NTS. 42-A-16

2.5034

Report on

An Airborne Geophysical Survey

Performed On

<u>MARATHON 1-82 and BOWYER 1-82</u>

Marathon, Bowyer Twps.

Larder Lake Mining Division

August 25, 1982
Timmins, Ontario

L.A. Waddell
Noranda Exploration Co. Ltd.

Airborne Geophysical Survey

Marathon 1-82 and Bowyer 1-82

Introduction:

On October 31 and November 1 and 3, 1981 an airborne geophysical survey was flown by Questor Surveys Limited on behalf of Noranda Exploration Company Limited over portions or all of Stimson, Mortimer, Sweatman, Sherring, Edwards, Wesley, Findlay, Marathon, Moody, Bowyer, Galna, Purvis and Kerrs Townships all located in northeastern Ontario.

The survey mileage was 1079 line miles and the aircraft used was a Shorts Skyvan C-GDRG operating from a base at Timmins, Ontario.

This report is submitted to satisfy the requirements necessary to obtain an airborne geophysical certificate for all claims acquired after the survey was completed.

A total of 152 contiguous mining claims were staked in Bowyer and Marathon Township which are numbered as follows:

L-625026 to L-625046 inclusive,. march 24th 82.
L-625056 to L-625076 inclusive,. " " "
and L-641219 to L-641328 inclusive. March

Mapsoutlining the survey and the boundary of the claim group are shown at the end of this report.

The technical information and survey specifications have been abstracted from information supplied by Questor Surveys limited, 6380 Viscount Road, Mississauga, Ontario.

Map Compilation:

The base maps are uncontrolled mosaics constructed from National Air Photo Library 1:50,797 photographs. These mosaics were used to produce maps at a scale of 1:31,680 on stable transparent film from which white prints can be made.

Flight path recovery was accomplished by comparison of the 35 mm film with the mosaic in order to locate the fiducial points. These points are approximately 4100 feet apart.

Survey Procedure:

Terrain clearance was maintained as close to 400 feet as possible, with the E.M. Bird at approximately 150 feet above the ground. A normal S-pattern flight path using approximately one mile turns was used. The equipment operator logged the flight details and monitored the instruments.

A line spacing of 1320 feet was used for the survey.

Results:

There is a mixture of rock types throughout the area however, the exact distribution is not known because of the intensive cover of overlaying conductive to semi-conductive clays. The thickness of the layer varies and is thought to be anywhere from 25 feet to 300 feet. Mafic flows and pyroclastic rocks predominate the area (derived from drill holes and an aeromagnetic interpretation). However, metasediments underlie a substantial area and a great number of the INPUT conductors intercepted during the course of this survey correlate with this rock unit. There are mafic and ultramafic intrusives including gabbro, diorite, dunite, peridotite and serpentinite. These latter rock units are easily distinguishable by their very high magnetic susceptibility. A great number of north-south trending diabase dykes exist throughout the survey area and, in some areas, tend to distort the magnetic picture.

Bedrock conductors have been outlined on the groups with an axis having long dashed lines while areas that are considered due to weak structural affects, conductive overburden or lake bottom sediments have been indicated with short dashed lines.

Comments on each conductor by Robert J. de Carle, chief geophysicist for Questor Surveys, are reproduced below.

Conductor A-29

The indicated area displays a good electromagnetic response and also has magnetic association, in the order of 172 gammas. Pyrrhotite may be the source. Mafic flows and pyroclastic rocks have benn described as being the rock types.

A dip to the south is interpreted, in the order of 50^{o}. The slow amplitude decay along with the small responses suggests that the source is quite deep, perhaps in the order of 350 feet.

The conductor is recommended as a top priority target.

Conductor A-30

This long conductor displays a good electromagnetic response but has little or no magnetic association. The relationship of this zone with the flank of a magnetic feature suggest the association of the conductor with a geological contact. The one area which does have magnetic correlation is near the Marathon-Bowyer Twonship line. Here the magnetic intensity is roughly 212 gammas.

A dip to the north is interpreted for most of the trend, at approximately 50^{o}. Note how the amplitides are stronger in the north direction. However, towards the east end of the long zone, the conductor appears to have been overturned and is dipping to the south (just inside Bowyer Township).

Referring to Geology Map 2205, note that a major fault zone is traversing in a northeast-southwest direction and is almost parallel to CONDUCTOR A-30 between lines 10690 and 10720. The zone in this particular area is very weak.

It is not quite certain what happens towards the eastern most part of the conductor. I have interpreted two zones here (A-30 and A-32), just to the south of the railway tracks. In any event, this is an area which should be investigated. Another area which warrants a preliminary study is in the vicinity of intercepts 10430C.

Conductor A-31

This lone intercept is thought to be an isolated zone displaying a weak electromagnetic response. There is also good magnetic association suggesting that pyrrhotite may be the source. At first, it was felt that A-31 may, in fact, correlate with the anomaly on the next line, intercept 10600E. This would be based on the magnetics. However, the strong electromagnetic responses are consistent from line to line and thus the interpretation was changed.

However, the lone intercept does display a weak E.M. response and thus, the target is considered a low priority zone.

Conductor A-32

This zone displays good electromagnetic response and as such, is considered due to a bedrock source. One area along A-32 which could be investigated is between lines 10730 and 10770. There is good magnetic correlation and, one suspects pyrrhotite. Economic sulphides may be present.

Referring to Geology Map 2205, it will be noted that the conductor is located quite close to a medisedimentary-mafic flow, pyroclastic rock contact.

Respectfully submitted,

Noranda Exploration Company, Limited

L.A. Waddell

REFERENCES

Lovell, H. L., and Frey, E.D., 1972, Galna Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 774, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Lovell, H. L., 1972, Kerrs Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 773, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Lovell, H. L., and Frey, E. D., 1972, Moody Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 776, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Lovell, H. L., Frey, E. D., and de Grijs, Jan, 1973, Mortimer Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 851, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Lovell, H. L., and Frey, E. D., 1972, Sherring Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 778, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Lovell, H. L., and Frey, E. D., 1972, Wesley Township, District of Cochrane; Ontario Division of Mines, Preliminary Map P. 777, Kirkland Lake Data Series, scale 1 inch to ¼ mile.

Pyke, D. R., Ayres, L. D., and Innes, D. G., 1970, 1971, Geological Compilation Series, Districts of Cochrane, Sudbury and Timiskaming, Timmins - Kirkland Lake, Map 2205, scale 1 inch to 4 miles.

Simony, P. S., 1965, Geological Report No. 37, Rickard, Knox and Kerrs Townships, District of Cochrane, Map 2073, scale 1 inch to ½ mile.

APPENDIX

Equipment:

The aircraft is equipped with a Mark VI INPUT (R) airborne E.M. system and Sonotek P.M.H. 5010 Proton Magnetometer. Radar altimeters are used for vertical control. The outputs of these instruments together with fiducial timing marks are recorded by means of galvanometer type recorders using light sensitive paper. Thirty-five millimeter continuous strip cameras are used to record the actual flight path.

(I) Barringer/Questor Mark VI INPUT (R) System:

The Induced Pulse Transient (INPUT) system is particularly well suited to the problems of overburden penetration. Currents are induced into the ground by means of a pulsed primary electromagnetic field which is generated in a transmitting loop around the aircraft. By using half sine wave current pulses and a loop of large turns-area, the high output power needed for deep penetration is achieved.

The induced current in a conductor produces a secondary electromagnetic field which is detected and measured after the termination of each primary pulse. Detection is accomplished by means of a receiving coil towed behind the aircraft on four hundred feet of cable, and the received signal is processed and recorded by equipment in the aircraft. Since the measurements are in the time domain rather than the frequency domain common to continuous wave systems, interference effects of the primary transmitted field are eliminated. The secondary field is in the form of a decaying voltage transient originating in time at the termination of the transmitted pulse. The amplitude of the transient is, of course, proportional to the amount of current induced into the conductor and, in turn, this current is proportional to the dimensions, the conductivity and the depth beneath the aircraft.

The rate of decay of the transient is inversely proportional to conductivity. By sampling the decay curve at six different time intervals, and recording the amplitude of each sample, an estimate of the relative conductivity can be obtained. By this means, it is possible to discriminate between the effects due to conductive near-surface materials such as swamps and lake bottom silts, and those due to genuine bedrock sources. The transients due to strong conductors such as sulphides exhibit long decay curves and are therefore commonly recorded on all six channels. Sheet-like surface materials, on the other hand, have short decay curves and will normally only show a response in the first two or three channels.

The samples, or gates, are positioned at 334, 498, 744, 1072, 1482 and 1974 micro-seconds after the cessation of the pulse. The widths of the gates are 164, 164, 328, 328, 492, and 492 micro-seconds respectively.

For homogeneous conditions, the transient decay will be exponential and the time constant of decay is equal to the time difference at two successive sampling points divided the log ratio of the amplitudes at these points.

(II) Sonotek P.M.H. 5010 Proton Magnetometer:

The magnetometers which measure the total magnetic field have a sensitivity of 1 gamma and a range from 20,000 gammas to 100,000 gammas.

Because of the high intensity field produced by the INPUT transmitter, the magnetometer results are recorded on a time-sharing basis. The magnetometer head is energized while the transmitter is on, but the read-out is obtained during a short period when the transmitter is off. The precession frequency is being recorded and converted to gammas during the 0.2 second interval when there is no power in the transmitter loop.

For this survey, a lag factor has been applied to the data. Magnetic data recorded on the analogue records at fiducial 9.95 on the mosaics.

Data Presentation:

The symbols used to designate the anomalies are shown in the legend on each map sheet, and the anomalies on each line are lettered in alphabetical order in the direction of flight. Their locations are plotted with reference to the fiducial numbers on the analog record.

A sample record is included to indicate the method used for correcting the position of the E.M. Bird and to identify the parameters that are recorded.

All the anomaly locations, magnetic correlations, conductivity-thickness values and the amplitudes of channel number 2 are listed on the data sheets accompanying the final maps.

General Interpretation:

The INPUT system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Differentiation is based on the rate of transient decay, magnetic correlation and the anomaly shape together with the conductor pattern and topography.

Power lines sometimes produce spurious anomalies but these can be identified by reference to the monitor channel.

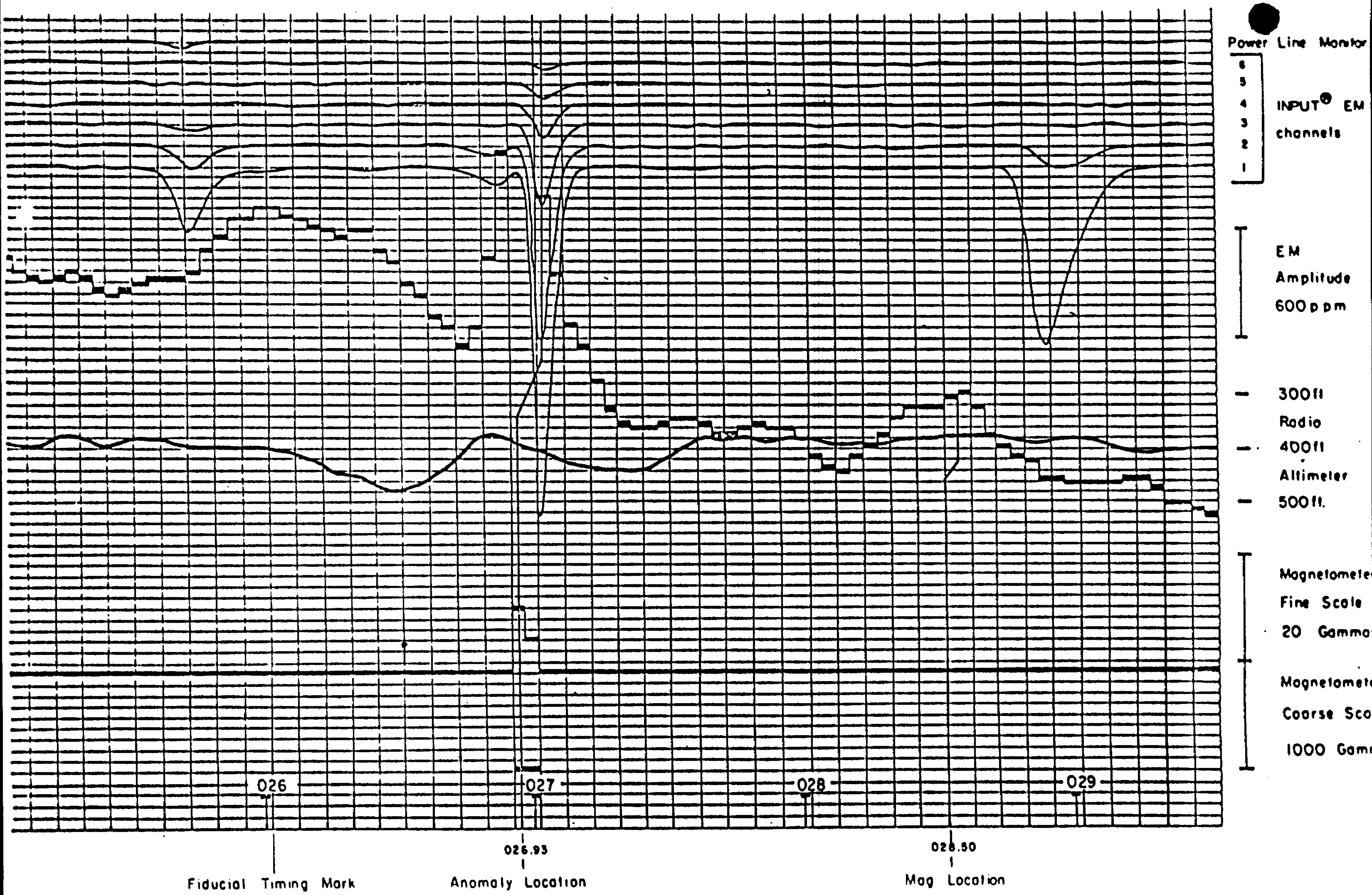
Railroad and pipeline responses are recognized by studying the film strips.

Graphite or carbonaceous material exhibits a wide range of conductivity. When long conductors without magnetic correlation are located on or parallel to known faults or photographic linears, graphite is most likely the cause.

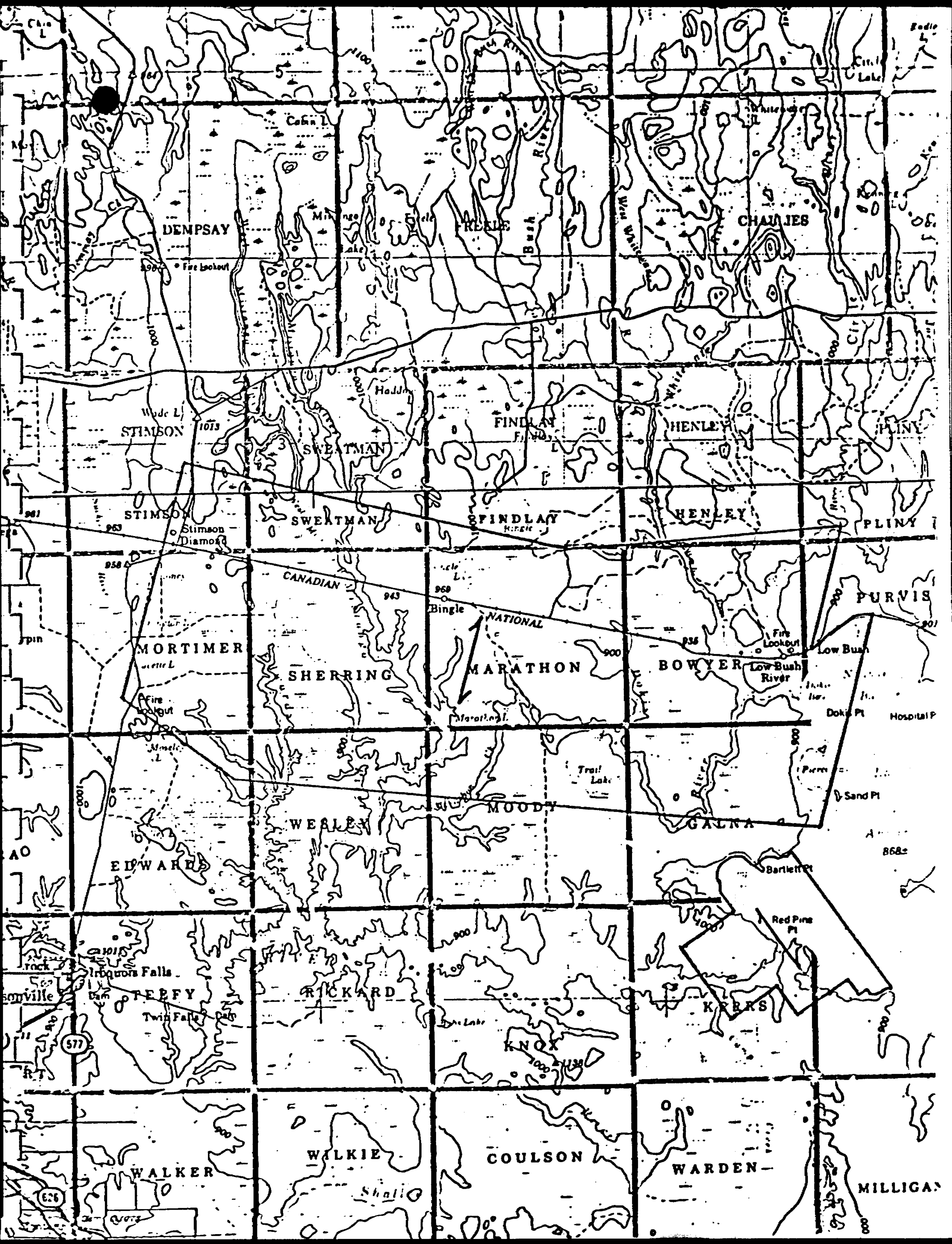
Contact zones can often be predicted when anomaly trends coincide with the lines of maximum gradient along a flanking magnetic anomaly. It is unfortuante that graphite can also occur as relatively short conductors and produce attractive looking anomalies. With no other information than the airborne results, these must be exmined on the ground.

Serpentinized peridotites often produce anomalies with a character that is fairly easy to recognize. The conductivity which is probably caused in part by magnetite, is fairly low so that the anomalies often have fairly large response on channel #1; they decay rapidly, and they have strong magnetic correlation. INPUT E.M. anomalies over massive magnetites show a relationship to the total Fe content. Below 25 - 30%, very little or no response at all is obtained, but as the percentage increases the anomalies become quite strong with a characteristic rate of decay which is usually greater than that produced by massive sulphides.

Commercial sulphide ore bodies are rare, and those that respond to airborne survey methods usually have medium to high conductivity. Limited lateral dimensions are to be expected and many have magnetic correlation caused by magnetite or pyrrhotite. Provided that the ore bodies do not occur within formational conductive zones as mentioned above, the anomalies caused by them will usually re recognized on an E.M. map as priority targets.



Representative INPUT®, Magnetometer and Altimeter Recording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SHERRING
MARATHON
BOWYER
Low Bush River
Low Bush
PURVIS
Fire Lookout
Doke Pt
Hospital Pt
Trail Lake
Sand Pt
MOODY
WESLEY
GALNA
EDWARDS
Bartlett Pt
Red Pine Pt
Iroquois Falls
TEEFY
Twin Falls
RICKARD
KERRS
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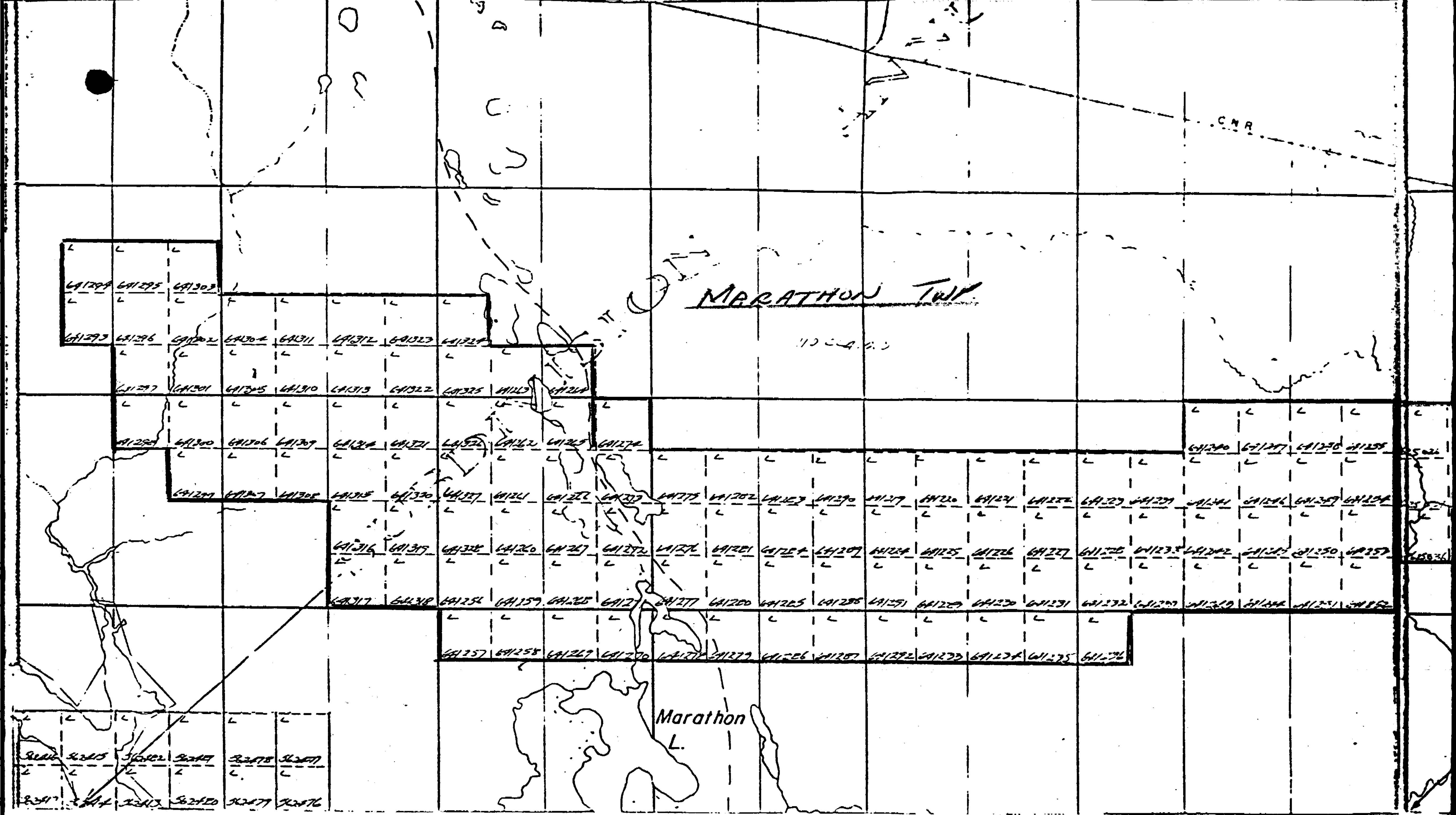

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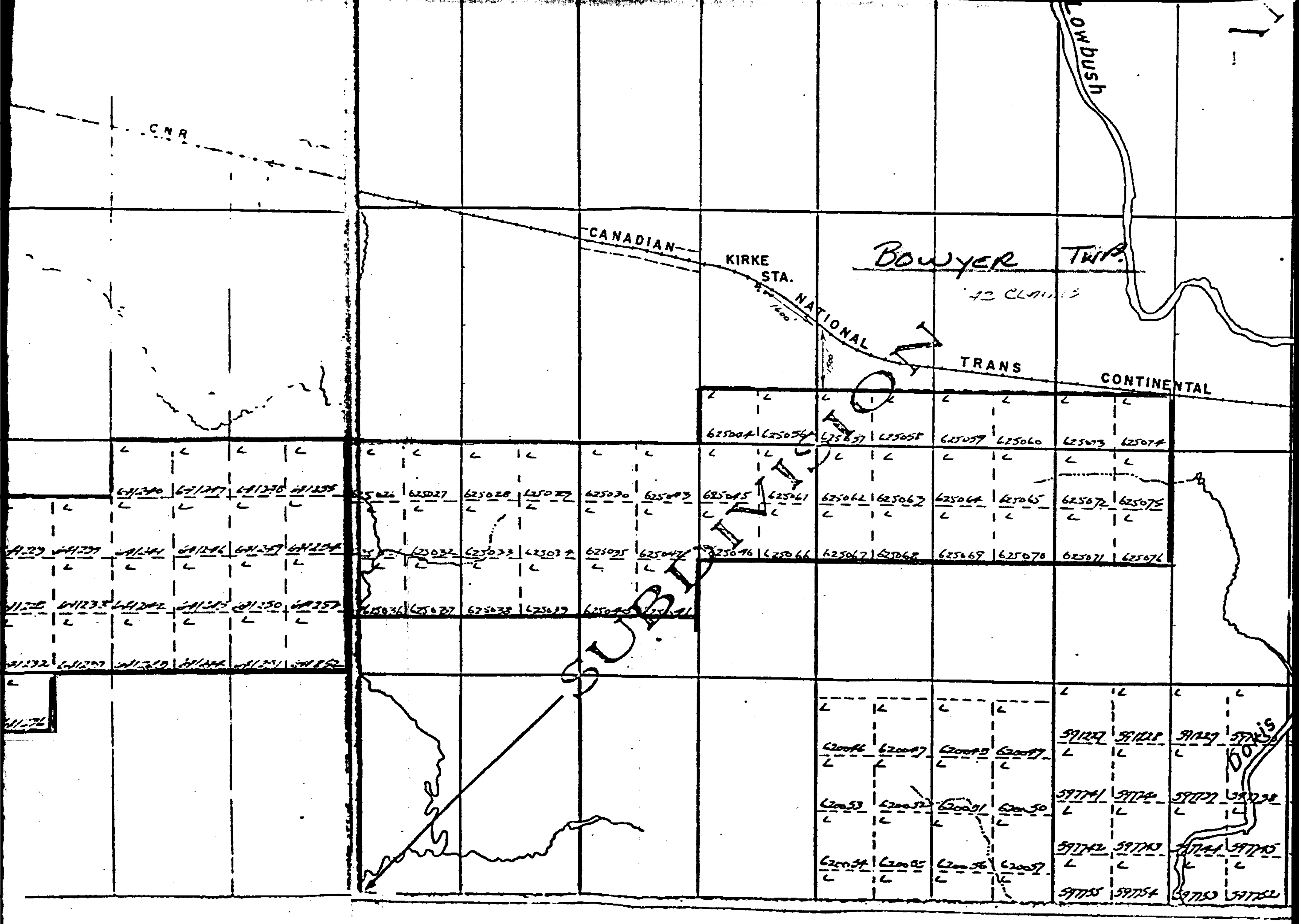

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BOWYER TWP.
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FINAL ANOMALY	FID	CHS	CH1.AMP	CH2.AMP	SIEMENS	MAG	VALUE
10420G	110.106	3		219	1	110.30	68
10430C	94.768	6		542	2	94.70	153
10441A	82.160	5		525	2	-	
10450A	66.738	6		596	2	-	
10461E	53.378	3		223	1	-	
10470B	36.413	4		387	2	-	
10490B	725.567	6		285	22	725.55	172
10490C	726.483	4		322	1	-	
10500H	710.446	5		242	5	-	
10510B	696.801	6		390	31	-	
10510C	697.027	4		456	8	-	
10510D	697.460	4		181	4	-	
10520E	682.549	6		417	16	-	
10520F	683.090	4		129	2	-	
10530A	670.280	6		283	22	670.10	176
10540G	654.902	3		59	12	-	
10540H	655.146	6		312	10	-	
10550B	641.409	5		195	28	-	
10560E	625.857	4		237	2	-	
10570B	613.244	3		128	2	-	
10580F	598.393	5		370	2	-	
10590A	584.856	4		87	1	584.85	191
10590B	585.424	6		418	4	-	
10600E	569.162	5		307	5	569.20	141
10610B	556.125	6		336	19	-	
10620C	540.574	6		727	8	540.70	176
10630B	527.164	3		307	1	-	

FINAL ANOMALY	FID	CHS	CH1.AMP	CH2.AMP	SIEMENS	MAG	VALUE
10630C	527.520	6		266	30	527.35	127
10640C	511.548	6		1098	12	511.55	212
10650B	497.833	6		340	14	497.85	130
10660D	482.806	6		598	6	482.75	82
10670A	468.193	6		561	8	-	
10680C	453.988	6		331	8	-	
10690B	439.495	4		276	4	-	
10730A	378.324	3		146	1	378.30	108
10740C	363.686	3		204	1	-	
10750A	347.661	2		99	NC	347.70	64
10750B	347.815	3		186	1	-	
10760E	332.756	5		409	3	332.75	137
10770A	316.394	4		282	1	316.30	54
10390BN	151.70	3		360	1	-	
10390BP	151.90	3		360	1	151.90	60
10411T	123.95	3		480	1	124.10	60
10440K	78.43	3		420	1	-	
10440L	78.62	3		420	1	-	
10440M	80.00	5		480	10	79.95	250
10440N	80.55	3		180	1	-	
10470BX	35.50	3		120	1	35.50	110
10481B	22.00	3		180	1	21.95	4
10481C	22.90	3		120	2	22.75	30
10500J	710.80	2		60	NC	710.95	200
10500K	711.20	4		120	9	-	
10510AX	690.60	2		90	NC	690.70	8
10520G	687.83	3		120	1	687.80	6

[illegible]NAL ANOMALY	FID	CHS	CH1.AMP	CH2.AMP	SIEMENS	MAG	VALUE
10520H	687.95	3		120	1	-	
10520J	688.80	3		90	1	688.55	100
10540GX	653.78	3		90	1	-	
10550AX	640.90	2		150	NC	640.80	30
10550A	641.05	2		90	NC	641.20	20
10580G	601.25	3		360	1	-	
10580H	603.05	3		90	1	-	
10600F	574.95	3		150	1	575.00	4
10610A	548.70	2		210	NC	-	
10610BX	549.05	3		150	1	549.10	14
10610BY	550.10	3		180	1	-	
10620D	544.90	3		210	1	545.15	30
10630A	520.30	3		180	1	-	
10640CY	509.75	3		90	1	-	
10640CZ	510.00	3		120	1	-	
10640D	518.05	3		120	1	-	
10650AX	491.50	3		240	1	491.55	170
10650A	494.90	3		90	1	-	
10650CX	499.90	3		210	1	-	
10650CY	500.45	3		150	1	-	
10650CZ	502.10	3		90	1	-	
10660DX	480.40	3		180	1	-	
10660DY	482.60	4		240	9	482.75	60
10670B	469.50	3		150	1	-	
10680CZ	452.00	3		210	1	-	
10690A	439.10	3		150	1	-	
10700B	423.65	3		150	1	423.75	260
10700C	424.24	4		180	4	-	
10700D	424.43	4		150	4	-	

[illegible]NAL ANOMALY	FID	CHS	CH1.AMP	CH2.AMP	SIEMENS	MAG	VALUE
10710A	408.20	3		120	1	408.20	10
10720E	394.60	3		120	1	-	
10740D	363.80	3		180	1	-	
10760F	332.90	4		300	1	-	
10780F	302.25	4		600	20	-	
10780G	302.35	4		660	6	302.25	56
10790A	259.85	4		420	1	259.75	30
10800E	245.00	3		240	1	-	
10800F	246.15	3		240	1	-	
10800G	246.30	4		270	1	-	

File

Ontario

Ministry of Natural Resources

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(s) Airborne Geophysical (Electromagnetic & Magnetic)

Township or Area Marathon and Bowyer

Claim Holder(s) Noranda Exploration Company Limited
Suite 400, 55 Yonge Street Toronto, Ont.

Survey Company Questor Survey Ltd.

Author of Report L.A. Waddell

Address of Author P.O. Box 1205

Covering Dates of Survey Oct 31-Nov 3, 1981
(linecutting to office)

Total Miles of Line Cut

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

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

Magnetometer 10 Electromagnetic 10 Radiometric
(enter days per claim)

DATE: August 25/82 SIGNATURE: [signature]
Author of Report ~~or Agent~~

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	625026
	625027
	625028
	625029
	625030
	625031
	625032
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	625041
	625042
	625043
	625044
	625045
	625046

If space insufficient, attach list

TOTAL CLAIMS 152

OFFICE USE ONLY

Res. Geol. Qualifications

Previous Surveys

File No.	Type	Date	Claim Holder

837 (5/79)

SCHEDULE "A"

L-625056
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SCHEDULE "B"

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SELF POTENTIAL

Instrument ______ Range ______

Survey Method ______

______

Corrections made ______

______

RADIOMETRIC

Instrument ______

Values measured ______

Energy windows (levels) ______

Height of instrument ______ Background Count ______

Size of detector ______

Overburden ______

(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) Magnetic and electromagnetic

Instrument(s) AEM-Mark VI INPUT and Sonotek P.M.H. 5010 Proton Magnetometer

(specify for each type of survey)

Accuracy Mag - 1 gamma sensitivity, EM - 1 ppm on channel 6

(specify for each type of survey)

Aircraft used Shorts Skyvan C-GDRG

Sensor altitude 150'

Navigation and flight path recovery method S-pattern flight path using approximately one mile turns. Navigator logged flight details and monitored instruments.

Aircraft altitude 400' Line Spacing 1320'

Miles flown over total area submitted - 223 Over claims only 38

Ontario Resources

Geochemical and Expenditures)

The Mi

(file L625026) File

Lands Admin

42A16NE0020 2.5034 MARATHON

900

Type of Survey(s)
Airborne Electomagnetic and Magnetic

Claim [illegible]r(s)
Noranda Exploration Company, Limited (No Personal Liability)

Address
Suite 400, 55 Yonge St., Toronto, Ontario, M5E 1J4

Survey Company
Questor Surveys Limited

Date of Survey (from & to): 31 Day | 10 Mo. | 81 Yr. | 3 Day | 11 Mo. | 81 Yr.

Total Miles of line Cut

Name and Address of Author (of Geo-Technical report)
Mr. L.A. Waddell, P.O. Box 1205, Timmins, Ontario

W8208-266

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	10
	Magnetometer	10
	Radiometric	

RECEIVED SEP 15 1982 MINING LANDS SECTION

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

LARDER LAKE MINING DIV. RECEIVED AUG 26 1982 AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
L	625026	20	L	625058	20
	625027	20		625059	20
	625028	20		625060	20
	625029	20		625061	20
	625030	20		625062	20
	625031	20		625063	20
	625032	20		625064	20
	625033	20		625065	20
	625034	20		625066	20
	625035	20		625067	20
	625036	20		625068	20
	625037	20		625069	20
	625038	20		625070	20
	625039	20		625071	20
	625040	20		625072	20
	625041	20		625073	20
	625042	20		625074	20
	625043	20		625075	20
	625044	20		625076	20
	625045	20			
	625046	20		641219	20
	625056	20		641220	20
	625057	20		641221	20

ONTARIO GEOLOGICAL SURVEY ASSESSMENT FILES RESEARCH OFFICE 4 1983 RECEIVED

This work recorded in error. A. Kolozar [illegible] cancelled on record sheet - Dec 30/82 [illegible]

Total number of mining claims covered by this report of work. 152

For Office Use Only		
Total Days Cr. Recorded: 3040	Date Recorded: AUG 26 1982	Mining Recorder: [signature]
	Date Approved as Recorded	Branch Director

Date	Recorded Holder or Agent (Signature)
August 25,'82	[signature]

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
L. A. Waddell P.O. Box 1205 Timmins, Ontario

Date Certified	Certified by (Signature)
August 25, 1982	[signature]

Mining Claim Prefix	Mining Claim Number	Days Cr.	Mining Claim Prefix	Mining Claim Number	Days Cr.
L	641222	20	L	641260	20
	641223	20		641261	20
	641224	20		641262	20
	641225	20		641263	20
	641226	20		641264	20
	641227	20		641265	20
	641228	20		641266	20
	641229	20		641267	20
	641230	20		641268	20
	641231	20		641269	20
	641232	20		641270	20
	641233	20		641271	20
	641234	20		641272	20
	641235	20		641273	20
	641236	20		641274	20
	641237	20		641275	20
	641238	20		641276	20
	641239	20		641277	20
	641240	20		641278	20
	641241	20		641279	20
	641242	20		641280	20
	641243	20		641281	20
	641244	20		641282	20
	641245	20		641283	20
	641246	20		641284	20
	641247	20		641285	20
	641248	20		641286	20
	641249	20		641287	20
	641250	20		641288	20
	641251	20		641289	20
	641252	20		641290	20
	641253	20		641291	20
	641254	20		641292	20
	641255	20		641293	20
	641256	20		641294	20
	641257	20		641295	20
	641258	20		641296	20
	641259	20		641297	20

Prefix	Mining Claim Number	Days Cr.
L	641298	20
	641299	20
	641300	20
	641301	20
	641302	20
	641303	20
	641304	20
	641305	20
	641306	20
	641307	20
	641308	20
	641309	20
	641310	20
	641311	20
	641312	20
	641313	20
	641314	20
	641315	20
	641316	20
	641317	20
	641318	20
	641319	20
	641320	20
	641321	20
	641322	20
	641323	20
	641324	20
	641325	20
	641326	20
	641327	20
	641328	20

Noranda Exploration Company, Limited
(no personal liability)

P.O. Box 1205, Timmins, Ont. P4N 7J5

noranda

August 30, 1982

Mr. E.F. Anderson, Director,
Land Management Branch,
Room 6450,
Whitney Block, Queen's Park,
TORONTO, Ontario
M7A 1W3

Dear Mr. Anderson:

Please find enclosed reports and maps in duplicate complying with the requirements necessary for an airborne geophysical certificate for 152 claims (L-625026 to L-625046 inclusive, L-625056 to L-625076 inclusive and L-641219 to L-641328 inclusive), staked in Marathon and Bowyer Townships after the survey was performed.

Yours truly,

L.A. Waddell.

LAW/11
encls.

21
21
10
52

LP

Ministry of Natural Resources
Ontario

Geotechnical Report Approval

File 2.5034

Mining Lands Comments CERTIFICATE

Check out at the Library.

OK.

☑ To: Geophysics Mr Barlow.

Comments

☑ Approved ☐ Wish to see again with corrections | Date Oct 5/82 | Signature [signature]

☐ To: Geology - Expenditures

Comments

☐ Approved ☐ Wish to see again with corrections | Date | Signature

☐ To: Geochemistry

Comments

☐ Approved ☐ Wish to see again with corrections | Date | Signature

☐ To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

1593 (81/10)

Ontario Ministry of Natural Resources

Airborne Geophysical Certificate

The Mining Act

This is to certify that Noranda Exploration Company Limited has met the requirements of Section 87 of The Mining Act, with respect to the following mining claims in the Township (or Area) of Marathon and Bowyer.

Mining Claims (Please list)

L.625026 to 46 inclusive
625056 to 76 inclusive
641219 to 328 inclusive

Date	Signature of Regional Director
[illegible]	[illegible]

2,5034

1982 11 12

2.5034

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed is an Airborne Geophysical Certificate issued under Section 78 of the Mining Act R.S.O. 1980.

Please indicate on your records that the time for performing the first and all subsequent periods of work for the claims listed shall fall due one year later than the times prescribed in subsection 1 of Section 76.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

A. Barr:sc

Encls:

cc:Noranda Exploration Co Limited
~~Timmins, Ontario~~ WINNIPEG MANITOBA
Attn: ~~L.A. Waddell~~.

cc:Resident Geologist
Timmins, Ontario

1982 09 27 2.5034

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. BOx 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We have received reports and maps for an Airborne Geophysical Certificate submitted on Mining Claims L 625026 et al in the Townships of Marathon and Bowyer.

This material will be examined and assessed and a Certificate will be issued.

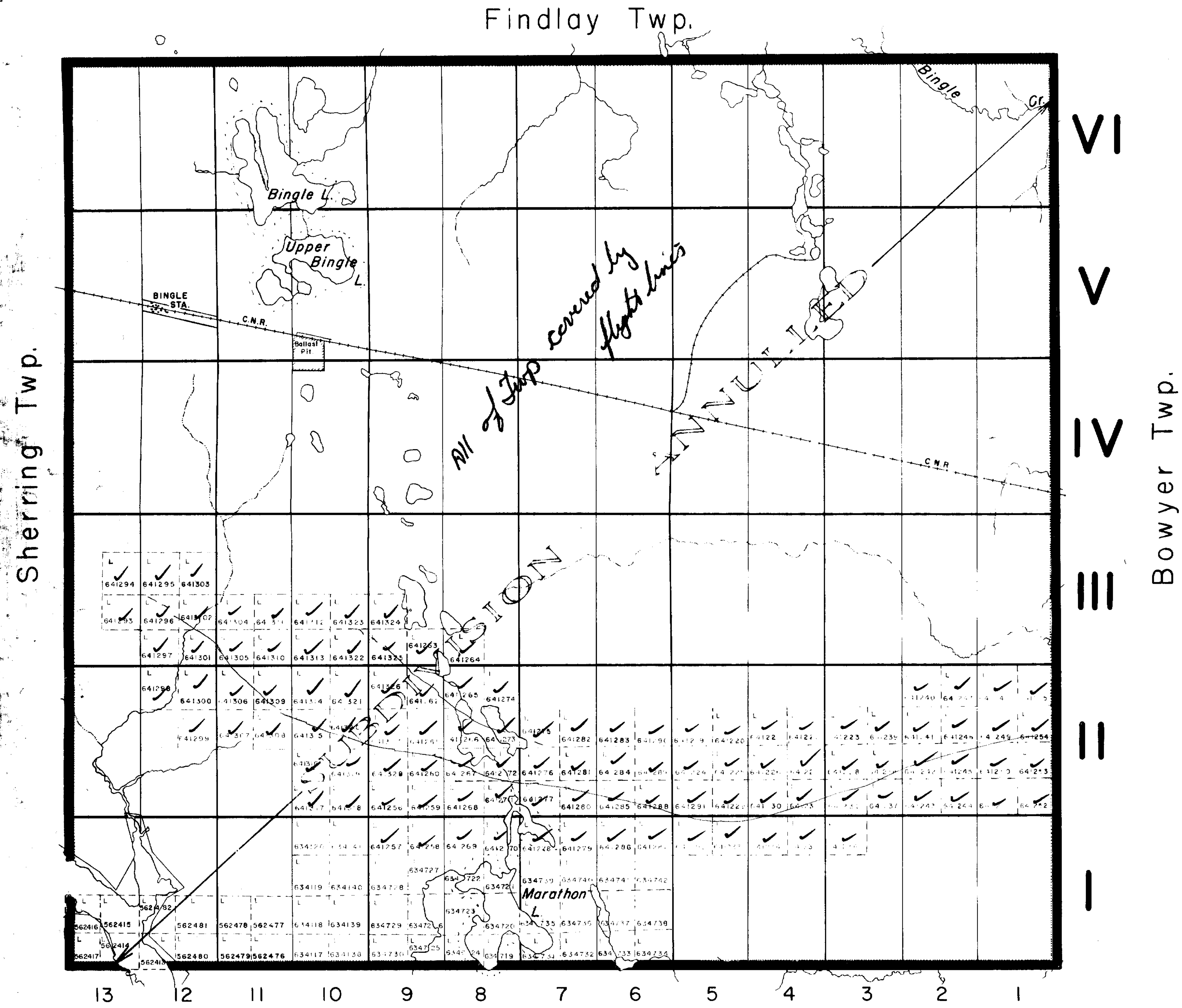
Yours very truly

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

J. Skura:sc

cc: Noranda Exploration Company Limited
Timmins, Ontario
Attn: L.A. Waddell.



THE TOWNSHIP OF MARATHON

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAY	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒

NOTES

Flooded area shown thus below contours 826' & 881' covered by L.O. 8674

400' Surface Rights Reservation around all Lakes and Rivers.

DATE OF ISSUE
OCT 27 1982
Ministry of Natural Resources
TORONTO

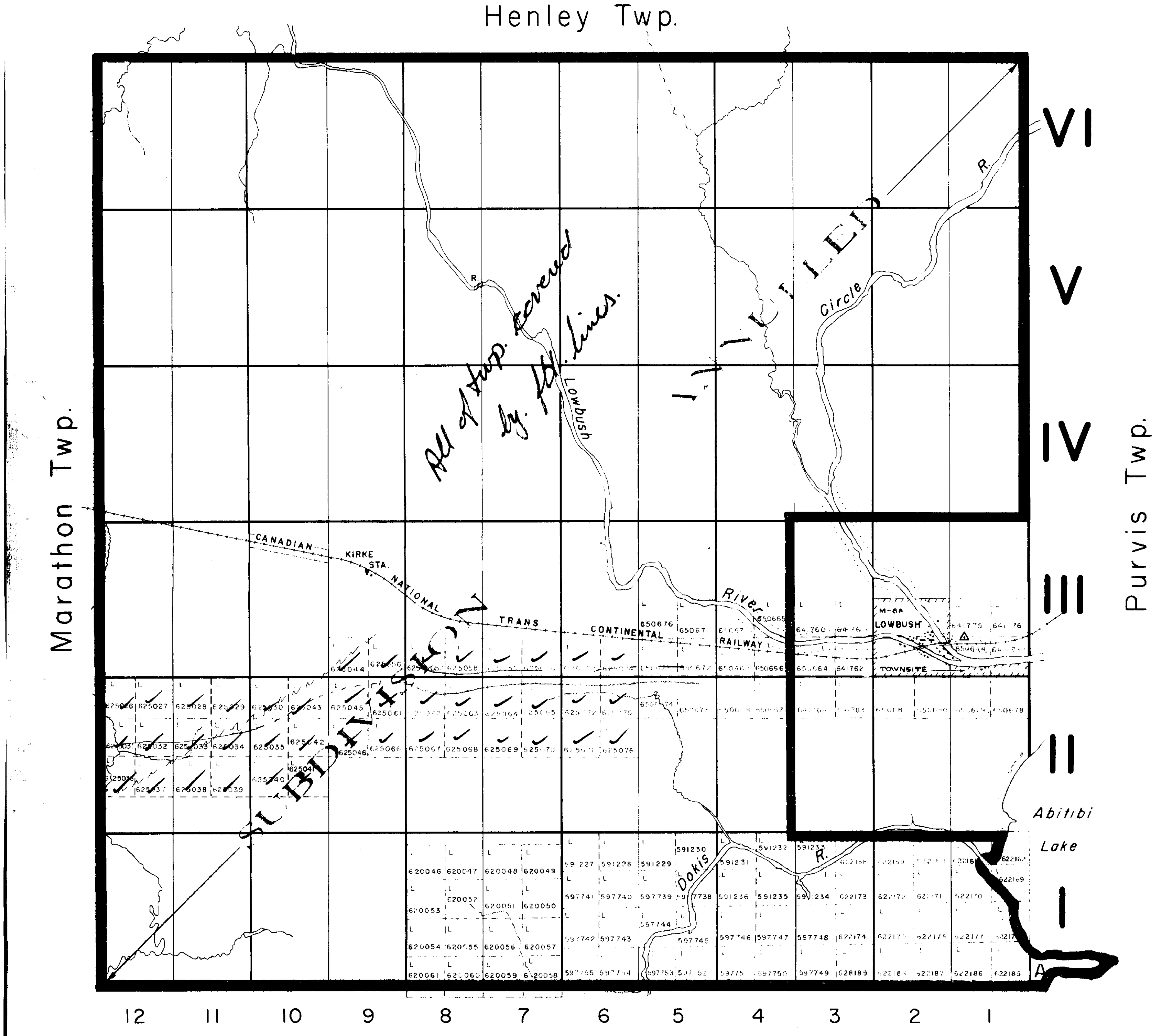
2.5034

PLAN NO.— M.542

MINISTRY OF NATURAL RESOURCES

42A16NE0020 2.5034 MARATHON

200



THE TOWNSHIP OF BOWYER

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
ROADS	
IMPROVED ROADS	
RAILWAYS	
POWER LINES	
KING'S HIGHWAY	
MARSH OR MUSKEG	
MINES	
GEODETIC STATION	

NOTES

400' Surface rights reservation around all lakes and rivers

Lots: 1, 2 and 3, concessions: II and III, not affected by the annulment.

DATE OF ISSUE
OCT 27 1982
Ministry of Natural Resources
TORONTO

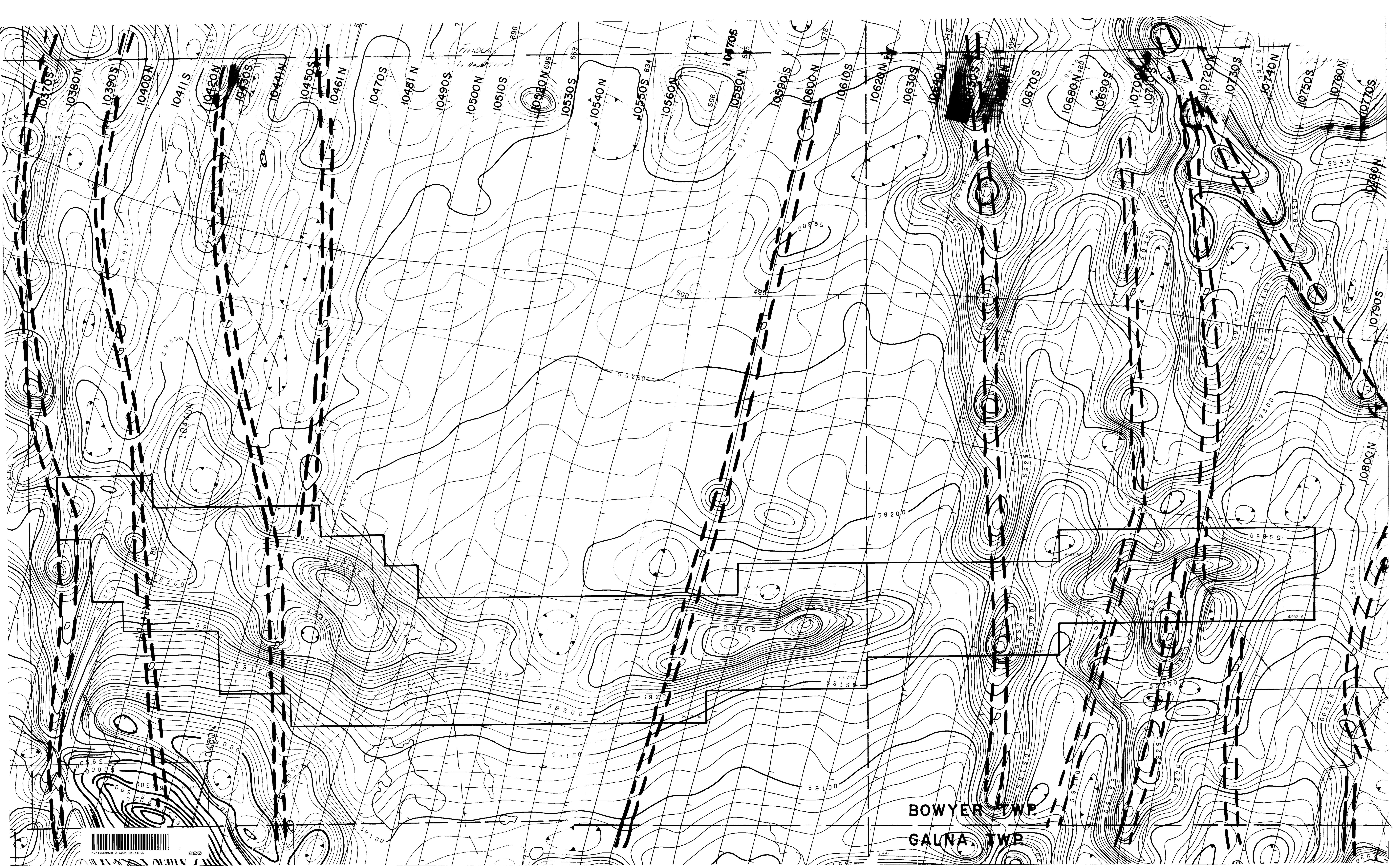
2.5034.

PLAN NO. – M.422

MINISTRY OF NATURAL RESOURCES
SURVEYS AND ... BRANCH

42A16NE0020 2.5034 MARATHON

210



INTERPRETATION

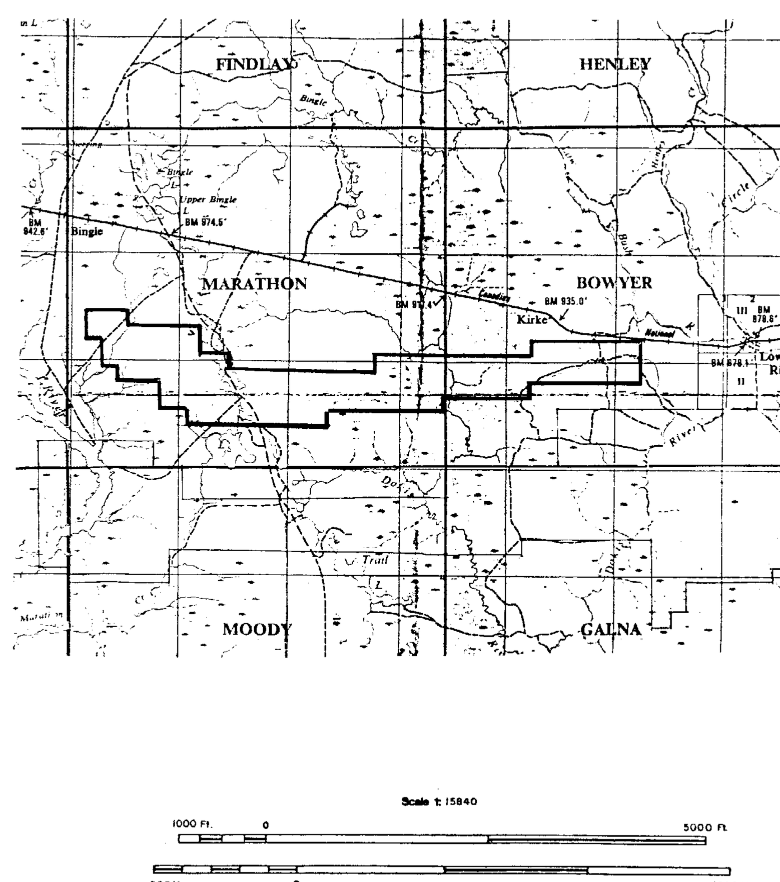
Conductor Axis (bedrock)
Conductor Axis (structural effects, conductive overburden, lake bottom sediments)
Vertical Conductor
Conductor Dip (magnitude and direction known)
Conductor Dip (direction known)
Conductive Zone
Fault
Top of Conductor, in Metres
Diabase
Fault

10 GAMMA CONTOUR LINE
50 GAMMA CONTOUR LINE
500 GAMMA CONTOUR LINE
(1 GAMMA = 1 NANOTESLA IN SI UNITS)
MAGNETIC DEPRESSION

6 CHANNEL ANOMALY
5 CHANNEL ANOMALY
4 CHANNEL ANOMALY
3 CHANNEL ANOMALY
2 CHANNEL ANOMALY
1 CHANNEL ANOMALY
MAGNETIC CORRELATION

Representative INPUT* , Magnetometer and Altimeter Recording

LOCATION PLAN



DESCRIPTIVE NOTES

The aircraft is equipped with the Barringer/Questor Mark VI INPUT* airborne E.M. System and the Sonotek PMH 5010 Proton Precession Magnetometer and Sonotek SDS-1200 Series Data Acquisition System. The INPUT* system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Discrimination of conductors is based on the rate of transient decay, magnetic correlation and the anomaly shape, together with the conductor pattern and topography.

* Registered Trade Mark of Barringer Research Limited

INTERPRETATION REFERENCES

Becker, A., Gauvreau, C., and Collett, L.S.
1972: Scale Model Study of Time Domain Electromagnetic Response of Tabular Conductors; Canadian Mining and Metallurgical Bulletin, Volume 65, No. 725, p. 90-96.

Dyck, A.V., Becker, A., and Collett, L.S.
1974: Surficial Conductivity Mapping with the Airborne INPUT* System; Canadian Mining and Metallurgical Bulletin, Volume 67, No. 744, p. 104-109.

Lazenby, P.G.
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Nelson, Philip, H.
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Palacky, G.J., and West G.F.
1974: Computer Processing of Airborne Electromagnetic Data; Geophysical Prospecting, Volume 22, No. 3, p. 490-509.

Palacky, G.J.
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Palacky, G.J. and Sena, F.O.
1979: Conductor Identification in Tropical Terrains-Case Histories from the Itapicura Greenstone Belt, Bahia, Brazil; Geophysics, Volume 44, No. 12, p. 1941-1962.

Scale 1: 15840

1000 Ft. 0 5000 Ft.

500 M 0 1500 M

TOTAL INTENSITY MAGNETIC SURVEY

NORANDA EXPLORATION COMPANY, LIMITED
(no personal liability)

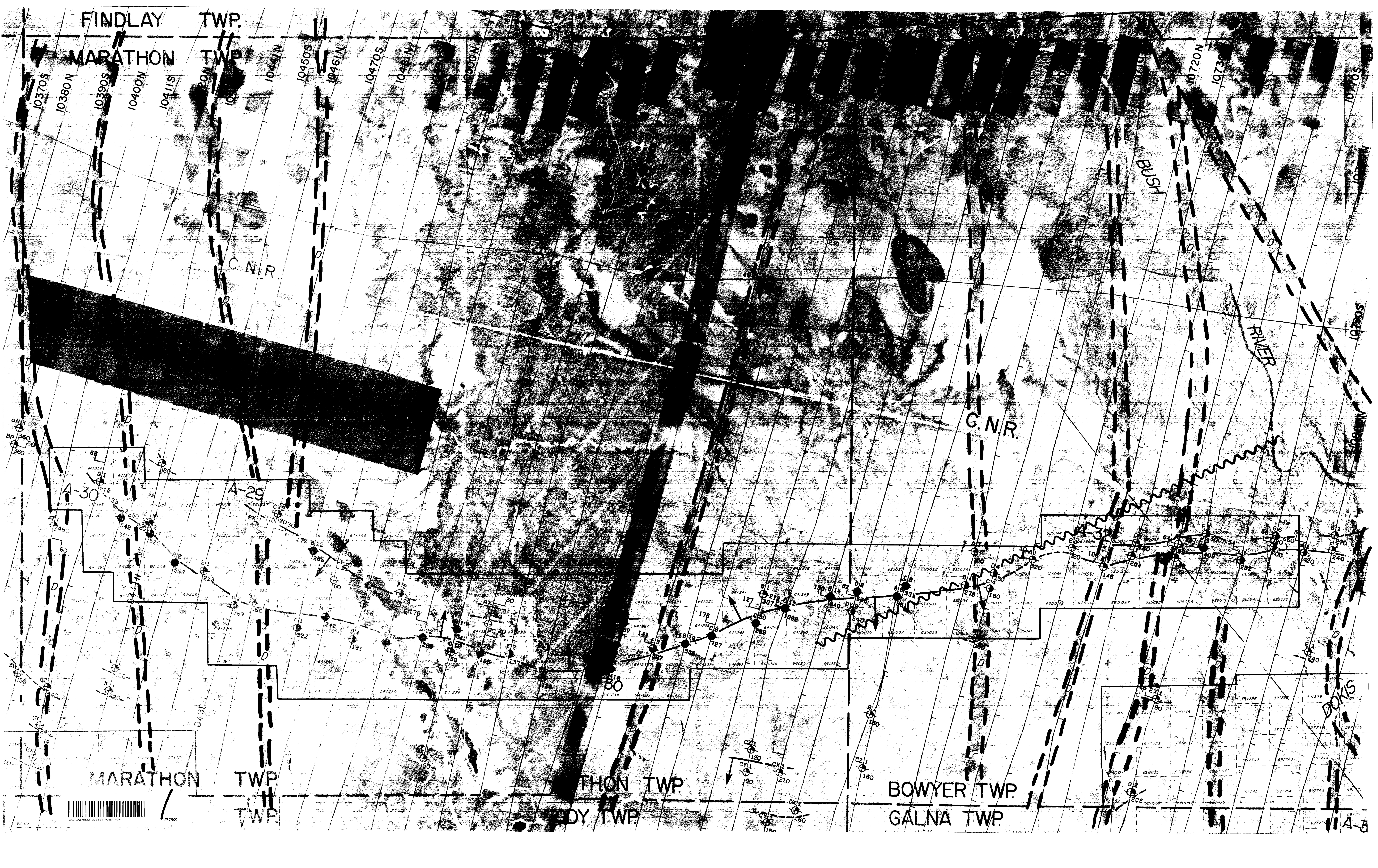
ABITIBI WEST

Province of ONTARIO

FILE NO.	SHEET NO.	DATE	DRAWN BY
23069A	4 OF 1	OCT./NOV. '81	Dataplotting Services Inc

Questor Surveys Limited
Mississauga, Ontario Canada

2.5034
Suppl.



INTERPRETATION

Conductor Axis (bedrock)

Conductor Axis (structural effects, conductive overburden, lake bottom sediments)

Vertical Conductor

Conductor Dip (magnitude and direction known)

Conductor Dip (direction known)

Conductive Zone

Fault

Top of Conductor, in Metres

Diabase

Fault

10° Magnetic

10 GAMMA CONTOUR LINE

50 GAMMA CONTOUR LINE

500 GAMMA CONTOUR LINE

(1 GAMMA = 1 NANOTESLA IN SI UNITS)

MAGNETIC DEPRESSION

6 CHANNEL ANOMALY

5 CHANNEL ANOMALY

4 CHANNEL ANOMALY

3 CHANNEL ANOMALY

2 CHANNEL ANOMALY

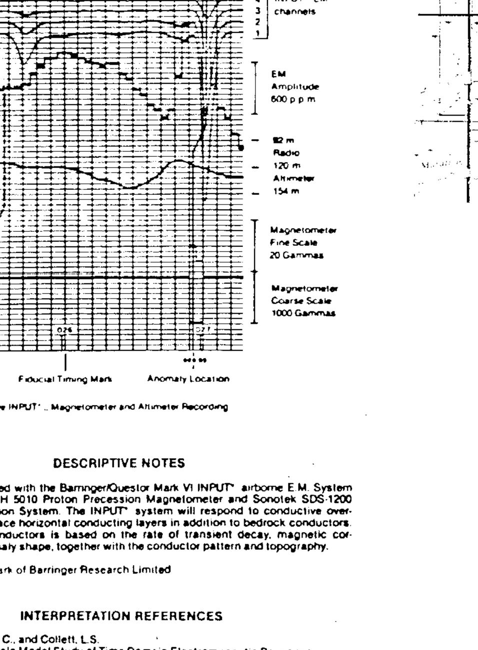
1 CHANNEL ANOMALY

MAGNETIC CORRELATION

Anomaly Letter

Apparent Conductivity Width (Siemens)

Ch. 2 Amplitude P.P.M.



Representative INPUT, Magnetometer and Altimeter Recording

DESCRIPTIVE NOTES

The aircraft is equipped with the Barringer/Questor Mark VI INPUT* airborne E.M. System and the Sonotek PMH 5010 Proton Precession Magnetometer and Sonotek SDS-1200 Series Data Acquisition System. The INPUT* system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Discrimination of conductors is based on the rate of transient decay, magnetic correlation and the anomaly shape, together with the conductor pattern and topography.

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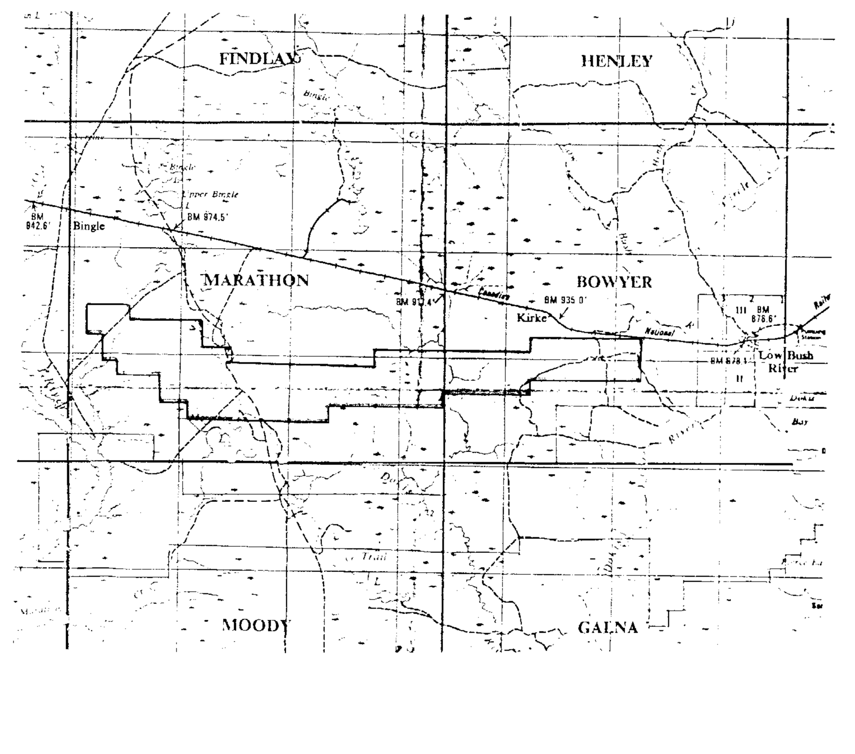
LOCATION PLAN



Scale 1: 15840

1000 Ft. 0 5000 Ft.

500 M 0 1500 M

AIRBORNE MK VI INPUT SURVEY

NORANDA EXPLORATION COMPANY, LIMITED
(no personal liability)

ABITIBI WEST

Province of ONTARIO

FILE NO.	SHEET NO.	DATE	DRAWN BY
23069A	1 OF 1	OCT./NOV. '81	Dataplotting Services Inc

Questor Surveys Limited
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