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MADSEN RED LAKE GOLD MINES LIMITED

REPORT

GROUND ELECTROMAGNETIC SURVEY

LAKE-O EXPLORATION GROUP

STURGEON LAKE, PATRICIA MINING DIVISION, ONTARIO.

Introduction:

During the period, February 20th to April 27th, 1970, Madsen Red Lake Gold Mines Limited, Suite 1110 - 55 Yonge Street, Toronto 1, Ontario, carried out line-cutting followed by an electromagnetic survey, using an EM 16 VLF Unit, over a 50-claim group in the Sturgeon Lake area, Patricia Mining Division, Ontario.

Further line-cutting and check electromagnetic surveying was carried out in the period October 15th to 24th, 1970.

Property:

The property consists of 50 claims numbered PA245578 to 245591 inclusive, PA 245593 to 245611 inclusive and PA 245636 to 245652 inclusive, held by Madsen Red Lake Gold Mines Limited. The Company also holds transfers on 3 claims, numbered PA 270408, 270409 and 270412, covering the surveyed ground north and south of the main baseline at the extreme west end. This area was covered by the line-cutting and surveying in the belief that it was part of the original staking. When the snow receded and claim posts became visible, it was found to be open and was staked after completion of the work in this area.

The claims are located at the extreme southwest end of Sturgeon Lake at about 91°12' W and 49°50' N. Highway 599, from Ignace on Highway 17 to Savant Lake on the Northern line of the C.N.R., runs through the property, which lies about 40 miles north of Ignace.

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The claims are located at the extreme southwest end of Sturgeon Lake at about $91^{\circ}12'$ W and $49^{\circ}50'$ N. Highway 599, from Ignace on Highway 17 to Savant Lake on the Northern line of the C.N.R., runs through the property, which lies about 40 miles north of Ignace.

General Geology:

The property is underlain generally by mafic to intermediate metavolcanics with a northeast trending foliation. Narrow bands of rhyolite and pyroclastic breccia with some dykes or stocks of quartz porphyry are exposed on sections of the north and south shores of Sturgeon Lake.

The southeastern portion of the property is underlain by the western end of a large lenticular intrusive body of granodiorite.

Economic Geology:

Three old trenches were found near station 29+00S on line 8E. These trenches were excavated on disseminated mineralization contained in a rusty acidic rock, trenching about N 25° E. Only low values in copper and nickel were obtained from samples taken from these trenches. This work is the only known exploration work carried out on the property.

In 1966-67, Steep Rock Iron Mines Limited carried out considerable work, including diamond drilling, on a copper-molybdenum showing located about a mile east of the eastern boundary of the property in the granodiorite intrusive.

Survey Details:

The survey was carried out using a Geonics E.M. 16 V.L.F. Unit with a scale constant of 1 division = 1%. This instrument utilizes the horizontal electromagnetic waves from radio stations established by the United States for marine communications. It measures, in terms of the horizontal field present, the vertical components of the secondary field produced by the primary wave in any conductor present.

Two transmitting stations were used in the present survey as follows:

	<u>Location</u>	<u>Frequency</u>	<u>Power</u>
NAA-Ctller, Maine	44°39'N, 67°12' W	17.80 kHz	1000kw
NBA-Balboa, Panama, C.Z	09°04'N, 79°39' N	24.00 kHz	150kw

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The southeastern portion of the property is underlain by the western end of a large lenticular intrusive body of granodiorite.

Economic Geology

Three old trenches were found near station 29+00S on Line SE. These trenches were excavated on disseminated mineralization contained in a rusty acidic rock, trenching about N 25° E. Only low values in copper and nickel were obtained from samples taken from these trenches. This work is the only known exploration work carried out on the property.

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Survey Details (Cont'd)

Station NBA was used as an alternative for the station at Annapolis, Maryland, which is off the air until sometime in 1971. The signal from Balboa is relatively weak and some difficulty in exactly duplicating results using this station was experienced.

The total number of readings taken were 2547 using station NAA and 2519 using station NBA.

The original survey was carried out on a grid of north-south lines, 400 feet apart. A total of 2.85 miles of base line and 47.7 miles of cross-lines were cut.

A small amount of check surveying using station NBA on east-west lines was carried out on the ice of Sturgeon Lake during April 1970. Further check surveying was done during October 1970, between Lines OE and 21E from Sturgeon Lake to the south boundary. A separate smaller plan shows the results obtained from this work.

Discussion of Results

The major feature shown by this work is a persistent, relatively strong anomaly extending from the north shore of Sturgeon Lake at Line 32E in a S 25°W direction to the south boundary of the property at Line 8E. Because of its strike, this anomaly is not shown by station NAA readings but was indicated by station NBA readings on the few north-south lines that it crossed. A clearer picture of this anomaly was given by the work on east-west lines using station NBA as represented on the smaller map. This anomaly is considered to follow a complete fault, possibly mineralized, in the two areas of good conductivity. As the aeromagnetic maps of the district show a change in the strike of the isomagnetic lines from the normal nearly east-west strike to a north of northeast strike in this area, it is believed that this fault, at least in part, followed an earlier warp in the rock structure.

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Associated with this fault, is a moderate conductor extending in a S 30°E direction from 5S on Line 8E to an apparent juncture with the fault. This anomaly is considered to indicate a formational contact, possibly mineralized.

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Discussion of Results Cont'd

Associated with this fault, is a moderate conductor extending in a S 30°E direction from 5S on Line 8E to an apparent juncture with the fault. This anomaly is considered to indicate a formational contact, possibly mineralized.

A poor conductor extends east at 20S from the fault to Line 32E. This anomaly probably marks the north contact of the large granodiorite intrusive. It is possible that the S 30°E striking conductors mentioned in the previous paragraph is the extension on the west side of the fault of this same contact.

Two parallel moderate conductors were located by the NAA survey only, striking slightly north of east and extending from the north shore of Sturgeon Lake at about 10N. These could possibly indicate the southwest extension of the St. Anthony Fault, a major fault zone of the region.

Considerable carbonization has been reported from the small island, just west of 8N on Line 24E. The portion of the southern conductor just west of 8N on Line 24E could possibly be mineralized but survey results in this area must be considered with caution. Extensive lumbering operations were carried out here and numerous timber piles are present in the lake. It is quite probable that metal objects are present in the lake close to shore and around or between timber piles.

Readings from station NAA also indicated a short conductor extending in a N55°E direction from 6 + 50S on Line 16E to the north-east fault. This anomaly considered to be indicative of sulphide mineralization. Rhyolite and pyroclastic breccia with a nearly parallel strike occur on the opposite east shore of Sturgeon Lake on the east side of the fault. The strike of schistosity in a magnetite bearing siliceous rock on the small island just north of this anomaly is also N 55°E. It should be noted that station NBA readings show a reverse anomaly at 6 + 50S on Line 16E.

Discussion of Results (Cont'd)

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A strong to moderate anomaly was picked up by the NAA survey striking northeast from 2 + 50S on Line 8W. The anomaly appeared to follow closely the old railroad spur and the readings around 4N on Line 4W were particularly strong. In October, steel rails were found in place here. This entire anomaly is therefore considered due to the presence of metal along the old spur-line. Again, as in the previous anomaly, the NBA readings around this anomaly on Line 4W showed a reverse anomaly and here a definite conductor was known to be present.

Discussion of Results Cont'd

A strong to moderate anomaly was picked up by the NAA survey striking northeast from 2 + 50S on Line 8W. The anomaly appeared to follow closely the old railroad spur and the readings around 4N on Line 4W were particularly strong. In October, steel rails were found in place here. This entire anomaly is therefore considered due to the presence of metal along the old spur-line. Again, as in the previous anomaly, the NBA readings around this anomaly on Line 4W showed a reverse anomaly and here a definite conductor was known to be present.

The NBA readings also indicate two poorly conductive zones striking about N 25°E from 4W on the baseline and from 8 + 50S on Line 24W. These are nearly parallel to the main northeast fault and could be poorly mineralized fault or shear zones.

A poor conductor extends in an approximate east-west direction from Line 8W to Line 0E at about 20S. It is indicated mainly from the NAA survey, it is considered to be a weakly-mineralized shear, possibly the western extension of a shear that is probably present on the north contact of the intrusive granodiorite to the east.

A moderately conductive zone striking south of east is shown by both surveys at 3N on Line 36W. The strongest readings were returned from station NBA even though the coupling with this station should be very low compared to that with station NAA. The anomaly is believed to represent a formational contact, possibly slightly mineralized.

Both stations indicated a moderate conductor on the south shore of Young Lake at 22N on Line 20W, Station NAA readings indicate a swing in strike to the northwest at the east end of this anomaly, following the shoreline of Young Lake which in this area is a sandy beach. The anomaly is considered to be due to overburden effects.

Both surveys also indicate a north-west striking anomaly at the south-east end of Elbow Lake near the north boundary of the property. This area is low and swampy and the anomaly is believed due to overburden effects.

Discussion of Results (Cont'd)

The NBA readings also indicate two poorly conductive zones striking about N 25°E from 4W on the baseline and from 8 + 50S on Line 24W. These are nearly parallel to the main northeast fault and could be poorly mineralized fault or shear zones.

A poor conductor extends in an approximate east-west direction from Line 8W to Line OE at about 20S. It is indicated mainly from the NAA survey, it is considered to be a weakly-mineralized shear, possibly the western extension of a shear that is probably present on the north contact of the intrusive granodiorite to the east.

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Both surveys also indicate a north-west striking anomaly at the south-east end of Elbow Lake near the north boundary of the property. This area is low and swampy and the anomaly is believed due to overburden effects.

South of Elbow Lake on the north shore of Young Lake at 66N on Line 8W, an anomaly indicated by the NAA survey only is also believed due to overburden effects.

The NAA survey also indicated a moderate conductor striking north-east between Line 40W and Line 44W. This is possibly a weakly-mineralized shear.

Conclusions

The prime areas of interest are considered to be the area covered by the southwest end of Sturgeon Lake and the area south of the lake to the boundary close to the main north-east structure. Here,

Discussion of Results Cont'd

South of Elbow Lake on the north shore of Young Lake at 66N on Line 8W, an anomaly indicated by the NAA survey only is also believed due to overburden effects.

The NAA survey also indicated a moderate conductor striking north-east between Line 40W and Line 44W. This is possibly a weakly-mineralized shear.

Conclusions:

The prime areas of interest are considered to be the area covered by the southwest end of Sturgeon Lake and the area south of the lake to the boundary close to the main north-east structure. Here, the survey indications are strongest, rhyolite and pyroclastic breccia are present north of the intrusive granodiorite and copper and nickel sulphides are known to be present.

Recommendations:

It is recommended that the area from Line 8E to Line 48E, north from the baseline to 20N or the boundary of the property and the area from Line 8E to Line 24E. South from the baseline to 10S, be surveyed using horizontal loop E.M. equipment on a north-south grid with lines 200 feet apart. As most of this area is covered by water and swamp, this work would have to wait for sufficient ice to form.

It is also recommended that the area between Line 8E and Line 28E from 10N to 20S and the area between Line 0E and Line 20E from 20S to the south boundary be surveyed using horizontal loop equipment on an east-west grid with line 200 feet apart.

The anomalies in the other sections of the property which are considered to be possibly due to sulphide mineralization, should be prospected during the summer months. Any indications of interest could be followed up by packsack diamond drilling.

F. A. Innes, B.Sc., P. Eng.

Conclusions (Cont'd)

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It is also recommended that the area between Line 8E and Line 28E from 10N to 20S and the area between Line 0F and Line 20E from 20S to the south boundary be surveyed using horizontal loop equipment on an east-west grid with line 200 feet apart.

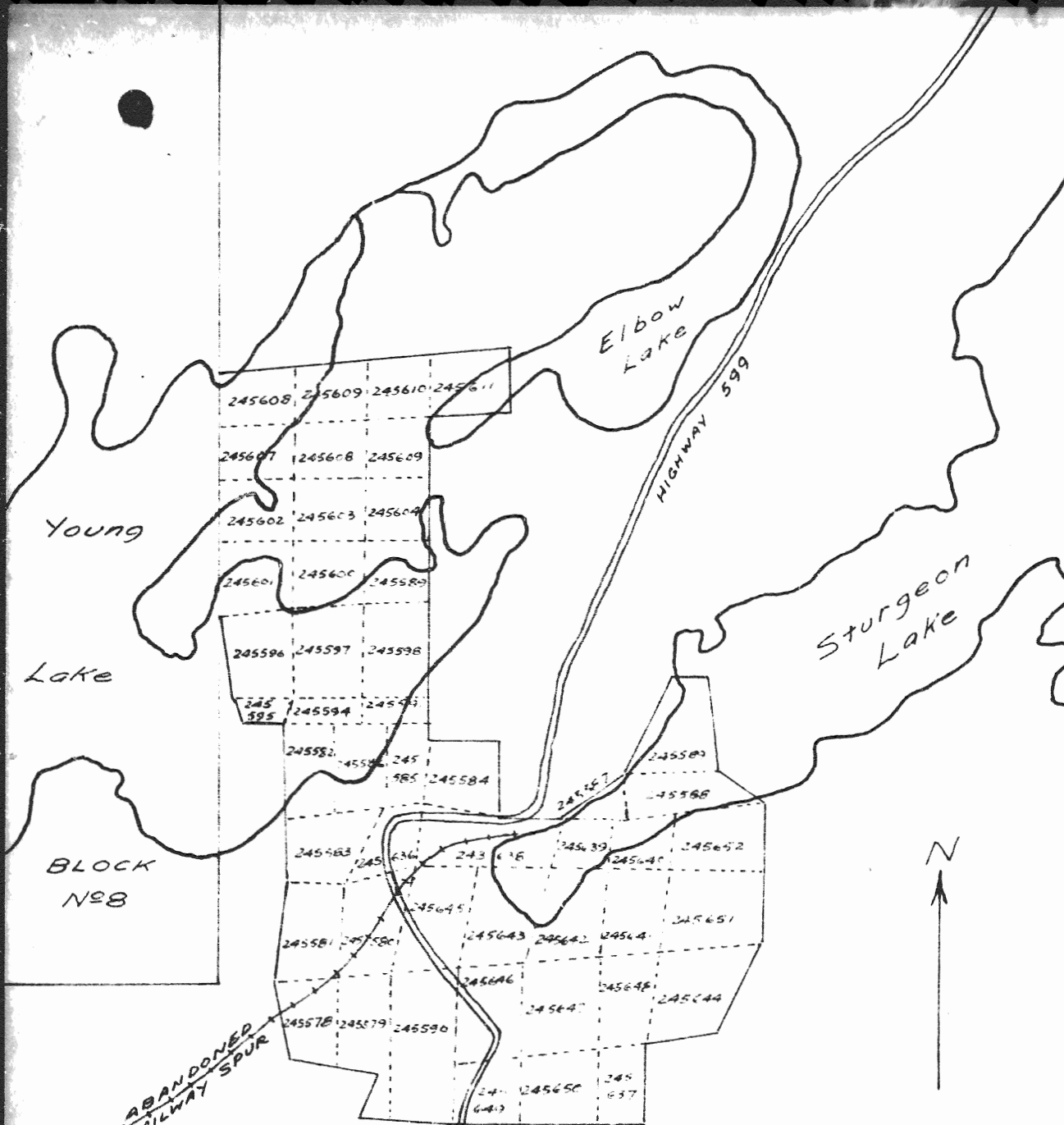
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F. A. Innes, B.Sc., P. Eng.

Meisen, Ontario.

November 27, 1970.

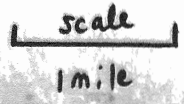


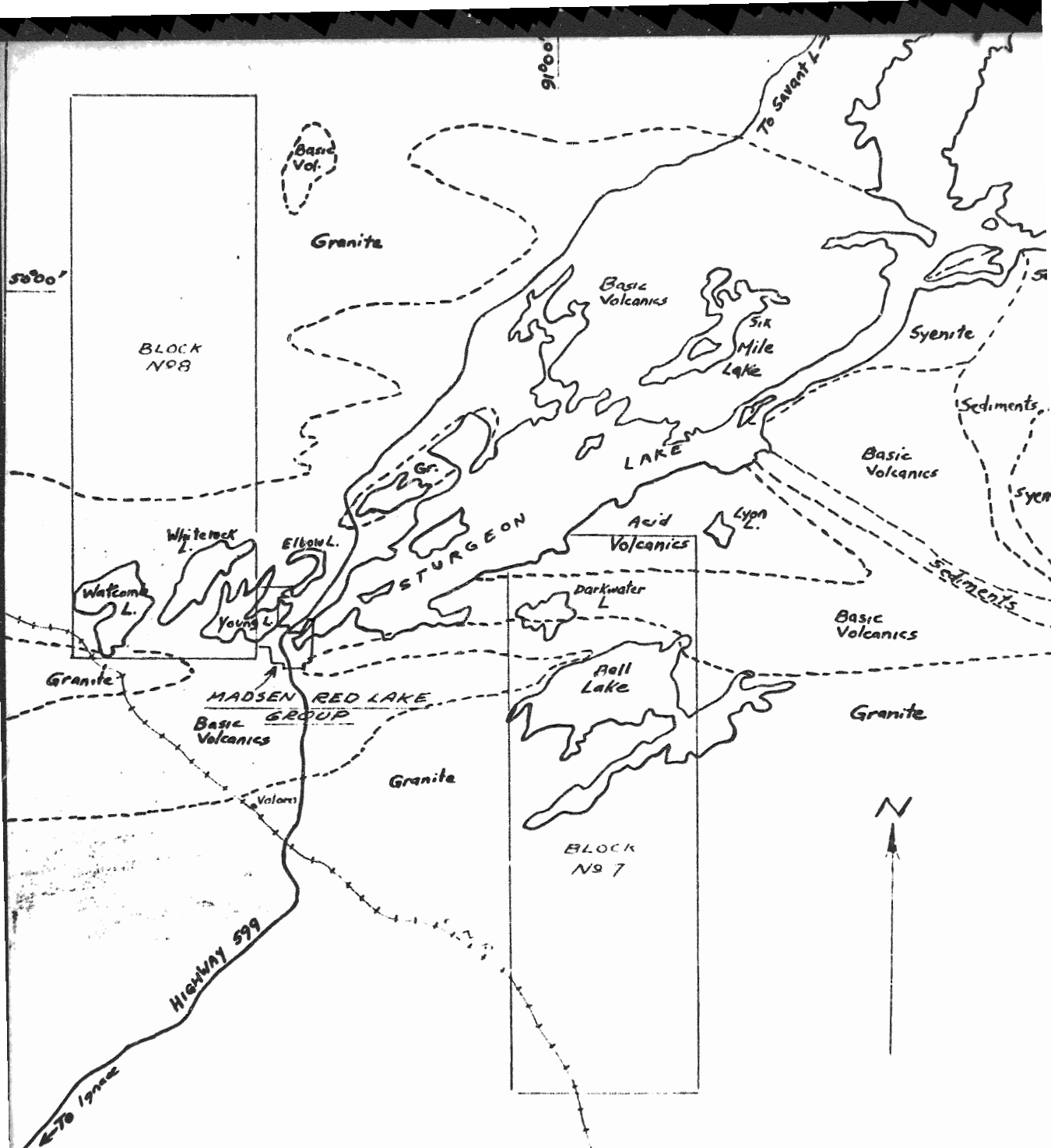
MADSEN RED LAKE GOLD MINES
LAKE O EXPL. GROUP
STURGEON LAKE, ONTARIO

CLAIM MAP

SCALE · 2" = 1 mile

Nov. 1970





MADSEN RED LAKE GOLD MINES
 LAKE-O EXPL. GROUP
 STURGEON LAKE, ONTARIO
 LOCATION MAP
 SCALE: 1" = 4 miles



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder . Madsen Red Lake Gold Mines Limited
Township or Area . S. W. part of Sturgeon Lake Area

Type of Survey and number of
Assessment Days Credits per claim

GEOPHYSICAL Airborne Ground

Magnetometerdays

Electromagnetic40.....days

Radiometricdays

.....

GEOLOGICAL.....days

GEOCHEMICAL.....days

SECTION 84 (14).....days

Special Provision Man days

NOTICE OF INTENT TO BE ISSUED

Credits have been reduced because of partial coverage of claims.

Credits have been reduced because of corrections to work dates and figures of applicant.

NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

Mining Claims
PA. 245578 to 91 Inclusive
245593 to 611 Inclusive
245636 to 52 Inclusive

AREA CODE — 416
 TELEPHONE — 365-6918



ONTARIO

WHITNEY BLOCK,
 QUEEN'S PARK
 TORONTO 182, ONT.

DEPARTMENT OF MINES AND NORTHERN AFFAIRS
 MINING LANDS BRANCH

April 6th. 1971.

Mr. W.A. Buchan,
 Mining Recorder,
 Court House,
 Sioux Lookout, Ontario.

Re: Mining Claims PA. 245578 et al,
 S.W. part of Sturgeon Lake Area,
File No. 2.196

Dear Sir:

The Geophysical (Electromagnetic) assessment work credits as shown on the attached list have been approved as of the date above. Please inform the recorded holder and so indicate on your records.

Yours very truly,

A handwritten signature in dark ink, appearing to read "Fred W. Matthews".

Fred W. Matthews,
 Supervisor,
 Projects Section.

c.c. Madsen Red Lake Gold Mines Ltd.,
 Room 1110, 55 Yonge St.,
 Toronto, Ontario.

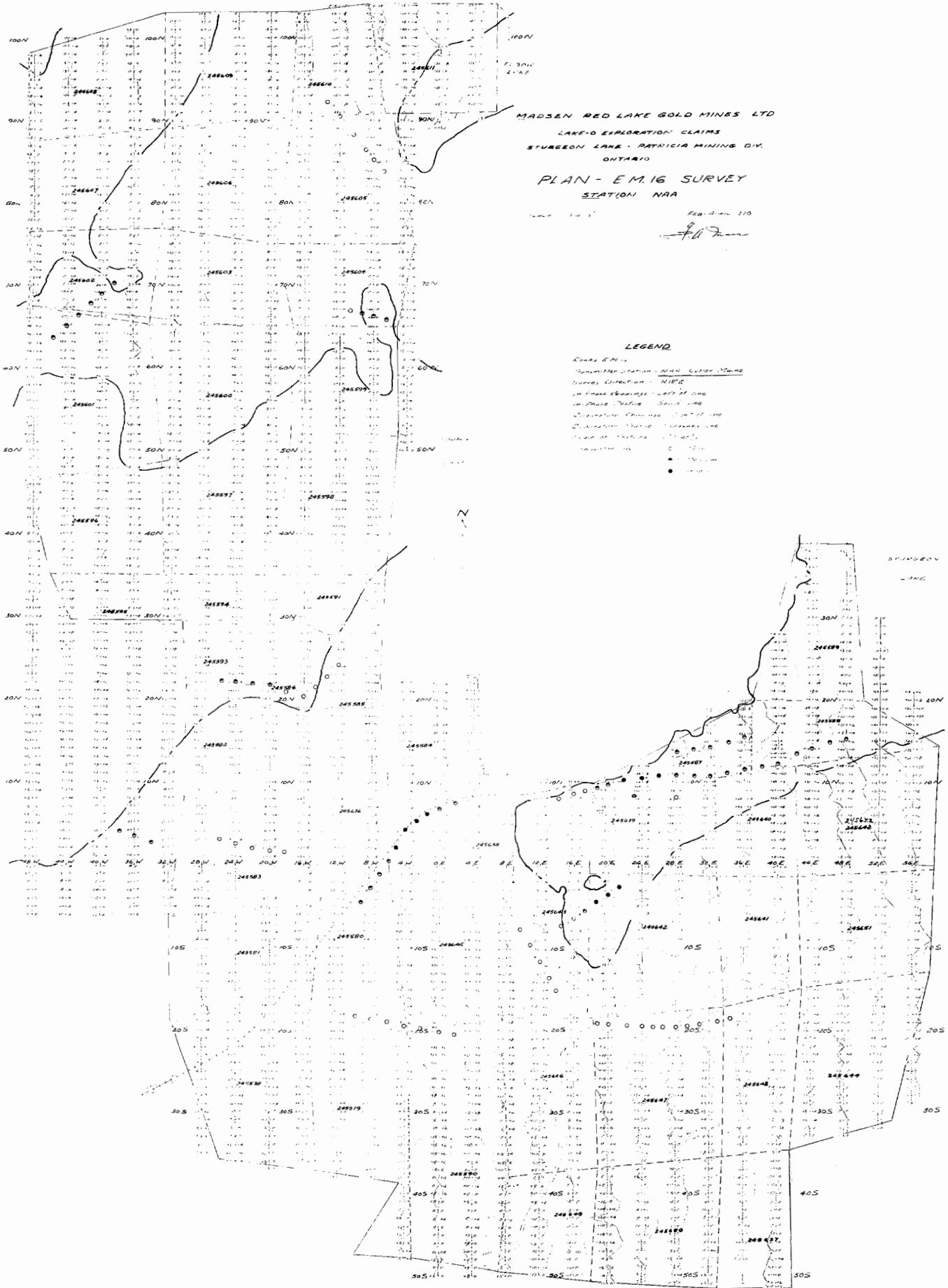
c.c. Madsen Red Lake Gold Mines Ltd.,
 Madsen, Ontario.

Attn: Mr. F.A. Innes, B.Sc., P. Eng.

c.c. Mr. H.L. King,
 Resident Geologist,
 808 Robertson St.,
 Kenora, Ontario. ✓

FWM/mr

48W 44W 40W 36W 32W 28W 24W 20W 16W 12W 8W 4W 0E 4E



MADSEN RED LAKE GOLD MINES LTD
 LAKE-O EXPLORATION CLAIMS
 STURGEON LAKE - PATRICIA MINING DIV.
 ONTARIO

PLAN - EM 16 SURVEY
 STATION NAA

Feb. 11, 1910

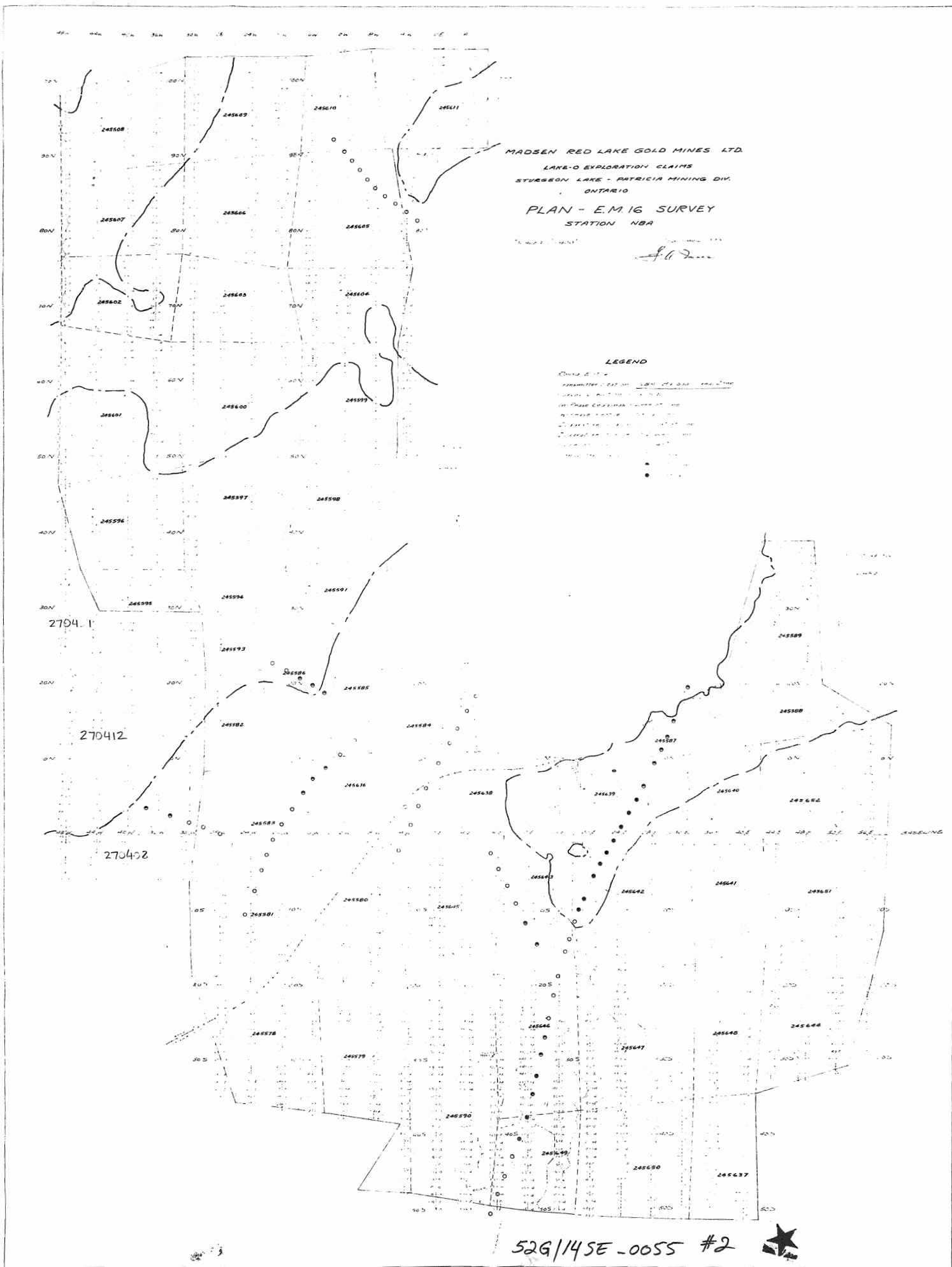
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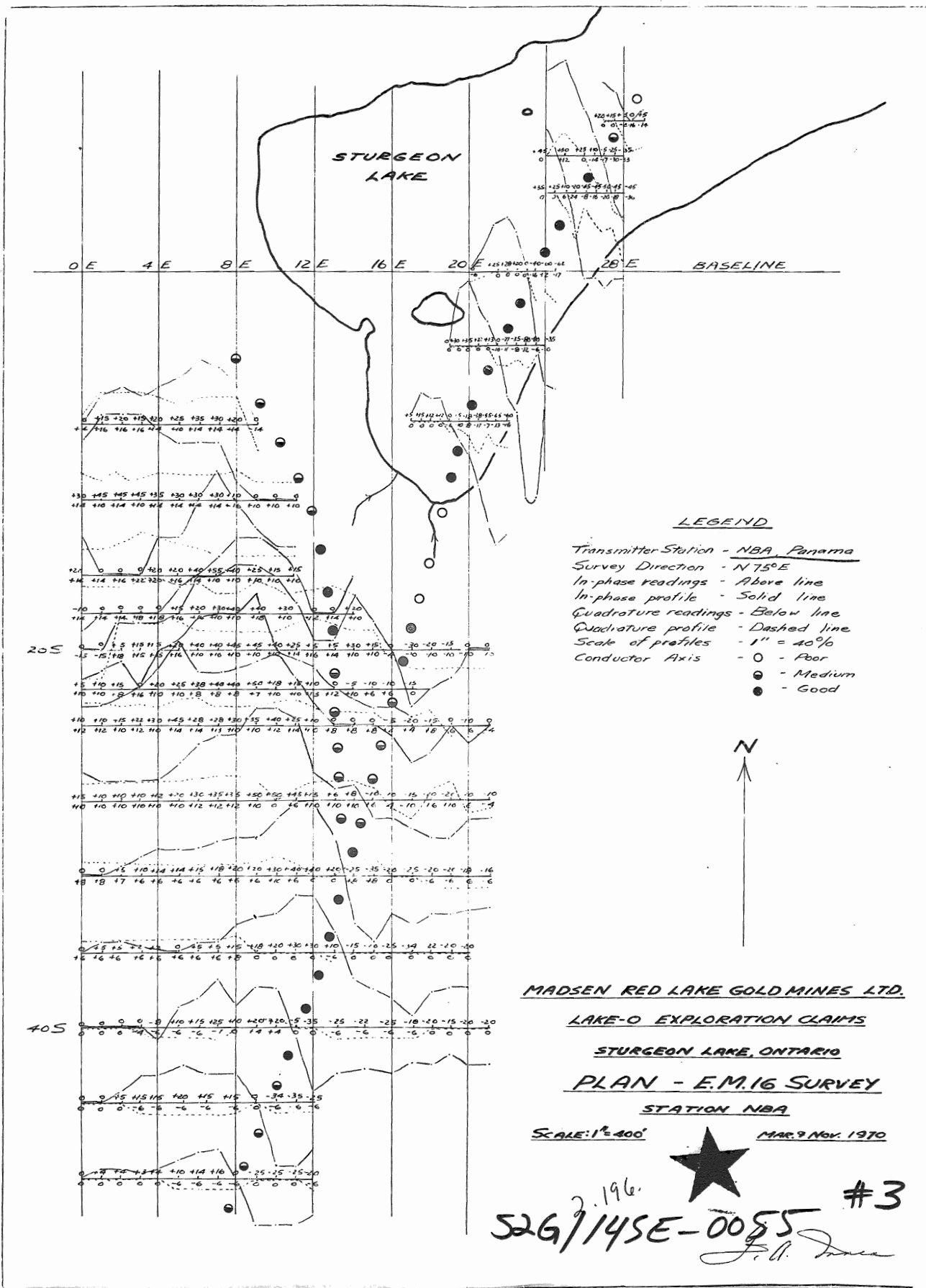
LEGEND

- Contour E.M. 10
- Summer Station - MAD Lake Mine
- Survey Direction - N182
- in Place Alluvial - 1000' and 1200'
- Unconsolidated - 1000' and 1200'
- Unconsolidated - 1000' and 1200'
- Unconsolidated - 1000' and 1200'

529/14SE-0055 #1







LEGEND

- Transmitter Station - NBA, Panama
- Survey Direction - N75°E
- In-phase readings - Above line
- In-phase profile - Solid line
- Quadrature readings - Below line
- Quadrature profile - Dashed line
- Scale of profiles - 1" = 40%
- Conductor Axis
 - - Poor
 - - Medium
 - - Good



MADSEN RED LAKE GOLD MINES LTD.

LAKE-O EXPLORATION CLAIMS

STURGEON LAKE, ONTARIO

PLAN - E.M. 16 SURVEY

STATION NBA

SCALE: 1" = 400'

MAR. 9 NOV. 1970



2.196.
526/145E-0055 #3
J.L. Jones

16x

