HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

on

SPOONER MINES AND OILS LIMITED PROPERTY

STURGEON LAKE AREA, ONTARIO.

To Accompany Maps No. 1, 2, 3, 4, 5 and 6

(MAIN GRID, DIAGONAL GRID AND COBB GRIDS 1, 2 and 3).
INTRODUCTION:

An electromagnetic horizontal loop survey was carried out between April 5, 1971 by Searcher Ltd., P.O. Box 69, Flin Flon, Manitoba, and March 4, 1972 by Antoni Wasyliuk, Box 641, Flin Flon, Manitoba on behalf of Granges Exploration Aktiebolag, Vancouver, B.C.

The Searcher Ltd. linecutting was supervised by Mr. Gordon Percival of Flin Flon, Manitoba and Antoni Wasyliuk's surveys were supervised by George Lawson of Flin Flon, Manitoba. The overall program was supervised by George Zbitnoff, Geologist, on behalf of Granges Exploration Aktiebolag.

LOCATION AND ACCESS:

The mineral claims as listed in Schedule "A" are located approximately 45 miles north of Ignace in northwestern Ontario. The area covered by these claims is half water and half land.

Access is by: a) ski or float equipped aircraft from Ignace, or b) by motoring 40 miles north on Highway 599 to a tourist camp at Granite Bay and then by canoe or skidoo northeast across Sturgeon Lake through the narrows on to the northeast shore of Cobb Bay, at which point you are on the claims.

GEOLOGY OF THE AREA:

The survey work was carried out on the property during the winter months, thus no geological observations were made on the property.
SUMMARY OF EXPLORATION WORK DONE TO DATE ON THE PROPERTY:

To the knowledge of the writer, no previous ground surveys were performed on the property prior to these surveys carried out on behalf of Gränges Exploration Aktiebolag. There was, however, an airborne electromagnetic and magnetic survey performed by Scintrex Ltd. for Spooner Mines & Oils Limited which was submitted as assessment work.

NAME AND ADDRESS OF OWNER OF THE CLAIMS:


Optioned to:

Gränges Exploration Aktiebolag, 1060 - 1055 West Hastings Street, Vancouver 1, B.C.

NAME AND ADDRESS OF PARTY SUBMITTING WORK:

The name and address of the party submitting the work for assessment purposes is: Gränges Exploration Aktiebolag, 1060 - 1055 West Hastings Street, Vancouver 1, B.C.

NUMBER OF CLAIMS COVERED BY THE SURVEY:

The numbers of the claims actually covered by the surveys on which the work is shown on attached map #1-6 and are specified on Schedule "A". A total of 244 claims were covered by this survey.
INSTRUMENTS USED TO PERFORM THE SURVEY:

The surveys were completed using two instruments.

1) An ABEM Electromagnetic Gun horizontal loop survey unit; manufactured by A.B. Electrisk Malmletning, Stockholm, Sweden, operating at 880 cycles per second and at 3520 cycles per second, and using a transmitter-receiver coil spacing of 300 feet.

2) An E.M.17 Electromagnetic horizontal loop survey unit manufactured by Geonics, Ltd. of Toronto, Ontario, operating at a frequency of 1600 cycles per second and using a transmitter-receiver coil separation of 300 feet.

3) An E.M.17 Electromagnetic horizontal loop survey unit manufactured by Geonics, Ltd. of Toronto, Ontario, operating at a frequency of 1600 cycles per second and using a transmitter-receiver coil separation of 300 feet.

Readings were recorded along the section lines of a 400-foot grid and isolated locations of 200-foot grid at 100-foot intervals and in anomalous zones at 50-foot intervals.

All of the above mentioned instruments operate on the same principal, with typical results for all being as in the following description. When the survey crew are traversing a section line and approaching a conductor, positive results are obtained. These are followed by negative readings when the conductor lies between the coils, and a second positive section when both coils have passed beyond the conductor.
Both In-Phase and Quadrature components show the same general response; however, the ratio of In-Phase to Quadrature is directly proportional to the conductivity of the zone. A ratio of In-Phase to Quadrature greater than two indicates a high conductivity. Ratios of one to two indicate medium conductivity, while a ratio of less than one indicates poor conductivity. Generally, ratios of less than 0.5 indicates a response due to ionic conduction in muskeg or lake bottom material.

The accompanying maps show the grid system, plotted readings and electromagnetic conductors. The locations of readings are indicated by dots along the section lines. Each location is the position of the mid-point between the transmitter and receiver coils when the reading was taken. The In-phase readings are plotted to the left of the dots and the Quadrature readings are plotted to the right.

TOTAL STATIONS AND READINGS TAKEN ON THE GRID:

The initial number of stations established on the grid was 10,804 stations with 21,608 readings taken. Total number of line miles cut on the grids on the claims submitted is 218.55 including base lines and section lines. Total number of miles of electromagnetic surveying carried out was 197.56 miles.
EXPENDITURES INCURRED ON THE SURVEY:

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RESULTS:

The results of the surveys performed are shown on enclosed maps #1, 2, 3, 4, 5 and 6. These maps are drawn on a scale of 1" = 400 feet and all adjoin to form one large map.

Several anomalous conditions are noted on the maps as indicated by the broken or solid red lines.

CONCLUSIONS AND RECOMMENDATIONS:

The conclusion reached is that the anomalies showing the highest and best ratios are caused by conductors which may or may not be economic material.

It is recommended that these conductors be further tested by diamond drilling to establish if they are of any economic importance.

George Zbitnov
Geologist
Granges Exploration Aktiebolag.
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**TOTAL = 244 Claims**
REPORT

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

on

SPOONER MINES AND OILS LIMITED PROPERTY

SIXMILE LAKE AREA, ONTARIO

To Accompany Map No. 7

("KENORA" GRID)
INTRODUCTION:

An electromagnetic horizontal loop survey was carried out between April 5, 1971 by Searchor Ltd., P.O. Box 69, Flin Flon, Manitoba, and March 4, 1972 by Antoni Wasyliuk, Box 641, Flin Flon, Manitoba on behalf of Granges Exploration Aktiebolag, Vancouver, B.C.

The Searchor Ltd. linecutting was supervised by Mr. Gordon Percival of Flin Flon, Manitoba and Antoni Wasyliuk's surveys were supervised by George Lawson of Flin Flon, Manitoba. The overall program was supervised by George Zbitnoff, Geologist, on behalf of Granges Exploration Aktiebolag.

LOCATION AND ACCESS:

The mineral claims as listed in Schedule "A" are located approximately 45 miles north of Ignace in northwestern Ontario. The area covered by these claims is half water and half land.

Access is by: a) ski or float equipped aircraft from Ignace, or b) by motoring 40 miles north on Highway 599 to a tourist camp at Granite Bay and then by canoe or skidoo northeast across Sturgeon Lake through the narrows on to the northeast shore of Cobb Bay, at which point you are on the claims.

GEOLOGY OF THE AREA:

The survey work was carried out on the property during the winter months, thus no geological observations were made on the property.
SUMMARY OF EXPLORATION WORK DONE TO DATE ON THE PROPERTY:

To the knowledge of the writer, no previous ground surveys were performed on the property prior to these surveys carried out on behalf of Granges Exploration Aktiebolag. There was, however, an airborne electromagnetic and magnetic survey performed by Scintrex Ltd. for Spooner Mines & Oils Limited which was submitted as assessment work.

NAME AND ADDRESS OF OWNER OF THE CLAIMS:

Spooner Mines and Oils Limited,
Suite 607 - 80 Richmond Street West,
Toronto 110, Ontario.

Optioned to:

Granges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.

NAME AND ADDRESS OF PARTY SUBMITTING WORK:

The name and address of the party submitting the work for assessment purposes is:

Granges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.

NUMBER OF CLAIMS COVERED BY THE SURVEY:

The numbers of the claims actually covered by the surveys on which the work is shown on attached map number 7 are specified on Schedule "A". A total of 25 claims were covered by this survey.
INSTRUMENTS USED TO PERFORM THE SURVEY:

The surveys were completed using two instruments.

1) An ABEM Electromagnetic Gun horizontal loop survey unit manufactured by A.B. Electrisk Malmletning, Stockholm, Sweden, operating at 880 cycles per second and at 3520 cycles per second, and using a transmitter-receiver coil spacing of 300 feet.

2) An E.M.17 Electromagnetic horizontal loop survey unit manufactured by Geonics, Ltd. of Toronto, Ontario, operating at a frequency of 1600 cycles per second and using a transmitter-receiver coil separation of 300 feet.

Readings were recorded along the section lines of a 400-foot acid at 100-foot intervals and in anomalous zones at 50-foot intervals.

The above mentioned instruments operate on the same principal, with typical results for all being as in the following description. When the survey crew are traversing a section line and approaching a conductor, positive results are obtained. These are followed by negative readings when the conductor lies between the coils, and a second positive section when both coils have passed beyond the conductor.

Both In-Phase and Quadrature components show the same general response; however, the ratio of In-Phase to Quadrature is directly proportional to the conductivity of the zone. A ratio of In-Phase to Quadrature greater than two indicates a high conductivity. Ratios of one to two indicate medium conductivity, while a ratio of less than one indicates poor conductivity. Generally,
ratios of less than 0.5 indicates a response due to ionic conduction in muskeg or lake bottom material.

The accompanying map shows the grid system and plotted readings. The locations of readings are indicated by dots along the section lines. Each location is the position of the mid-point between the transmitter and receiver coils when the reading was taken. The In-Phase readings are plotted to the left of the dots and the Quadrature readings are plotted to the right.

TOTAL STATIONS AND READINGS TAKEN ON THE GRID:

The initial number of stations established on the grid was 1,008 stations with 2,016 readings taken.

Total number of line miles cut on the grids on the claims submitted is 29.25 including base lines and section lines as much of the grid was to be re-established in 1972 before electromagnetic surveying could proceed. Total number of miles of electromagnetic surveying carried out was 18.20 miles.

EXPENDITURES INCURRED ON THE SURVEY:

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<th>Description</th>
<th>Amount</th>
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<td>Drafting, layouts, maps, etc.</td>
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<td>Office overhead (management, secretarial, rent, etc)</td>
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<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>$2,840.16</strong></td>
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</table>
RESULTS:

The results of the surveys performed are shown on the enclosed map number 7. This map is drawn on a scale of 1" = 400 feet. No anomalous conditions are noted on this map.

CONCLUSIONS AND RECOMMENDATIONS:

The conclusion reached is that no anomalous conditions exist. The chances of economic mineralization being in this group of claims is marginal or almost nonexistent. It is recommended that no further work be done on this group of claims.

George Zeintner,
Geologist,
GRANGES EXPLORATION AKTIEBOLAG
Schedule "A"

Electromagnetic Horizontal loop survey carried out on the following 25 claims in the Patricia Mining District located on Cobb Bay of Sturgeon Lake Claim Map #2877.

PA 247180 - 184 inclusive
PA 247189 - 193 "
PA 245941 - 945 "
PA 245964 - 965 "
PA 245873 - 874 "
PA 247155
PA 247161 - 165 "

REPORT

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

on

SPOONER MINES AND OILS LIMITED PROPERTY

FOURBAY LAKE AREA, ONTARIO

To Accompany Map No. 10

("KING" GRID)
INTRODUCTION:

An electromagnetic horizontal loop survey was carried out between March 8, 1972 by Geosearch Consultants Limited, Suite 1114, 100 University Avenue, Toronto 116, Ontario and April 6, 1972 by Antoni Wasyliuk, Box 641, Flin Flon, Manitoba on behalf of Gränges Exploration Aktiebolag, Vancouver, B.C.

The Geosearch Consultants Limited linecutting was supervised by Mr. M. Moreau of Toronto, Ontario and Antoni Wasyliuk's work was supervised by George Lawson of Flin Flon, Manitoba. The overall program was supervised by George Zbitnoff, Geologist, on behalf of Gränges Exploration Aktiebolag.

LOCATION AND ACCESS:

The mineral claims as listed in Schedule "A" are located approximately 55 miles northeast of Ignace in northwestern Ontario. The area covered by these claims is one-quarter water and three-quarters land.

Access is by: a) ski or float equipped aircraft from Ignace, or b) by motoring 40 miles north on Highway 599 to a tourist camp at Granite Bay and then by canoe or skidoo northeast across Sturgeon Lake through Sturgeon Lake Narrows on to the west end of King Bay, at which point you are approximately one mile south of the group of claims.
GEOLOGY OF THE AREA:

The survey work was carried out on the property during the winter months, thus no geological observations were made on the property.

SUMMARY OF EXPLORATION WORK DONE TO DATE ON THE PROPERTY:

To the knowledge of the writer, no previous ground surveys were performed on the property prior to these surveys carried out on behalf of Gränges Exploration Aktiebolag. There was, however, an airborne electromagnetic and magnetic survey performed by Scintrex Ltd. for Spooner Mines and Oils Limited which was submitted as assessment work.

NAME AND ADDRESS OF OWNER OF THE CLAIMS:

Spooner Mines and Oils Limited,
Suite 607 - 80 Richmond Street West,
Toronto 110, Ontario.

Optioned to:

Gränges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.

NAME AND ADDRESS OF PARTY SUBMITTING WORK:

The name and address of the party submitting the work for assessment purposes is: Gränges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.
NUMBER OF CLAIMS COVERED BY THE SURVEY:

The numbers of the claims actually covered by the surveys on which the work is shown on attached map number 10 are specified on Schedule "A". A total of 24 claims were covered by the survey.

INSTRUMENTS USED TO PERFORM THE SURVEY:

The surveys were completed using one instrument. It was an ABEM Electromagnetic Gun horizontal loop survey unit; manufactured by A. B. Electrisk Malmletning, Stockholm, Sweden, operating at 880 cycles per second and at 3520 cycles per second, and using a transmitter-receiver coil spacing of 300 feet.

Readings were recorded along the section lines of a 400-foot grid at 100-foot intervals and in anomalous zones at 50-foot intervals.

The above mentioned instrument operates with typical results as in the following description. When the survey crew are traversing a section line and approaching a conductor, positive results are obtained. These are followed by negative readings when the conductor lies between the coils; and a second positive section when both coils have passed beyond the conductor.

Both In-Phase and Quadrature components show the same general response; however, the ratio of In-Phase to Quadrature is directly proportional to the conductivity of the zone. A ratio
of In-Phase to Quadrature greater than two indicates a high conductivity. Ratios of one to two indicate medium conductivity, while a ratio of less than one indicates poor conductivity. Generally, ratios of less than 0.5 indicates a response due to ionic conduction in muskeg or lake bottom material.

The accompanying map shows the grid system, plotted readings and electromagnetic conductors. The locations of readings are indicated by dots along the section lines. Each location is the position of the mid-point between the transmitter and receiver coils when the reading was taken. The In-Phase readings are plotted to the left of the dots and the Quadrature readings are plotted to the right.

TOTAL STATIONS AND READINGS TAKEN ON THE GRID:

The initial number of stations established on the grid was 892 stations with 1784 readings taken.

Total number of line miles cut on the grids on claims submitted is 18.79 including base lines and section lines. Total number of miles of electromagnetic surveying carried out was 17.6 miles.
EXPENDITURES INCURRED ON THE SURVEY:

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RESULTS:

The results of the surveys performed are shown on enclosed map number 10. The map is drawn on a scale of 1" = 400 feet.

Several anomalous conditions are noted on the map as indicated either by the broken or solid red lines.

CONCLUSIONS AND RECOMMENDATIONS:

The conclusion reached is that the anomalies showing the highest and best ratios are caused by conductors which may or may not be caused by economic mineralization.

It is recommended that these conductors be further tested by diamond drilling to establish if they are of any economic importance.

G. Zotinoff,
Geologist,
GRANGES/EXPLORATION AKTIEBOLAG
SCHEDULE "A"

Electromagnetic horizontal loop survey was carried out on the following 24 claims located one mile north of King Bay in the Patricia Mining Division.

PA 252820 - 822 inclusive
PA 252828 - 833"
PA 250385 - 391"
PA 250393 - 398"
PA 249567 - 568"
REPORT

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

on

SPOONER MINES AND OILS LIMITED PROPERTY

FOURBAY LAKE AREA, ONTARIO

To Accompany Map No. 10

("JUMPING" GRID)
INTRODUCTION:

An electromagnetic horizontal loop survey was carried out between March 8, 1972 by Geosearch Consultants Limited, Suite 1114, 100 University Avenue, Toronto 116, Ontario and April 6, 1972 by Antoni Wasyliuk, Box 641, Flin Flon, Manitoba on behalf of Granges Exploration Aktiebolag, Vancouver, B.C.

The Geosearch Consultants Limited linecutting was supervised by Mr. M. Moreau of Toronto, Ontario and Antoni Wasyliuk's work was supervised by George Lawson of Flin Flon, Manitoba. The overall program was supervised by George Zbitnoff, Geologist, on behalf of Granges Exploration Aktiebolag.

LOCATION AND ACCESS:

The mineral claims as listed in Schedule "A" are located approximately 55 miles northeast of Ignace in northwestern Ontario. The area covered by these claims is one-quarter water and three-quarters land.

Access is by: a) ski or float equipped aircraft from Ignace, or b) by motoring 40 miles north on Highway 599 to a tourist camp at Granite Bay and then by canoe or skidoo northeast across Sturgeon Lake through Sturgeon Lake Narrows on to the west end of King Bay, at which point you are approximately one mile south of the group of claims.
GEOLOGY OF THE AREA:

The survey work was carried out on the property during the winter months, thus no geological observations were made on the property.

SUMMARY OF EXPLORATION WORK DONE TO DATE ON THE PROPERTY:

To the knowledge of the writer, no previous ground surveys were performed on the property prior to these surveys carried out on behalf of Gränges Exploration Aktiebolag. There was, however, an airborne electromagnetic and magnetic survey performed by Scintrex Ltd. for Spooner Mines and Oils Limited which was submitted as assessment work.

NAME AND ADDRESS OF OWNER OF THE CLAIMS:

Spooner Mines and Oils Limited,
Suite 607 - 80 Richmond Street West,
Toronto 110, Ontario.

Optioned to:

Gränges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.

NAME AND ADDRESS OF PARTY SUBMITTING WORK:

The name and address of the party submitting the work for assessment purposes is:

Gränges Exploration Aktiebolag,
1060 - 1055 West Hastings Street,
Vancouver 1, B.C.
NUMBER OF CLAIMS COVERED
BY THE SURVEY:

The numbers of the claims actually covered by the
surveys on which the work is shown on attached map number 10 are
specified on Schedule "A". A total of 28 claims were covered by
this survey.

INSTRUMENTS USED TO
PERFORM THE SURVEY:

The surveys were completed using two instruments.
1) An ABEM Electromagnetic Gun horizontal loop survey unit;
manufactured by A.B. Electrisk Malmletning, Stockholm, Sweden,
operating at 880 cycles per second and at 3520 cycles per second,
and using a transmitter-receiver coil spacing of 300 feet.
2) An E.M.17 Electromagnetic horizontal loop survey unit
manufactured by Geonics, Ltd. of Toronto, Ontario, operating at
a frequency of 1600 cycles per second and using a transmitter-
receiver coil separation of 300 feet.

Readings were recorded along the section lines of
a 400-foot grid at 100-foot intervals and in anomalous zones at
50-foot intervals.

The above mentioned instruments operate on the same
principal, with typical results for all being as in the following
description. When the survey crew are tranversing a section line
and approaching a conductor, positive results are obtained. These
are followed by negative readings when the conductor lies between
the coils, and a second positive section when both coils have
passed beyond the conductor.
Both In-Phase and Quadrature components show the same general response; however, the ratio of In-Phase to Quadrature is directly proportional to the conductivity of the zone. A ratio of In-Phase to Quadrature greater than two indicates a high conductivity. Ratios of one to two indicate medium conductivity, while a ratio of less than one indicates poor conductivity. Generally, ratios of less than 0.5 indicates a response due to ionic conduction in muskeg or lake bottom material.

The accompanying map shows the grid system, plotted readings and electromagnetic conductors. The locations of readings are indicated by dots along the section lines. Each location is the position of the mid-point between the transmitter and receiver coils when the reading was taken. The In-Phase readings are plotted to the left of the dots and the Quadrature readings are plotted to the right.

TOTAL STATIONS AND READINGS TAKEN ON THE GRID:

The initial number of stations established on the grid was 991 stations with 1982 readings taken.

Total number of line miles cut on the grids on claims submitted is 21.33 including base lines and section lines. Total number of miles of electromagnetic surveying carried out was 20.04 miles.
EXPENDITURES INCURRED ON THE SURVEY:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Line cutting</td>
<td>$1,919.70</td>
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<tr>
<td>Electromagnetic surveying</td>
<td>801.60</td>
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<tr>
<td>Drafting, layouts, maps, etc.</td>
<td>234.81</td>
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<tr>
<td>Office overhead (management, secretarial, rent, etc)</td>
<td>237.83</td>
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<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>$3,193.94</strong></td>
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RESULTS:

The results of the surveys performed are shown on enclosed map number 10. The map is drawn on a scale of 1" = 400 feet.

Several anomalous conditions are noted on the map as indicated either by the broken or solid red lines.

CONCLUSIONS AND RECOMMENDATIONS:

The conclusion reached is that the anomalies showing the highest and best ratios are caused by conductors which may or may not be caused by economic mineralization.

It is recommended that these conductors be further tested by diamond drilling to establish if they are of any economic importance.

G. Zbitnoff, 
Geologist, 
GRANGES EXPLORATION AKTIEBOLAG
Horizontal Loop Electromagnetic Survey was carried out on the following 28 claims located one mile north of King Bay in the Patricia Mining Division.

PA 236794 - 799 inclusive
PA 249496 - 503 "
PA 2494507
PA 257914 - 923 "
PA 247295 - 297 "
CERTIFICATE OF QUALIFICATION

I, George W. Zbitnoff, do hereby certify the following:

1) I am a graduate of the University of Saskatchewan in 1963 with a Bachelor of Arts degree in geology and chemistry.

2) I have been continually employed in mineral exploration since May 1, 1962 in Ontario, Manitoba, Saskatchewan, and British Columbia.

3) I am a Professional Engineer in the Province of Manitoba, and have a Professional Engineer application pending in British Columbia.

/lk

[Signature]

G. Zbitnoff
**Statement**

**Antoni Wasyluk**

**Box 611**

**Flin Flon, Manitoba**

**R 84 1 5**

**Date April 4th, 1972**

**Toronto, Expl manifestations, Canada**

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<th>BALANCE</th>
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<td>6.4</td>
<td>P. E.</td>
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<tr>
<td>9.7</td>
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**Notes:**
- P. E. stands for unspecified entries.
- The balance is $10.00.

**Signed:**

Approved

N. M. [Signature]

[Stamp: Radiforia BM1101]
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**RECEIVED**

Granges Exploration Canada

PR 1

Account No: 32097

Pen.

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<th>Item</th>
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<td>Balance</td>
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46.65 miles @ $90.00 per mile = 4,198.00

Apply 18-79 M 1/80 @ 90 = 1671.10

OK to pay 4,000.00

M. M.

To Stockholm for payment - April 7/72

Received

GEOCON - EXPLORATION CANADA

[Signature]

[Date: Apr 6 1972]

[Serial No.: 301]
### Statement

**Account:** Jumping Bad

**Date:** April 12

**Name:** Antoni Wasyluk

**Address:** Box 691, Elna, Alaska

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**Received:**

- 17.2 mi.
- $40.00
- 65%

**Received by:**

J. K.

**Account No.:** ZC 101

**Signed:** F/KO

- 08/04/00

**Received:**

- 4/13

**Sent to:**

- 4/13

- Glenda Exploration Canada

- PR '94

- 76-00
## Statement

**Antoni Wasyluk**
Box 611
Flin Flon, Manitoba

**Date:** April 4th, 1972

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<td>18.8</td>
<td>Jumping Grid</td>
<td>$40</td>
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**Total:** $25.1 in Cdn @ $40.

**Regard,**

Approved

[Signature]

[Postmark: April 10, 1972]
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<th>Item Description</th>
<th>Quantity</th>
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<td>Line cutting - Sturgeon Lake, Ontario</td>
<td>46.63 miles</td>
<td>$90.00 per mile</td>
<td>$4,198.00</td>
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**Total:** $4,980.00

**Received:**

Sturgeon Lake, Ontario

Tel. 96-3505

E. Morgan

Received $1,200.00

Blanket Creek

12 3rd Boulevard

Toronto, Ontario

**Payment Due:**

Date: April 7, 1972

Received: [Signature]

Note: The document is a bill for line cutting services with details of the service, quantity, rate, and total amount. It includes a note for payment due and a signature for receipt.
GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

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.

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Horizontal Loop Electromagnetic</th>
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<tr>
<td>Township or Area</td>
<td>Sturgeon Lake Area M2257 &amp; M2877</td>
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<tr>
<td>Claim holder(s)</td>
<td>Grønæs Exploration Aktiebolag</td>
</tr>
<tr>
<td>Optionor of claims from</td>
<td>Spooner Mines &amp; Oils Ltd.</td>
</tr>
<tr>
<td>Author of Report</td>
<td>George Zbitnoff</td>
</tr>
<tr>
<td>Address</td>
<td>1060 - 1055 West Hastings Street, Vanc BC</td>
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<tr>
<td>Covering Dates of Survey</td>
<td>February 1971 to March 1972</td>
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<td>Total Miles of Line cut</td>
<td>218.55</td>
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**SPECIAL PROVISIONS**

<table>
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<tr>
<th>CREDITS REQUESTED</th>
<th>Geophysical</th>
<th>DAYS per claim</th>
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<tr>
<td>ENTER 40 days (includes line cutting) for first survey.</td>
<td>Electromagnetic</td>
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<td>ENTER 20 days for each additional survey using same grid.</td>
<td>Magnetometer</td>
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**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

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<tr>
<th>Magnetoceiver</th>
<th>Electromagnetic</th>
<th>Radiometric</th>
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<td>(enter days per claim)</td>
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**DATE:** July 12/72

**SIGNATURE:** [Author of Report]

**PROJECTS SECTION**

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<th>Res. Geol.</th>
<th>Qualifications</th>
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**MINING CLAIMS TRAVERSED**

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<tr>
<th>List numerically</th>
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See attached list:

**TOTAL CLAIMS:** 244
GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS
Number of Stations: 10,804
Number of Readings: 21,608
Station interval: 100 feet and 50 feet
Line spacing: 400 feet and 200 feet
Profile scale or Contour intervals: (specify for each type of survey)

MAGNETIC
Instrument:
Accuracy - Scale constant:
Diurnal correction method:
Base station location:

ELECTROMAGNETIC
Instrument: ABEM 3520 Hz, 880 Hz; Ronke MK III 2400 Hz; Geonics EM 17 1600 Hz.
Coil configuration: Horizontal
Coil separation: 300 feet
Accuracy: ± 1%
Method: ☒ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line
Frequency: ABEM 3520 Hz & 880 Hz; Ronke 2400 Hz; Geonics EM 17 1600 Hz
Parameters measured: In-Phase and Quadrature

GRAVITY
Instrument:
Scale constant:
Corrections made:
Base station value and location:
Elevation accuracy:

INDUCED POLARIZATION - RESISTIVITY
Instrument:
Time domain: Frequency domain:
Frequency:
Power:
Electrode array:
Electrode spacing:
Type of electrode:
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</table>

TOTAL = 244 Claims
**Type of Survey:** Horizontal Loop Electromagnetic

**Township or Area:** Six Mile Lake (Map No. M2877)

**Claim holder(s):** Granges Exploration Aktiebolag

**Optionor of claims from:** Spooner Mines and Oils Ltd.

**Author of Report:** George Zbitnoff

**Address:** 1060 - 1055 West Hastings Street, Vanc, BC

**Covering Dates of Survey:** February 1, 1971 to March 4, 1972

**Total Miles of Line cut:** 29.25

---

### SPECIAL PROVISIONS CREDITS REQUESTED

<table>
<thead>
<tr>
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<th>DAYS per claim</th>
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<tr>
<td>Radiometric</td>
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<tr>
<td>Other</td>
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**Geological**

**Geochemical**

---

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

<table>
<thead>
<tr>
<th>Magnometer</th>
<th>Electromagnetic</th>
<th>Radiometric</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**DATE:** July 12/72  
**SIGNATURE:** Author of Report

---

**PROJECTS SECTION**

**Res. Geol.**

Qualifications

**Previous Surveys**

---

**Checked by:** date

**GEOLOGICAL BRANCH**

---

**Approved by:** date

**GEOLOGICAL BRANCH**

---

**Approved by:** date

---

**TOTAL CLAIMS:** 25
## GEOPHYSICAL TECHNICAL DATA

### GROUND SURVEYS

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Number of Stations</td>
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<td>Number of Readings</td>
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<td>Line spacing</td>
<td>400 feet</td>
</tr>
<tr>
<td>Profile scale or Contour intervals</td>
<td>(specify for each type of survey)</td>
</tr>
</tbody>
</table>

### MAGNETIC

- **Instrument**: 
- **Accuracy - Scale constant**: 
- **Diurnal correction method**: 
- **Base station location**: 

### ELECTROMAGNETIC

- **Instrument**: ABEM Gun and Geonics EM 17
- **Coil configuration**: Horizontal
- **Coil separation**: 300 feet
- **Accuracy**: ± 1%
- **Method**: [ ] Fixed transmitter [ ] Shoot back [x] In line [ ] Parallel line
- **Frequency**: ABEM Gun = 880 Hz, Geonics EM 17 = 1600 Hz
- **Parameters measured**: In-Phase and Quadrature

### 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**: 

PA 247180
  81
  82
  83
  84
PA 247169
  90
  91
  92
  93
PA 245941
  42
  43
  44
  45
PA 245964
  65
PA 245873
  74
PA 247155
PA 247161
  62
  63
  64
  65

Total - 25 Claims
GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

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: Horizontal Loop Electromagnetic
Township or Area: Four Boy Lake Area (Map No. M2879)
Claim holder(s): Granges Exploration Aktiebolag, Agent for Spooner Mines & Oils Limited
Author of Report: George Zbitnoff
Address: 1060 - 1055 West Hastings Street, Van. BC
Covering Dates of Survey: March 8, 1972 to April 6, 1972
Total Miles of Line cut: 21.33

<table>
<thead>
<tr>
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<th>DAYS per claim</th>
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<tr>
<td>Geochemical</td>
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</table>

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer: ___________
Electromagnetic: ___________
Radiometric: ___________

DATE: July 12/72
SIGNATURE: ________________________________

PROJECTS SECTION
Res. Geol. ___________ Qualifications ___________
Previous Surveys ________________________________________________________________________

MINING CLAIMS TRAVERSED
List numerically
See attached list.

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TOTAL CLAIMS: 28
GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS
Number of Stations: 991
Number of Readings: 1982
Station interval: 100 feet and 50 feet
Line spacing: 400 feet
Profile scale or Contour intervals: (specify for each type of survey)

MAGNETIC
Instrument: ____________________________
Accuracy: Scale constant
Diurnal correction method
Base station location

ELECTROMAGNETIC
Instrument: ABEM Electromagnetic Gun and Geonics E.M. 17
Coil configuration: Horizontal
Coil separation: 300 feet
Accuracy: ± 1%
Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line
Frequency: (specify V.L.F. station)
Parameters measured: In-Phase and Quadrature

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
PA 236794
95
96
97
98
99
PA 249496
97
98
99
249500
01
02
03
07
PA 257914
15
16
17
18
19
20
21
22
23
PA 247295
96
97
**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL TECHNICAL DATA STATEMENT**

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: Horizontal Loop Electromagnetic
Township or Area: Four Bay Lake Area (Map No. 2879)
Claim holder(s): Granges Exploration Aktiebolag
Agent for Spooner Mines & Oils Limited
Author of Report: George Zbitnoff
Address: 1060 - 1055 West Hastings Street, Van.
Covering Dates of Survey: March 8, 1972 to April 6, 1972
(linecutting to office)
Total Miles of Line cut: 18.79

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<tr>
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**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

Magnetometer: ________ Electromagnetic: ________ Radiometric: ________
(enter days per claim)

DATE: July 12/72 SIGNATURE: __________
Author of Report

**MINING CLAIMS TRAVERSED**
List numerically
See Attached List
(prefix) (number)

**PROJECTS SECTION**
Res. Geol. ________ Qualifications ________
Previous Surveys ________
Checked by ________ date ________
GEOLOGICAL BRANCH ________
Approved by ________ date ________
GEOLOGICAL BRANCH ________
Approved by ________ date ________

**TOTAL CLAIMS** 24
# GEOPHYSICAL TECHNICAL DATA

## GROUND SURVEYS

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<td>Profile scale or Contour intervals</td>
<td>(specify for each type of survey)</td>
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## MAGNETIC

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<tr>
<td>Diurnal correction method</td>
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<td>Base station location</td>
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## ELECTROMAGNETIC

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## GRAVITY

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## INDUCED POLARIZATION - RESISTIVITY

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<td>Range</td>
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<td>Power</td>
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<td>Electrode spacing</td>
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<tr>
<td>Type of electrode</td>
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PA 252820 - 822 inclusive
PA 252828 - 833 "
PA 250385 - 391 "
PA 250393 - 398 "
PA 249567 - 568 "

#4
Box 669
Sioux Lookout, Ontario
August 1, 1972

Granges Exploration AB,
1060-1055 W. Hastings St.
Vancouver, B.C.

Attention: Mr. G. Zbitnoff

Dear Sir:

Re: Spooner Mines and Oils Limited
Miners' Licence T-287
Assessment Work Reports

Enclosed is your recent work submission covering
géophysical E.M. surveys on 321 claims recorded in the
name of Spooner Mines and Oil Limited. As the claims
have not been transferred on record to Granges, it will
be necessary to complete new yellow form in the name of
Spooner. You are still entitled to sign the report forms
as agent.

Extra forms are enclosed.

Yours truly,

W. A. Buchan
Mining Recorder

WAB/Sc
Encls.

cc: F.W. Matthews
Supervisor, Projects Section

Spooner Mines & Oil Ltd
607-80 Richmond St. W.
Toronto, Ontario
Mr. W. A. Buchan,
Mining Recorder,
Box 669,
Sioux Lookout, Ontario.

Dear Mr. Buchan:

With reference to your letter of August 1st, 1972, enclosed please find new yellow forms covering
geophysical electromagnetic surveys on 321 claims recorded
in the name of Spooner Mines and Oils Limited.

By copy of this letter we are forwarding new
Technical Data Statements to the Minister of Mines in
Toronto correcting the name of the Claim Holder. These
forms are normally pink in colour but we did not have a
large supply and the new forms which we are sending today
are white in colour.

We hope the above meets with your approval.

Yours truly,

G. Zbitnoff,
Assistant Manager.

GZ/1k
Encl.

cc/ Mr. F. W. Matthews,
Supervisor, Projects Section.
Mr. W. A. Buchan  
Mining Recorder  
Court House  
Sioux Lookout, Ontario  

Dear Sir:  


The Geophysical (Electromagnetic) assessment work credits as listed with my Notice of Intent dated February 13, 1973 have been approved as of the date above. Please inform the recorded holder and so indicate on your records.  

Yours very truly,  

Fred W. Matthews  
Supervisor  
Project Unit  

cc: Spooner Mines & Oils Ltd.  
cc: Granges Exploration AB  
cc: Resident Geologist  
Kenora, Ontario
FOR ADDITIONAL INFORMATION

SEE MAPS:

52J/025W-0061
On the Surveying Map

Legend—

SEARCHOR LTD.
P.O. BOX 69 FUN FLON, MAN.
SURVEYED FOR
GRANGES EXPLORATION AB
VANCOUVER, BC.

PROPERTY: SPOONER MINES SOILS OPTION - STURGEON LAKE AREA

SURVEY HORIZONTAL LOOP ELECTROMAGNETIC

DRAWN BY G. PERKINS
INTERPRETED BY

SCALE: 1" = 400'
INSTRUMENT: RONKA MK & GEONICS BM 17
FREQUENCY: 2400 Hz
COIL SPACING: 300 ft.
MAP: STURGEON DIAGONAL

Details of work being submitted in area outlined:

 Survey Results for the Claim

Surveying Map * P

On the Surveying Map

SEARCHOR LTD.
P.O. BOX 69 FUN FLON, MAN.
SURVEYED FOR
GRANGES EXPLORATION AB
VANCOUVER, BC.

PROPERTY: SPOONER MINES SOILS OPTION - STURGEON LAKE AREA

SURVEY HORIZONTAL LOOP ELECTROMAGNETIC

DRAWN BY G. PERKINS
INTERPRETED BY

SCALE: 1" = 400'
INSTRUMENT: RONKA MK & GEONICS BM 17
FREQUENCY: 2400 Hz
COIL SPACING: 300 ft.
MAP: STURGEON DIAGONAL

Details of work being submitted in area outlined:
FOUR BAY LAKE

KENORA GRD

SCALE 1:40000

LOCATION MAP

INSTRUMENTS: ABEM GUN GEONICS EM 17
COIL SPACING: 300' FREQUENCY 50-200 HZ

DRAWN BY: D T
DATE: APRIL 72
SURVEYED BY: G. LAWSON & J.

GRANGES EXPLORATION AB
CANADIAN DIVISION
VANCOUVER OFFICE

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY
SPOONER MINES & OILS LTD. OPTION
SASKATE LAKE, ONT.
Area of Sixmile Lake

District of Kenora-Thunder Bay

Patricia Mining Division

Scale: 1-Inch = 40 Chains

Legend

- Crown Land Sale
- Lease
- Licence of Occupation
- Mining Rights Only
- Water
- Road
- Highways
- Power Lines
- Tracts or Blocks
- Crown Reserves

Notes

ROD Service Rights Reservation around oil lakes and rivers.

Plan No. M. 2877

Ontario Department of Mines and Northern Affairs