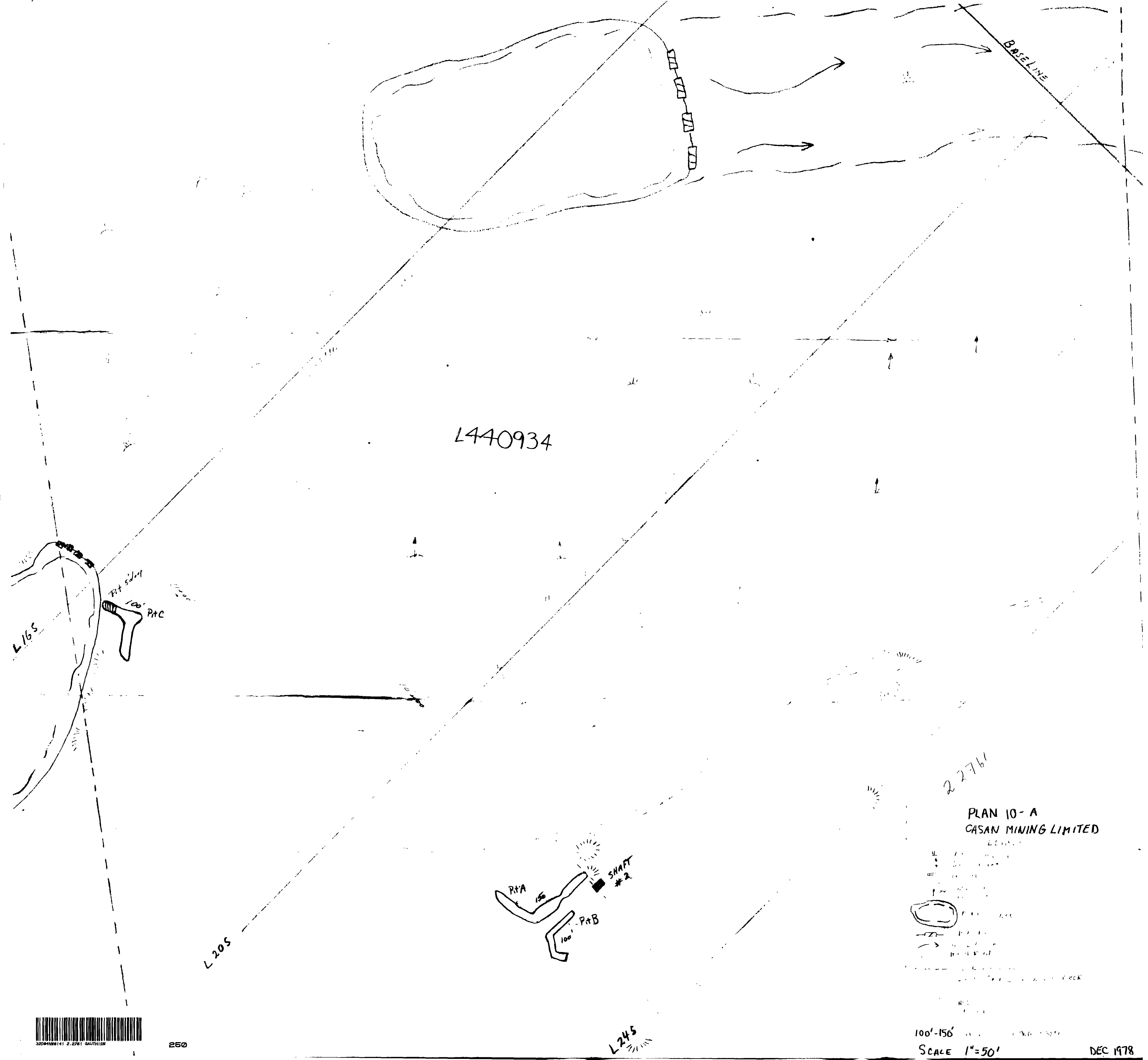
- ALDER AND/OR GRASS SWAMP
- SWAMP WITH TREES
- HIGH GROUND
- CREEK
- POND OR LAKE
- BEAVER DAM
- DITCH ROAD
- TRENCH
- CLAIM POINT OBSERVED
- CLAIM LINE OBSERVED
- CLAIM LINE ASSUMED
- 225' WATER BUFFER
- 100' APPLE DEPTH

PLAN No. 11

**CASAN MINING LIMITED**  
 GAUTHIER TOWNSHIP CLAIMS  
 LARDER LAKE MINING DIVISION  
 ONTARIO

SCALE: 1"=200' JULY 1978





L440934

PLAN 10-A  
CASAN MINING LIMITED



SHAFT #2

SCALE 1"=50'

DEC 1978












L440939

2 2761

PLAN 10-B  
CASAN MINING LIMITED  
L.L.C. LTD.

-  TRENCH
- 100' 300' TRENCH FOOTAGE
-  SQUARE
-  HUNDRED FEET
-  SURVEY POINT
-  SURVEY POINT BEING REGRADED
-  BOUNDARY
-  150' GRAD LINE

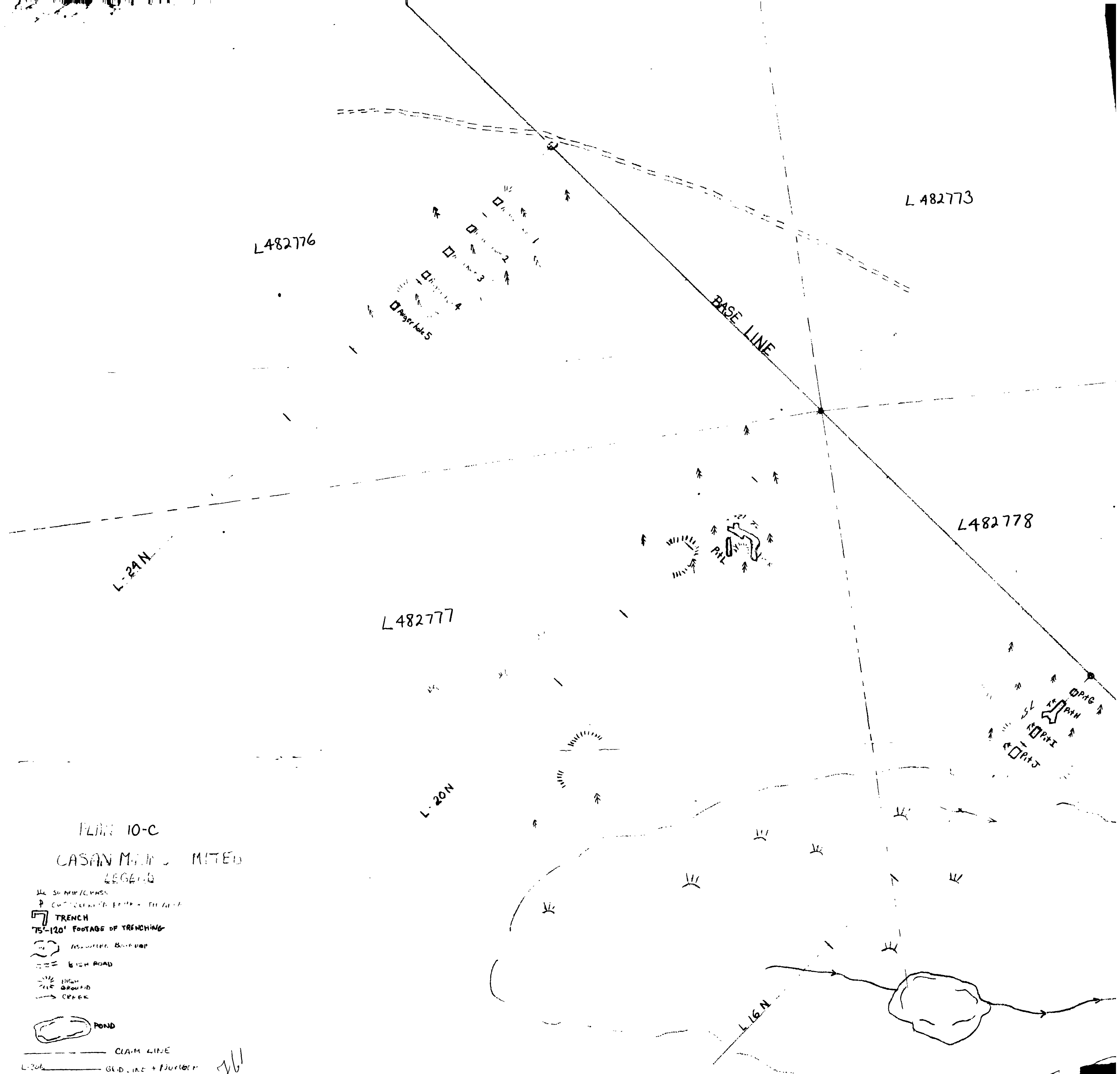
SCALE = 1" = 50'

DEC 1



3204NR141 2.2761 GAUTHIER

260



PLAN 10-C

CASAN MOUNTAIN MITEO  
LEGEND

- ☉ SUN PIT/CYRUS
- ☐ TRENCH
- 75-120' FOOTAGE OF TRENCHING
- ~~~ ASSUMED BOUNDARY
- == HIGH ROAD
- ☀ HIGH GROUND
- CREEK



POND

CLAIM LINE

G.L.D. LINE + NUMBER

276



320486141 2 2701 GAUTHIER

270

