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REPORT ON

GROUND MAGNETOMETER AND ALTIMETER SURVEYS

SAULT STE. MARIE MINING DIVISION

BATCHAWANA, ONTARIO

for

NEW SENATOR ROUYN LIMITED

by

HUNTING SURVEY CORPORATION LIMITED

TORONTO, ONTARIO

NOVEMBER, 1963

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INTRODUCTION

A combined ground magnetometer and altimeter survey was carried out over a group of claims held by New Senator Rouyn Limited. The survey was done by Hunting Survey Corporation Limited between July 24th and August 26th, 1963.

Magnetic readings were taken with a Sharpe MF1 fluxgate magnetometer, measuring variations in the vertical component of the magnetic field to an accuracy of ±5 gamma. Corrections for diurnal variation were made by taking base station readings every two hours or less.

Variations in elevation were measured with a Wallace and Tiernan FA 112 altimeter, with a sensitivity of 10 feet per scale division. Corrections for variation in atmospheric pressure were made in the same manner as for magnetic readings. A barograph was used to check the linearity of pressure variations between base station readings.

The survey lines were cut and chained by Paul Martin, under separate contract. The Base Line ran east-west, with north and south picket lines at 400 foot intervals. Tie-lines joined the ends of most of the picket lines. Base line, picket lines and tie lines totalled 60.1 line miles. Readings were taken at 100 foot intervals along all of these lines.

The results are presented as separate contoured maps at a scale of 1 inch to 400 feet. The background level for magnetic results is taken as that used by Wahl (1962) for a survey of an adjoining area to the north. The isomagnetic contour interval is 100 gamma. The topographic contour interval is 10 feet, with a base level approximately that of the Hunting (1962) formline map.

PRESENTATION OF DATA

The magnetometer data are presented in the form of readings and contours on a picket line map at scale 1 inch to 400 feet. The contour interval is 100 gamma except in areas of steep relief where it changes locally to 500 or 1000 gamma.

The altimeter data are presented on identical base maps. The contour interval is 10 feet.

The interpretation is on the same base as the above maps.

Each of the above maps has been drafted or reproduced on transparent "cronaflex" material for use either as overlays or for reproductions.

A compilation of the New Senator Rouyn Limited and Tribag Mining Company Limited ground magnetometer surveys in the Tribag area has been made at scale 1 inch to 800 feet. A composite interpretation overlay has also been prepared at this scale. These maps are in manuscript form only and are available for inspection by either of the principals with the consent of the other.

GENERAL GEOLOGY

The general geology of the Batchawana area is described in the report "Batchawana Area, District of Algoma", by E. S. Moore (1926). In this report the following Precambrian formations are listed:

Keweenawan: conglomerate, sandstone, shale, marl, basalt and felsite. Dykes and bosses of diabase and quartz porphyry.

Algoman: granite and granite gneiss.

Mamainsean: diabase, grading into gabbro and diorite. A few lava flows.

Batchawana Series: banded iron formation, arkose, greywacke, banded slate, acid and basic lavas, and schist equivalents.

All of the above formations appear to be represented on or near the property of New Senator Rouyn Limited.

The discovery of copper mineralization in the adjacent property of Tribag Mining Company Limited has led to a re-examination of the general geology of the area. A geological photo interpretation of much of the surrounding area has been made by Hunting Survey Corporation Limited (1963) and has been available to assist in this interpretation.

Detailed geological mapping by S. V. Burr (1962) on the Tribag property has also been made available to the writer.

These additional sources of geological information have added little new information to the regional geology but have described much more accurately the local geology in the vicinity of the Tribag drilling areas and have assisted greatly in the interpretation of the magnetic data.

Of particular economic importance are three breccia zones, each mineralized with pyrite and chalcopyrite. The zones are not restricted to one particular rock type. The main breccia zone occurs in granite. The west zone occurs in basic volcanics and/or intrusives. The east zone appears to fall on the contact of a basic intrusive with acid volcanics and/or sediments. The breccia zones are not distinguishable by air photo interpretation and they have no definite topographic correlation.

The geological photo interpretation and detailed mapping have outlined an abundance of diabase dykes striking in a generally northwest direction. The dykes are exposed in all types of country rock but seem to be less well developed in the acid volcanic/sedimentary complex. No dykes are shown cutting the breccia zones.

Faults appear to belong to two families: an east to northeast trending family of considerable strike length and a north-south family of usually shorter strike length. Both sets of faults cause offsetting of the Algoman and earlier rocks. It is not so certain, however, that the diabase dykes are always offset by faulting. Where the two families of faults intersect, the north-south family appear to be offset by the

northeast trending family. This would seem to indicate that the northeast faulting is younger.

The topography of the area is very rugged, with a total relief of about 1300 feet. Locally, in the New Senator Rouyn area, the relief exceeds 1000 feet.

A further source of regional geological information has been available in the form of an aeromagnetic survey at the scale of 1 inch to 2640 feet. The main feature of this map is the strong magnetic anomaly over the iron formation to the south and east of Pancake Lake. This anomaly is flanked immediately to the north by sharp magnetic lows of a shape and intensity consistent with their being the negative portions of the main positive magnetic anomaly, Further east, however, in the vicinity of the Tribag and New Senator Rouyn properties some broader magnetic lows exist which are more difficult to explain. It has been suggested that these lows may be associated with the breccia zones previously mentioned. A closer study of this possibility, however, finds the breccia zones located not on the magnetic lows but actually on the flanks of magnetic highs. In particular, the east breccia zone occurs on the south flank of a 250 gamma magnetic high striking in a north-south direction,

The magnetic contours appear to have little relation to topography. A formline map by Hunting Survey Corporation Limited (1963) at scale

1 inch to 1320 feet shows the Tribag and New Senator Rouyn properties lying on an elevated plateau bounded on the east by the Batchawana River and on the north by a small river flowing into the Batchawana from the west. This generally elevated area contains several magnetic highs and several magnetic lows which correlate in neither position nor trend with the magnetic contours.

INTERPRETATION

The magnetic data on the New Senator Rouyn property are characterized by a generally low magnetic relief with an abundance of sharp, intense, localized magnetic anomalies. These anomalies are for the most part 50 feet or less in width and have intensities varying from a few hundred to several thousand gamma. The strike of the anomalies is difficult to determine as their complexity makes it impossible to join them up with certainty from line to line. Because of the association of many of these anomalies with mapped diabase dykes, and because their shape and calculated susceptibility are consistent with dykes of this type, interpretation has been guided with this identification in mind.

The contouring of the magnetic data has been done in such a way as to remove any personal bias with regard to strike. This contrasts with the contouring done on the Tribag property to the north, where every effort has been made to produce anomalies striking in a north-south direction. Such a method of contouring, while it may produce a map which follows the geology more exactly, allows the interpreter no flexibility of choice and sometimes introduces an entirely false picture.

For the most part the anomalies on the New Senator Rouyn property conform in strike with the interpreted magnetic bodies. Exceptions include the group of anomalies on Lines 100 W and 104 W just north of Baseline 0.

Besides the anomalies interpreted as diabase dykes, there are a great many, particularly in the southwest corner, that are more difficult to connect up in a northwest to north-south direction. It has been assumed here that anomalies of east-west to northeast strike represent banding in the country rock. This interpretation has been guided by the geological photo interpretation of the area. In nearly all cases the magnetic trends shown as linears on the interpretation map conform in strike with bedding indicated by the photo interpretation. The writer recognizes that a good many of these trends could conceivably be connected differently and may in fact represent diabase dykes. However, on the basis of the existing data on lines 400 feet apart, a unique interpretation is not possible. The east-west and northeast trending magnetic linears have much the same characteristics as those attributed to diabase dykes. If anything, their intensities tend to be slightly lower than those of the dykes. Their width may be a shade greater. The linears are interpreted as magnetite-rich bands in generally east to northeast trending basic volcanic rocks. These rocks are shown on the Tribag property to the north as containing basic intrusive material. In fact, on that property a distinction is made between intrusives and volcanic rock. It is possible that the magnetite-rich bands interpreted on the New Senator Rouyn property are, in fact, narrow intrusive bodies. If so, their composition would appear to be andesitic or gabbroic, containing slightly less magnetite than the diabase dykes.

The remainder of the country rock, as evidenced by the low magnetic relief, appears to be of an intermediate composition, probably dacitic or rhyolitic.

The abundance of diabase dykes and other magnetic trends makes it possible to interpret with some degree of confidence a number of fractures or faults. Unfortunately, the rather wide line spacing and, in some cases the small intersection angle with the dykes, make it difficult to determine the outlines of the magnetic bodies. Normally, faulting is interpreted by means of terminations, deflections, discontinuities etc. in magnetic trends. With a closer line spacing, even 200 feet, much better information would have been derived. However, a brief glance at the southwest corner of the area is sufficient to illustrate the ambiguity in connecting the anomalies, hence the degree of guesswork involved in interpreting the faults.

In general, the interpreted faults conform with the regional pattern and, in many cases, coincide exactly with faults shown on the photo interpretation and/or the surface mapping. The remainder have been put in by interpretation and may be in error both in location and strike. The writer is of the opinion that most of them are, to some degree, justified.

Only one change in general background intensity is observed in the New Senator Rouyn area. This occurs north of the strong east-west fault which occurs between 16+00 N and 20+00 N at the western end

of the area. Here the background intensity falls from a general level of 1600 to 2000 gamma to a level of 1400 to 1700 gamma. This drop is believed to correspond to a change in the country rock from volcanics to granite.

In the southwest corner of the property, there is some suggestion that there is a further change in country rock. Here this is not shown by a change in base level but by a general flattening of the magnetic relief and a disappearance of the northeast trending linears. Because of a suggestion shown on the photo interpretation that there may be granite in this region, this identification has been tentatively assigned. However, it is possible that the change may be related to an increase in the acidity of the volcanic rocks and/or the presence of sediments.

On the interpretation map all of the main topographic linears and scarps have been shown. The purpose of this is twofold: firstly, many of the topographic highs correspond with dykes or dyke swarms and can be used to help connect the magnetic anomalies between lines. Secondly, it is easy to compare the magnetic and topographic features and therefore judge the effect that one has on the other.

As might be expected, some correlation exists between magnetic and topographic highs. In both cases the presence of basic dykes or other intrusives is the usual explanation. However, the writer believes that the magnetic anomalies are for the most part caused by the presence of the intrusives rather than by any topographic effect that may be

present. No doubt the anomalies are distorted and sometimes amplified by the sharp changes in topography. However, this effect is much smaller than the effect of the lithologic change.

Where dykes or other basic bodies are absent, the topography appears to have no effect on the magnetics. Nearly all of the scarps occur in relatively non-magnetic rocks and produce as a consequence little or no magnetic relief. It is significant that the operator who carried out the field work had just completed a thesis on the magnetic effect of topography. He was unable to find a single instance in this area where the magnetic anomaly could be attributed with certainty to a topographic feature.

The abundance of dykes in this area makes it very difficult to interpret changes in lithology of the country rocks. Such changes, where observed, have been based on the character as imparted by magnetic linears, not believed to be related to dykes, and by changes in magnetic base level. A third criterion has been considered. Some parts of the area appear to be more free of diabase dykes than others. In the three breccia zones it appears (despite the contouring) that there may be a total absence of dykes. On this basis it would seem reasonable that the breccia zones would appear as magnetic lows. Unfortunately, the present magnetometer survey excludes the three breccia zones. The previous one to the north, however, tends to support this conclusion. A search for similar regions in the New Senator Rouyn property has not

provided any real encouragement. This is not to say that there are no breccia zones on this property. It is simply that to base such an interpretation on the absence of diabase dykes, particularly where the identification of the dykes themselves is founded on such slender criteria, would be quite misleading. The writer feels that the geological staff of New Senator Rouyn Limited would be better able to make such an interpretation than the writer, particularly since geological surface mapping of the property will become available in the very near future.

SUMMARY AND CONCLUSIONS

The combined ground magnetometer and altimeter survey of the New Senator Rouyn Limited property has resulted in the following interpretation:

1. A large number of northwest trending diabase dykes have been interpreted, though their outline and continuity are in some cases open to doubt. Other dykes may be present but have been otherwise interpreted as a result of the complex magnetic pattern and the relatively wide line spacing.

2. A set of east to northeast trending magnetic linears are in agreement with bedding strikes interpreted from air photos. They are believed to represent magnetite-rich bands in volcanic rocks and/or narrow basic intrusives.

3. Two types of country rock have been identified. The extreme northwest region is occupied by granite. The remainder of the property appears to be underlain by a complex series of east to northeast trending volcanics, varying from acid to basic and possibly intruded conformably by narrow basic bodies. The composition of the volcanics for the large part appears to be dacitic to rhyolitic. The extreme southeast corner of the property may be underlain by granite or possibly by acid volcanics and/or sediments.

4. Two sets of faults have been interpreted, one with a generally east to northeast strike and the other roughly north-south. Some of these agree well with faults mapped on the ground and/or interpreted from air photos. Others are put in on the basis of disruptions, deflections and discontinuities in magnetic trends. Owing to the complex magnetic pattern and the relatively wide line spacing the interpreted faults do not have a high degree of reliability.

5. The intense magnetic pattern in the vicinity of the diabase dykes tends to obscure the picture of the country rock. For this reason it is difficult to interpret minor changes in lithology. It has not been possible to recognize with any degree of certainty the presence of breccia zones such as those on the adjacent Tribag property. However, if these exist they may well be located in areas free or relatively free of diabase dykes and possibly where the magnetic relief is low and complex.

6. Surface topography is believed to have very little effect on the magnetic relief of the area. Changes in magnetic intensity are related almost entirely to intra-basement lithologic variations.

It is concluded that the magnetometer survey has been of some value in assisting the geological interpretation of the area but that, owing to a number of complexities, it has been less definitive than is generally the case. A closer line spacing would undoubtedly result in a better structural interpretation. The more precise definition of the dykes would also aid in lithological interpretation which could assist in localizing areas for detailed geological examination and possibly drilling.

The writer considers that surface geological mapping may provide information that used in conjunction with the magnetometer data will result in a much better interpretation of the area. If such is the case and certain regions appear more favourable than others, it would seem logical to engage in electrical work, preferably induced polarization, to outline areas of sulphide mineralization.

HUNTING SURVEY CORPORATION LIMITED,

Norman Paterson

Norman R. Paterson,
Chief Geophysicist.

Toronto, Ontario,
November, 1963.

REFERENCES

1. Batchawana Area; E. S. Moore; Ont. Dept. of Mines Report, Vol. XXXV, Pt. 1, 1926.

2. Geological Photo Interpretation, Tribag Area; Hunting Survey Corporation Limited, 1963; Scale 1 inch to 1320 feet.

3. Geological Map, Tribag Mining Company Limited, Sault Ste. Marie Mining Division, Batchawana, Ontario; S. V. Burr, September, 1962; Scale 1 inch to 200 feet.

4. Aeromagnetic Survey, Batchawana Area; Scale 1 inch to 2640 feet; Origin and date unknown.

5. Formline Map, Batchawana River; Hunting Survey Corporation Limited, June, 1963; Scale 1 inch to 1320 feet.

6. Magnetometer Survey, Tribag Mining Company Limited, Sault Ste. Marie Mining Division, Batchawana, Ontario; W. G. Wahl Limited, September, 1962; Scale 1 inch to 200 feet.

DESCRIPTION OF ATTACHMENTS

1. Ground Magnetometer Survey, New Senator Rouyn Limited, Batchawana River Area, Ontario; Hunting Survey Corporation Limited, September, 1963; Scale 1 inch to 400 feet.

2. Ground Altimeter Survey, New Senator Rouyn Limited, Batchawana River Area, Ontario; Hunting Survey Corporation Limited, September, 1963; Scale 1 inch to 400 feet.

3. Interpretation of Ground Magnetometer Survey, New Senator Rouyn Limited, Batchawana River Area, Ontario; Hunting Survey Corporation Limited, September, 1963; Scale 1 inch to 400 feet.

SURVEY DATA

A baseline was established in an east-west direction through the centre of the property and traverse lines were turned off at right angles to the baseline at 400-foot intervals. A total of 60.1 miles of line were cut and chained.

Magnetometer and altimeter readings were taken at 100-foot intervals along these traverse lines. A total of 60.1 miles of line were surveyed by this method, requiring approximately 3005 station readings.

The survey covered an area of approximately 2720 acres.

The total number of 8-hour man-days required to complete the above mentioned survey are as follows:

	8-Hour Man Days	Attributable to Assessment Work
Magnetometer and altimeter survey	80 x 4	320
Calculations and Interpretation	6 x 4	24
Drafting	22 x 4	88
Office typing and supervision	1 x 4	4
Total	109 x 4	436

PERSONNEL EMPLOYED ON SURVEY

Name	Occupation	Address	Dates
Dr. N. R. Paterson	Geophysicist	1450 O'Connor Dr., Toronto 16, Ont.	Oct. 28 - Nov. 4, incl.
Mr. R. A. Dodds	Geophysicist	1450 O'Connor Dr., Toronto 16, Ont.	July 23 - Aug. 26, incl.
Mr. A. Skeoch	Geophysicist	1450 O'Connor Dr., Toronto 16, Ont.	July 23 - Aug. 1, incl.
Mr. W. Foster	Geophysical Operator	1450 O'Connor Dr., Toronto 16, Ont.	July 23 - Aug. 26, incl.
Miss J. Wilson	Drafting	1450 O'Connor Dr., Toronto 16, Ont.	Sept. 23 - Oct. 7, incl.
Miss H. Ricketts	Drafting	1450 O'Connor Dr., Toronto 16, Ont.	Sept. 23 - Oct. 7, incl.
Mrs. E. Poplestone	Typist	1450 O'Connor Dr., Toronto 16, Ont.	Nov. 14

REPORT ON GEOLOGICAL MAPPING OF PROPERTY OF NEW SENATOR-ROUYN LIMITED, BATCHAWANA AREA, ONTARIO

ODM 63.1271

REPORT ON GEOLOGICAL MAPPING OF PROPERTY OF NEW SENATOR-ROUYN LIMITED, BATCHAWANA AREA, ONTARIO

ODM 63.1271

63.127

REPORT ON GEOLOGICAL MAPPING OF PROPERTY OF NEW SENATOR-ROUYN LIMITED, BATCHAWANA AREA, ONTARIO

PROPERTY, LOCATION AND ACCESSIBILITY

The property consists of 65 claims, averaging about 40 acres each, in a rectangular block, four to five claims wide, with an approximate area of 2,600 acres, as follows:

SSM 63379 - 63396	inclusive	(18)
SSM 63400 - 63416	"	(17)
SSM 63419 - 634124	"	(6)
SSM 63429 - 63432	"	(4)
SSM 64129 - 64141	"	(13)
SSM 64146 - 64149	"	(4)
SSM 67133 - 67134		(2)
SSM 67446		(1)
		65

The claims lie in the south-east part of Township 28, Range XIII and the south-west part of Township 27, Range XIII, District of Algoma, Sault Ste. Marie area. The property of Tribag Mining Co. Limited adjoins the claim group on the north.

Access is obtained by the "River" motor road from Batchawana on Highway 17. This road cuts across the north-east corner of the group. A difficult tractor road from the Tribag Mine area traverses the property some 2½ miles west of the "River" road.

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Batchawana lies some 40 miles north of Sault Ste. Marie via Trans-Canada Highway 17, and the property is approximately 15 miles, by the "River" road, north of Batchawana.

GENERAL GEOLOGY

The claim group lies in hilly country, typical of this area which Moore (1) called "the most rugged part of Ontario". As with the Tribag property (2), the roughest sections are found where the gabbro outcrops, as it appears to be more competent and resistant to erosion than the granite or "greenstone".

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(1) "Batchawana Area" - Ontario Department of Mines Vol. XXXV - Part II - 1926

(2) "Tribag Mining Co. Limited Geological Report" - S. V. Burr - December 15, 1962

The rock types and age relationships as seen by the writer are similar to those mapped on the Tribag property (2). These consist of, from oldest to youngest: Volcanic flows, tuffs and/or sediments, granite, diabase-gabbro, felsite and aplite, breccia.

There are a few notable differences from the geology of the Tribag property. These will be treated under "Geological Mapping". It is sufficient here to state that the bulk of the New Senator-Rouyn ground is underlain by the volcanic-gabbro complex.

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WORK DONE

During 1963, a considerable amount of exploration was carried out on this large property, but much remains to be done before a clear picture of the geology is obtained.

1) Line Cutting:

A surveyed Base Line in an east-west direction was cut across the centre of the property for a total distance of 19,500 feet. Picket lines were then run at 400 feet intervals north and south from the Base Line, and these were in turn tied in at their extremities by east-west picket lines. One of these north-south picket lines, 124W, was run by transit, and extended north across the Tribag property. A total of 54 miles of lines were cut and chained on the New Senator property under contract. Later, as the result of errors found in line locations during the geological mapping, and the need for a few detail lines for the Long Wire E.M. test, about two miles of extra lines were cut and all the tie-lines were re-chained.

The contractor was remiss in verifying the quality and accuracy of his line cutting, and neglected to note the locations of the claim posts with respect to his lines. As a result there has been delay and extra expense for the Company in correcting these errors.

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2) Geological Mapping:

Intermittent mapping was begun by the writer on September 28, and concluded when the snow became too deep on November 27. A total of 8½ 12-hour days was spent by the writer, aided on 5 days by an assistant. 14.8 miles of lines were covered in the map area, but about 2.8 miles of this is on Tribag ground. It should be noted here that about 6 miles of the lines on the "New Senator" maps - magnetic, altimeter and geological, are on the Tribag property.

Mapping was begun in the western most inaccessible part, of the claim group where the property adjoins that of Ajax Minerals who were drilling in the next claim at the time. To date, about half of the area between Lines 116W and 192W has been mapped.

As mentioned under "General Geology", the rock types seen on the New Senator are similar to those on Tribag, but there are a few differences.

1) There is more evidence of granite dyking of the volcanics, particularly around a body of granite which intrudes the volcanics in the western part of the property, south of the main granite mass. In fact, this granite body, some 600-700 feet wide and at least 7,400 feet long, could be considered a large dyke.

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2) Better developed, and larger, pillows are seen in the volcanics, and the volcanic structure indicated on the Tribag property - the north flank of an overturned anticline - is verified.

3) Magnetite blobs and stringers, sometimes accompanied by quartz, are found cutting the volcanics and the gabbro. These can, and do, have strong magnetic effects on the ground magnetometer, and add to the confusion in sorting out the magnetic data.

4) The three Breccia bodies discovered to date during mapping, are highly quartzose. Sparse chalcopyrite was found in two with one rich sample in a narrow fissure vein in the neighbourhood of one of them.

The most westerly breccia is on Line 188W, at or within one hundred feet of, the contact with the main granite mass, and some 25 feet south of the Ajax property. The outcrop is about 25 feet in diameter and is accompanied by felsite-aplite. No other outcrops were found. Below this outcrop is a flat-dipping (35 degrees) north-east fault. If the breccia body has steep to vertical walls, as appears to be the case on the Breton, West and East Breccia on the Tribag property, it would be cut by this fault at a shallow depth. However, because of its limited size, it may have a flat dip to the east or south-east similar to the other two breccia. A small amount of chalcopyrite was found in the breccia.

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Near Line 120W, another highly quartzose breccia in gabbro was discovered again with limited size. Stripping exposed a length of 120 feet and a maximum width of 50 feet with the long axis in a north-south direction. Some aplite or granite is present. Chalcopyrite is a little more apparent in this outcrop and about 100 feet away some high grade material was found in a narrow fissure which expanded into breccia filling about 5 inches wide. A shallow vertical drill hole, N.S.3 was put down on the breccia outcrop. Forty-one feet of the highly quartzose breccia was encountered showing low copper content. Below this, fairly massive volcanics and gabbro are weakly fractured with intermittent, but extensive, fine chalcopyrite fracture fillings. The best copper assay was 0.47% over 2 feet at a depth of 105.feet.

On Line 116W, about 300 feet south-east of the N.S.3 hole, another breccia zone was mapped. This breccia is exposed on a shallow cliff face for a north-south length of about 200 feet. It has an apparent depth of 5-10 feet and dips at a low angle to the east. It is at the same elevation as the N.S.3 breccia, but because of its limited vertical extent is probably a different zone. A fault may occur in the valley between these two breccia, so that their relationship is uncertain. The writer did not find time to break and prospect this outcrop to the same extent as the previous two, and no chalcopyrite was noted. Some felsite was seen at the south end of the exposure, but the wall-rock of the zone is diorite-gabbro.

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In summarizing: the three breccia discovered to date are different from the known zones on Tribag in that they are small in size, and two of them are known to be limited in depth. They are highly quartzose and would appear to be "breccia veins" or fissure fillings. Foreign fragments indicating some intrusive feature have not been found with certainty. Nevertheless, they do indicate the best target areas for detailed psospecting.

3) Diamond Drilling:

Six holes were put down to test structure on the New Senator property during 1963, as follows:

NS-1	45°	721 feet	(about 70' on Tribag ground)
NS-2	90°	842 "	
NS-3	90°	402.5"	
NS-4	45°	882.5"	
NS-5	45°	699 "	
NS-6	45°	740 "	(about 390' on Tribag ground)

Total on New Senator - 3827 feet

N.S.3 has been described above. The other five holes tested a strong topographic east-west feature suspected of being a pre-mineral "break". This theory proved to be correct as copper mineral was found in all the holes. The best assay was 0.86% Cu. over 1.3' in the most westerly hole.

The three last holes tested the break over a strike length of a quarter mile. The break is a strong zone of shattering and breccia at the contact of the main granite mass on the north -- presumably a fault contact. The shatter zone is approximately 175 feet wide and has a vertical dip.

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Holes N.S.1 and 2 do not contain the strong shattering found in the other three holes, but as these holes are not near the contact of the main granite mass, it is understandable that the "break", if intersected, might have a different character. Both holes, however, did end in granite and this is important. N.S.1, an angle hole, presumably entered the wide granite "dyke" mentioned above under "Geological Mapping". The intersection of granite at 761 feet in the vertical hole N.S.2, suggests that the granite "dyke" and the main granite mass join at a relatively shallow depth and that the volcanic rock in the western part, at least, of the Tribag property is merely a roof pendant.

We might assume then that the West Breccia Zone (so close to the New Senator), may overly a breton-type granite breccia at a depth of 1,000 feet or less, and be similar to the S.P.2 zone as tested by the two vertical holes V-57 and V-59.

In considering the New Senator possibilities in this light, the exposed breccia on Line 188W, close to the main granite mass and some 1,400 feet north of the large granite "dyke" which joins the main granite at a shallow depth, could be a direct "lead" to a Breton-type breccia zone. On the other hand, unless further mapping locates other granite "windows", the shallow or flat dipping breccia "veins" on Lines 120W and 116W may be a long way, horizontally and vertically, from any Breton-type zone.

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Figure 1 shows the general geology as known and an idealized cross-section on Line 124W.

Should drilling recommence on New Senator, the west end of the property provides the best target with the information to date.

RECOMMENDATIONS

On the basis of exploration results to date, this property warrants a thorough prospection.

Complete geological mapping is most necessary and should be carried out at the earliest opportunity. This should give an opportunity to study the property as a whole rather than piecemeal, and select the most likely target areas.

However, due to assessment requirements by July and August, 1964 which may not be satisfied by the work to date, I recommend two areas be covered by Resistivity surveying this winter with a view to finding drill hole targets.

1) An area from Line 96W to Line 128W from the north to south boundaries, including the part of Wiley Lake (Lines 96W - 116W) which lies within the New Senator property. This area covers two known breccia zones, an intriguing topographic feature resembling a "collapsed dome" north of Wiley Lake, an aeromagnetic "low", and several distinct topographic linears believed to be "breaks" or faults.

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2) An area from Line 156W to Line 192W from 600 feet south of the Base Line to a maximum of 2,400 feet north of the Base Line, and including the short inter-lines, 166W to 190W. This covers a good length of the large granite "dyke" (see Fig.1), the east-west fault contact which was drilled by N.S.4, N.S.5 and N.S.6, the breccia outcrop on Line 188W, and will double check the long-wire E.M. test.

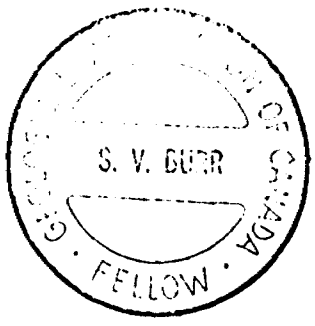
Based on the results of this Resistivity work, diamond drilling can be considered.

Respectfully submitted,

S. V. Burr

May 6, 1964.

S. V. Burr,
Chief Field Geologist.



CERTIFICATE

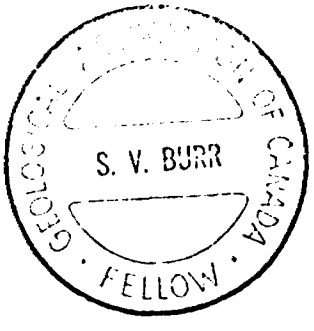
I, Stanley Vernon Burr of the City of London in the Province of Ontario, hereby certify as follows:

1. That I am a Consulting Geologist and that I reside in London.

2. That I am a graduate in Geology of Queen's University, holding the degree of Master of Arts, a Fellow of the Geological Association of Canada, a member of the Society of Economic Geologists, the Canadian Institute of Mining and Metallurgy, the Mineralogical Association of Canada, and of the Professional Engineers of Manitoba, and I have been practising my profession for over twenty years.

3. That I have no interest, either directly or indirectly, in the property covered by this report, nor in New Senator-Rouyn Limited, nor do I expect to receive such interest.

4. That this report is based on actual field work over the period described in the body of this report.



"S. V. Burr"

S. V. Burr, M.A.

Dated at London, Ontario, this
6th day of May, 1964.

REPORT ON SELF POTENTIAL SURVEY

NEW SENATOR - ROUYN LTD

BATCHAWANA AREA, SAULT STE MARIE MINING DIVISION

PROPERTY

The property consists of 65 unpatented mining claims in Twp. 28, Range 13, and Twp. 27, Range 13, adjoining Tribag Mining Company on the south.

The claims are:

Twp. 28: SSM 63379-63396 incl., 63408-63414 incl., 63429-63432 incl., 64129-64141 incl., 64146-64149 incl., 67133, 67134, and 67446. (49)

Twp. 27: SSM 63400-63407 incl., 63415-63416, 63419-63424 incl. (16)

Access to the property is via the Batchawana River road, now called the Tribag Road, from Highway 17 North, some 40 miles north of Sault Ste Marie, Ontario. Near Mile Post 13, the Tribag Road, a good gravel motor road, crosses the east end of the 65-claim group. A bush road, inaccessible at present even with four-wheel drive, crosses the claims about 2½ miles west of the Tribag Road. This road also connects with Tribag Mines, and provides access to the west end of the property.

SURVEY PROCEDURE

An east-west Base Line was driven from the east boundary, with 0+0 starting near the Tribag Road, to the west boundary, a measured distance of 19,400 feet. Lines were cut north and south at 400 foot intervals. These were tied in to each other along the north and south boundaries, giving good geographical control. Chaining established pickets at 100 foot intervals.

Because of the rugged topography, the final map which accompanies this report, is further refined by using a map based on aerial photographs blown up to the same 1"- 400'

S.V.B.

scale, to correct chainage errors which may show up in relationship to topographic points noted during the traverses.

Total line footages:
Base Line: 19,400 feet
Grid Lines: 226,000 feet approximately.
Total over 46 miles.

The survey was conducted using a Sharpe VP 6 and a VP 7 voltmeter. The copper sulphate solutions were jellied, and great care was taken, in correcting for pot difference potentials. Walkie-talkies enabled the instrument man to mark down all topographic details reported by the forward-pot man. Adequate wire was available, generally, for running the lines to the boundaries from control stations on the mid-centre base line, but because of frequent magnetic storms, and the desire to keep as strict control and accuracy as possible, the north and south sections were also traversed east-west, resulting in at least three tie-ins on each north-south line. Some 4900 readings were taken, as shown on the accompanying map, generally at 50 foot intervals on the grid lines. In addition, considerable detailing was carried out in anomalous areas, in order to "peak" up and, if possible, uncover the cause of the anomalies. It is impossible to show this detailing on the 1"-400' scale.

THE SELF POTENTIAL METHOD

The self potential method measures the earth's natural electro-magnetic currents. It is customary to send the positive pot ahead, so that "anomalous" conditions are negative. The acidity of the soil, which fortunately, in most parts of Canada, agrees with the topography, is an important factor in interpretation. So is the depth of overburden to bedrock. Normally, low swampy ground gives a positive potential; high dry ground gives a negative potential. Deep overburden gives a more positive reading.

Usually, after a few hours of surveying, the more positive reading for an area may be established. If this is given an arbitrary value of +50 milivolts, and all the other readings are made relative, the effects of the varying acidity of the soils - whether sand, till, loam, etc., whether wet or dry, - can be contained between +50 and -50 milivolts.

$16

In fact, under certain conditions in non-anomalous areas, the essential features of topography can be ascertained by the readings.

Anomalies, as such, generally show up in relative values more negative than -50 milivolts on the above basis, but it is possible to detect deeper (weaker) anomalies, if topography is noted carefully. For instance, if the forward pot is moving down-hill, readings should become increasingly positive (or, less negative). If, however, the readings become increasingly negative on a down-hill traverse, this is anomalous, even though the "peak" of the condition is a low negative, or even a low positive.

In rare cases, a strange but easily recognizable "anomaly" is found in sand and gravel deposits. Where, normally, the traverse readings will be fairly low and uniform over such an area, there are cases where the readings take a sudden "jump" of 75 to 125 milivolts, negative, and retain this new milvolt "plateau" over a considerable distance. As far as this writer is aware, the cause of this anomalous condition has not been explained. Another "rare" anomaly, as far as experience in Canada is concerned, is caused by concentrations of manganese. This is a positive condition, sometimes up to +1000 milivolts, or more, and can cause considerable consternation when first encountered.

Self potential anomalies, other than the two rare types noted above, are caused by sulphides - pyrrhotite, pyrite, chalcopyrite, essentially, and/or graphite. The theory is that the anomalous higher potential is due to the voltaic effect of oxidizing sulphides or graphite, and, undoubtedly, this does cause the stronger anomalies. However, good conducting sulphide zones, and graphite zones, well below the water-table where oxidation should not take place, produce strong anomalies, also. Where a sulphide deposit is not a good conductor, and where, either because of the high pH of the ground water, or because of depth below the water-table, oxidation is not taking place, no anomalous condition will be found.

Graphite causes a very strong negative anomaly in, probably, 95% of the cases. In fact, where the readings reach, or exceed, -500 milivolts, graphite is definitely present in the zone causing the anomaly. In the neighborhood of several graphitic anomalies, the surrounding area develops a much higher "back-ground" than in areas of several sulphide anomalies. This is apparent on the New Senator

SV.6

property, where the eastern section has a back-ground of 0 to -50 milivolts, while the western 2/5 has a back-ground of -100 to -200.

Some rock types are better conductors than others: bedded volcanics or sediments may be more conductive than homogeneous granite or gabbro; certain beds may be more porous, and thus wetter, than others; other bedded rocks may contain residual or syngenetic pyrite, etc. Thus, the self potential, like the resistivity method, often differentiates between one rock and another, if the contrast in conductivity is sufficient. The north-east trending weak "anomalies" such as "R", which crosses the base line at L 104W, and other narrow trends west of Anomaly "S-S" as far as L 144W, are examples of the additional information which can be obtained from this method.

SURVEY INTERPRETATION

Approximately 30 anomalous conditions of interest have been located on the 65-claim group. A few in the western section, which have not been examined, must contain some graphite, but there is widespread pyrite and some chalcopyrite in the surrounding rocks, so that the "peaks" of these anomalies may overlie sulphide concentrations, as well.

Before commenting on the individual anomalies, a few words on the geological structures indicated by the survey. According to the Ontario Department of Mines Preliminary Maps No. 361 and 359, the volcanic country rock underlying the claim group has a general ENE strike. In the eastern section of the property, Anomalies "A" and "B" appear to be following this strike, but from L 36W to 34W, a series of north-south structures are anomalous. Preliminary examinations suggest that these are acid dykes with pyritized contacts. Certainly, they are structures cutting across the strike of the country rock.

Between Line 88W and 104W, there is a striking "Horse-shoe" anomaly, "P". Trenching on a "peak" west of L 92W, shows this to be two or more narrow mineralized quartz-carbonate veins. The folded condition of this vein zone may indicate a fold in the volcanics, or a curving fracture around the plug of gabbro which it surrounds.

S.V.B

A suspected fault through the north edge of Wiley Lake is well expressed by the milivolt contours on the map. It trends NE to the north boundary at L 84W, and WNW to the base line at L 144W, separating a series of NE striking volcanics and at least one pyrrhotitized iron formation (Anomaly S-S), on the north, from an anomaly-strewn, confused area on the south and west. West of L 144W, the fault may parallel the base line, but since there is a granite contact, as traced by the writer in late 1963 (indicated on this map), the E-W contour trend may be due to this geological feature.

In the north-west section of the property, the E-W strike trend is again apparent. South of the base line and fault, from Wiley Lake to the west boundary, the dominant trends are slightly east of north. Where seen the volcanics have an east-west strike, but the bulk of the outcrop is diabase-gabbro. The rugged topography (hills up to 2060' above sea-level), has an east of north trend, and it is obvious that it conform to the basic intrusion(s). The anomalous conditions, then, are associated with the diabase-gabbro.

Finally, the major creeks on the property are indicated by the lower, more positive potentials, generally associated with water, or wet swampy ground.

During the field season, many of the anomalies, at least as far as L 120W, were detailed, and where "peaking" indicated shallow overburden, stripping, and, in some cases, rock trenching, was undertaken.

Below, in Table form, the various anomalies are described:

ANOMALY	DEPTH	OBSERVATIONS & E.P. INTERPRETATION
A	Deep	Interp.- Sulphides up to 300' wide.
B	?	Not detailed or examined.
C	Deep	Interp.- Sulphides up to 100' wide
D	?	Not detailed or examined.
E,F	Peak at 6"	North-south dykes - acid - pyrite
G	Deep	Interp.- Sulphides-circular structure
H	"	" " " "
J	"	Extension of F structure.
K	Peak at 6'	Gossan - chlorite-sericite shearing.
L	Deep	Interp.- north-south dyke-minor sulphide.
M	Deep	Interp.- similar to L - much weaker.

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ANOMALY	DEPTH	OBSERVATIONS & S.P. INTERPRETATION
N	?	Not examined - similar to O?
O	Peak at 4½'	Fractured acid volcanics- pyrite & magnetite. Circular - possible breccia?
P	Peak at 3'	Narrow,parallel veins-pyrite,chalcopyrite,galena,sphalerite.
Q	?	Not detailed or examined.
R	?	Interp.-Tuff bed with pyrite?
S-S	Peak at 1'	Heavy lensy pyrrhotite in iron formation, with sparse graphite.
T	outcrop	Diss. pyrite in volcanics.
U	?	Not examined-some graphite expected.
U'	?	Not examined or detailed.
V	?	Not examined-some graphite expected.
W	Shallow	Not detailed-diss. sulphides in surrounding rocks-some graphite expected.
X	Shallow	Not detailed-area of granite dykes and magnetite blobs & stringers-some graphite expected.
Y	?	Not detailed or examined.
Z	?	" " " "

PREVIOUS DRILLING

Fourteen drill holes have tested various structures in the west half of the property prior to this self potential survey. They are shown on the accompanying map.

None of the holes intersected any of the anomalies found in the survey, with the possible exception of NS-7 on Line 116W. This hole cut through a quiet section of the "S-S" anomaly, missing the lensy heavy pyrrhotite found in stripping at the base line and west of L 112W. However, it did cut copper mineralization as did all the other drill holes, so that the possibilities for richer concentrations in some of the anomalous areas appear very promising.

As a matter of record, the least interesting holes, although chalcopyrite was noted in each one, are NS-4, NS-8, and a vertical hole, NS-10, which had to be abandoned at a shallow depth.

SUMMARY

The self potential has located many areas of sulphide mineralization on the property, and considering the widespread Cu-Pb-Zn-Ag mineralization found in early drilling, and surface mapping and prospecting, the chances of finding a major concentration, similar to the ore bodies at Tribag, seem to be very favourable.

Although there are several anomalous areas where surface detailing, and stripping, are still needed, the writer favours anomalies which show irregular or circular shapes, over anomalies which are markedly linear. Experience with the self potential method at Tribag, shows that the northwest, better-mineralized section of the East Breccia, the South Breccia (which was found as a result of the S.P.) and , to a small degree, the Breton Breccia, were circular anomalies. The several narrow linear anomalies have proved to be shear zones with graphite, or uneconomic sulphides.

There are several deep anomalies on the New Senator property, which, either because of their width, or their shape, warrant testing by drilling. The more shallow anomalies in the western section, particularly Anomaly "W", may be indicative of breccia.

RECOMMENDATIONS

The writer recommends approximately 2000 feet of diamond drilling to test Anomalies "A", "C", "H", and "D", during this fall and winter, bearing in mind the field problems of moving the drill to these various, scattered locations.

After break-up, prospecting is recommended, with the aid of S.P. detailing, in the western section, which contains much more outcrop exposure than the country east of Wiley Lake.

Respectfully submitted,

S. V. Burr, M.A.
Consulting Geologist

November 14, 1969.

GEOLOGICAL ASSOCIATION OF CANADA
S. V. BURR
FELLOW

CERTIFICATE OF QUALIFICATION

I, STANLEY VERNON BURR, do hereby certify that:

1. I am a practising consulting geologist with office at 324 St. George Street, London, Ontario.

2. I am a graduate in Geology from Queen's University, with an Honour B.A., granted in 1939, and an M.A., granted in 1940.

3. I am a Fellow of the Geological Association of Canada, and a Professional Engineer of the Province of Manitoba, and have been practising as a geologist and geophysicist for some 30 years.

4. I have no interest, direct or indirect, in the property covered by this report, or in the securities of New Senator-Rouyn Ltd.

5. The survey described in this report was carried out under my direction and supervision, and my interpretations are based on knowledge gained in the field from 23 years of examining self potential anomalies.

S. V. Burr
Consulting Geologist

London, Ontario
November 20, 1969

GEOLOGICAL ASSOCIATION OF CANADA
S. V. BURR
FELLOW

SSM-633

NEW SENATOR-ROUYN LIMITED
(NO PERSONAL LIABILITY)

SUITE 2014
44 KING ST. W.
TORONTO 1, ONTARIO

Claims covered by this survey:

SSM 63379	SSM 63395	SSM 63414	SSM 64132
SSM 63380	SSM 63396	SSM 63415	SSM 64133
SSM 63381	SSM 63400	SSM 63416	SSM 64134
SSM 63382	SSM 63401	SSM 63419	SSM 64135
SSM 63383	SSM 63402	SSM 63420	SSM 64136
SSM 63384	SSM 63403	SSM 63421	SSM 64137
SSM 63385	SSM 63404	SSM 63422	SSM 64138
SSM 63386	SSM 63405	SSM 63423	SSM 64139
SSM 63387	SSM 63406	SSM 63424	SSM 64140
SSM 63388	SSM 63407	SSM 63429	SSM 64141
SSM 63389	SSM 63408	SSM 63430	SSM 64146
SSM 63390	SSM 63409	SSM 63431	SSM 64147
SSM 63391	SSM 63410	SSM 63432	SSM 64148
SSM 63392	SSM 63411	SSM 64129	SSM 64149
SSM 63393	SSM 63412	SSM 64130	SSM 67133
SSM 63394	SSM 63413	SSM 64131	SSM 67134
			SSM 67446

Total number of claims covered: 65

Total days assessment submitted:

Geophysical	436
Line Cutting	436
	872

Days per claim = $\frac{872}{65}$ = 13.41

900

THE MINING ACT

DEPARTMENT OF MINES
PROJECTS SECTION

Assessment Work Credits

FILE: 63.1271

DATE: December 18, 1969.

Name New Senator Rouyn Ltd.

Township or Area: Township 27 R. 13 and Township 28 R. 13.

Type of Survey and Number of Assessment Days Credits per Claim	Mining Claims
GEOPHYSICAL [X] Special Provision [ ] Man days [X] Ground [ ] Airborne Magnetometer ..... days Electromagnetic ..... days Self-Potential 40 days	SSM63379 - 89 inclusive 11 63391 - 96 inclusive 6 63400 - 16 inclusive 17 63419 - 24 inclusive 6 63429 - 32 inclusive 4 64129 & 30 2 64132 - 41 inclusive 10 64146 - 49 inclusive 4 67133 & 34 2 67446 1
GEOLOGICAL ..... days [ ] Special Provision [ ] Man days	
RADIOMETRIC ..... days [ ] Ground [ ] Airborne	
GEOCHEMICAL ..... days	
[X] Notice of Intent to be issued (credits have been reduced because of insufficient or partial coverage of claims)	
[X] No assessment credits have been allowed for the following mining claims as they were not sufficiently covered by the survey SSM 63390, 64131	

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FEB 18
RESIDENT GEOLOGIST
SAULT STE. MARIE

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows:

Geophysical – 80; Geological – 40; Geochemical – 40; Radiometric – 20;

Use for one type of survey only

Assessment Work Breakdown

1. Technical

Type of Work	Name & Address	Dates Worked	Hours	Days
Geophysicist	Dr. N.R. Paterson	1450 O'Connor Dr. Toronto 16, Ont. Oct. ~ - Nov. 4	64	8
Geophysicist	Mr. R.A. Dodds	1450 O'Connor Dr. Toronto 16, Ont. July 23 - Aug. 26	280	35
Geophysicist	Mr. A. Skeoch	1450 O'Connor Dr. Toronto 16, Ont. July 23 - Aug. 1	80	10
Geophysical Operator	Mr. W. Foster	1450 O'Connor Dr. Toronto 16, Ont. July 23 - Aug. 26	280	35
		Totals	504	88

Consultants

Name & Address	Dates Worked (specify in field or office)	Hours	Days
	Totals		

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Hours	Days
Drafting	Miss J. Wilson	1450 O'Connor Dr. Toronto 16, Ont. Sept. 23 - Oct. 7	120	15
Drafting	Miss H. Ricketts	1450 O'Connor Dr. Toronto 16, Ont. Sept. 23 - Oct. 7	120	15
Typist	Mrs. E. Poplestone	1450 O'Connor Dr. Toronto 16, Ont. Nov. 14	8	1
		Totals		

2. Line-Cutting

Name	Address	Dates Worked	Hours	Days
		Totals		

Use for one type of survey only

Submit in duplicate

Assessment Work Breakdown

1. Type of Survey: **Ground Magnetometer and Altimeter Survey**
2. Township or Area: **Sault Ste. Marie Mining Division, Batchawana, Ontario**
3. Mining claim numbers: **6 3400 - 16 63419 - 24 63429 - 32 64129 - 41 64146 - 49**
   63379 - 96 67133 - 34 67446
4. Number of miles of line cut: **60.1**
* 5. Type of instrument used: **Sharpe MF 1 Fluxgate Magnetometer**
   Wallace and Tiernan FA 112 Altimeter
* 6. Scale constant or sensitivity: **Sensitivity 20 gammas per scale division**
* 7. Number of stations established: **3005**

8. Summary of days worked (details on reverse side)

Total technical (include consultants, draughting etc.		**826**
Total line-cutting (~~maximum 5 man-days per claim~~)		**369**
Total man-days (technical plus line-cutting)		**1195**
Assessment days credit per claim	(65)	**18.4**

(~~Total man-days multiplied by assessment factor 4 divided by total number of claims traversed~~)

9. Dated **July 31, 1964** Signed: E B Nicholls

RESIDENT GEOLOGIST
SAULT STE. MARIE

* Complete only if applicable

Complete list of names, addresses and dates on reverse side

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OCT 14 1969
RESIDENT GEOLOGIST
SAULT STE. MARIE

#251

ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

To the Recorder of Sault Ste. Marie Mining Division

I, New Senator-Rouyn Ltd (name of Recorded Holder) A-36471 (Miner's Licence)

2014 - 44 King Street W. Toronto, Ontario (Post Office Address)

do hereby report the performance of 2600 days of Geophysical (type of work)

not before reported to be applied on the following contiguous claims

Claim No.	Days	Claim No.	Days	Claim No.	Days	
SSM 63379.	40	SSM 63385	40	SSM 63391	40	
SSM 63380.	40	SSM 63386	40	SSM 63392	40	
SSM 63381.	40	SSM 63387	40	SSM 63393.	40	
SSM 63382.	40	SSM 63388	40	SSM 63394	40	
SSM 63383.	40	SSM 63389	40	SSM 63395	40	see also attached
SSM 63384.	40	SSM 63390	40	SSM 63396	40	

All the work was performed on Mining Claim (s) Work was performed on all claims
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations – Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Mr. S. V. Burr 324 St. George St. London, ONT. May 20 to Aug. 30/69
Mr. R. Strong 2014 - 44 King St, W. Toronto May 20 to Aug. 30/69
Mr. W. Mitchell 82 Concession St. W. Tillsonburg, Ont. May 20 to Aug. 30/69
Mr. John Boc Jr. R.R. 2, Courtland, ONT. June 2 to June 28/69
Mr. Robert Chatterson R.R.2, Courtland, ONT. June 2 to July 31/69
Mr. Robert Jonvik 1427 McBride St. N. Vancouver, June 14 to Aug.30/69

Twps 27 R13 & 28-13

NEW SENATOR-ROUYN LIMITED

Date September 24, 1969

Signature of Recorded Holder or Agent

RECEIVED
OCT 29 1969

The Mining Act
Certificate Verifying Report of Work

I, Ross STRONG

2014 - 44 King St W (Post Office Address)

hereby certify:

1. 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.
2. That the annexed report is true.

Dated Sept 24 1969

Signature

SSM-633

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS $500. OR SIX MONTHS IMPRISONMENT OR BOTH

Use for one type of survey only

Assessment Work Breakdown

1. Type of Survey _____
2. Township or Area _____
3. Mining claim numbers _____

_____

_____

_____

4. Number of miles of line cut 59.5 E

* 5. Type of instrument used _____

* 6. Scale constant or sensitivity _____

* 7. Number of stations established _____

8. Summary of days worked (details on reverse side)

(a) Total technical work _____

(b) Total line-cutting 369

(c) Total man-days worked _____

(d) Assessment days credit per claim _____

(Total man-days multiplied by assessment factor 4 divided by total number of claims traversed)

9. Dated Oct 13/63 Signed [signature]

*Complete only if applicable

Complete list of names, addresses and dates on reverse side.

Use for one type of survey only

SENATOR

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days
James Strayer	Scott Creek	July 15 - 30	120	15
Matt Wild	" "	July 16 - Aug 8	184	23
Carl Bossard	Valdez Creek	July 15 - Aug 15	240	30
Jim Anderson	Scott Creek	July 16 - 23	48	6
Nick Peters	Bitterroot Creek	July 14 - 23	40	5
Ronnie Jensen	Scott Creek	July 14 - Aug 3	112	14
Hyacinthe Salmasian	White River Creek	July 14 - Aug 15	208	26

(other sheet)

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Use for one type of survey only

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days
Lambert Nabigon	Fox-Ant	Aug 2-15	104	13
[illegible] & Stoddard	Lac Desfoullers [illegible]	" - "	104	13
Alfred " "	" " "	" - "	104	13
Philippe " "	" " "	" - "	104	13
Paul-Henri " "	" " "	" - "	104	13
Roger Beaulin	" " "	" - "	104	13
L. Tousignant	Destor Que.	Aug 8-15 ([illegible])	56	7

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Use for one type of survey only

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days
Jim Kerr	Batchawana Ont	July 25 - 27	24	3
Art Kusmiatti	Sco Ont	July 29 - Aug 3	40	5
Richard Hubert	" "	July 29 - Aug 9	72	9
Joseph Jones	" "	Aug 1 - 15	120	15
Raymond Nadeau	Wawa Ont	Aug 1 - 15	122	14
Val Montagano	" "	" "	122	14
Edward Nadeau	" "	" " - 9	56	7

(Wawa Ont)

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Use for one type of survey only

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days
Laurent Houle	~~[illegible]~~ Cléricy Que.	July 20 – 30	80	10
Paul Emile Picard	Cléricy Que.	July 20 – 30	80	10
Gaston Houle	" "	July 20 – 23	32	4
Elmer Lake	White River Ont.	July 22 – 25	32	4
Pete Nabigon	" " "	July 22 – Aug 15	168	21
Jerry Jones	Batchawana Ont.	July 22 24	24	3
Jerry Jourdain	[illegible] Ont. (c/o [illegible])	July 22 – Aug 2	80	10

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Use for one type of survey only

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days
Paul Bell	Fort Nelson	Aug 10-15	48	6
Paul Martin	Miranda Creek	July 15-Aug 15	240	30

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days

Personnel employed on line cutting - Paul Martin, Contractor -

James Stroyon	Sault Ste. Marie	July 15 - 30/63	15 day
Matt Will	" " "	July 16 - Aug. 8/63	23 "
Carol Brassard	Val d'Or, Quebec	July 15 - Aug. 25/63	30 "
Jim Anderson	Sault Ste. Marie	July 18 - Aug. 23/63	6 "
Nick Pears	Batchawana, Ont.	July 19 - 23/63	5 "
Romo Janveau	Sault Ste. Marie	July 19 - Aug. 3/63	14 "
H. Sabourin	White River, Ont.	July 19 - Aug. 15/63	26 "
Laurent Houle	Clericy, Quebec	July 20 - 30/63	10 "
Paul Emile Picard	" "	July 20 - 30/63	10 "
Gaston Houle	" "	July 20 - 23/63	4 "
Elmer Lake	White River	July 22 - 23/63	4 "
Jerry Jones	Batchawana, Ont.	July 22 - 24/63	3 "
Jerry Janveau	Sault Ste. Marie,	July 22 - Aug. 2/63	10 "
Jim Kerr	Batchawana, Ont.	July 25 - 27/63	3 "
Art Masicotte	Sault Ste. Marie	July 29 - Aug. 3/63	5 "
R. Hubert	" " "	July 29 - Aug. 9/63	9 "
J. Jones	" " "	Aug. 1 - 15/63	15 "
P. Nabigan	White River, Ont.	Aug. 1 - 15/63	14 "
V. Montagne	White River, Ont.	Aug. 1 - 15/63	14 "
E. Nabigan	" " "	Aug. 1 - 9/63	7 "
L. Nabigan	Sault Ste. Marie	Aug. 2 - 15/63	13 "
G. St. Goddard	Lac Dufault, Que.	Aug. 2 - 15/63	13 "
A. St. Goddard	" " "	Aug. 2 - 15/63	13 "
Philippe St. Goddard	" " "	Aug. 2 - 15/63	13 "
Paul-Henry St. Goddard	" " "	Aug. 2 - 15/63	13 "
P. Nabigan	White River, Ont.	July 22 - Aug. 15/63	21 "

R. Beaudoin	Lac Dufault, Que.	Aug. 2 - 15/63	13 days
L. Tousignant	Destor, Que.	Aug. 8 - 15/63	7 "
Paul Bell	Sault Ste. Marie	Aug. 10 - 15/63	6 "
Paul Martin	Noranda, Que.	July 15 - Aug. 15/63	30 "

Total Man-Days	369
	x 4
Total Assessment Days	1476
Reduced to Geological Assessment	436

Use for one type of survey only

Assessment Work Breakdown

Technical Work

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days
S. V. Burr 130 Elliott St. London	Geologist	Sept.28-Nov. 27	102	12¾
J. Corbett 66 Palace Dr. Sault Ste. Marie	Assistant	Sept.28-Nov.27	60	7½

Line-Cutting

Name	Address	Dates Worked	Total Hours	Total Days

Consultants

Name & Address	Dates Worked (specify in field or office)	Total Hours	Total Days

Draughtsman, Typing, others (specify)

Name & Address	Type of Work	Dates Worked	Total Hours	Total Days
S.V. Burr	Draughting	Between Sept.28-Nov.27 1963	48	6
Guy Hinse, Weston, Ont.	"	May 6-7, 1964	16	2
55 Bridesburg Dr. Helen Domenchuk	Typing	May 6, 1964	4	1/2
			230	28¾

Use for one type of survey only

Assessment Work Breakdown

1. Type of Survey Geological
2. Township or Area Township 28, Range 13
3. Mining claim numbers SSM 63391, 63392, 63393, 63394, 63395
   64141, 64146, 67133, 67134, 67446

4. Number of miles of line cut

* 5. Type of instrument used

* 6. Scale constant or sensitivity

* 7. Number of stations established

8. Summary of days worked (details on reverse side)

   (a) Total technical work

   (b) Total line-cutting

   (c) Total man-days worked

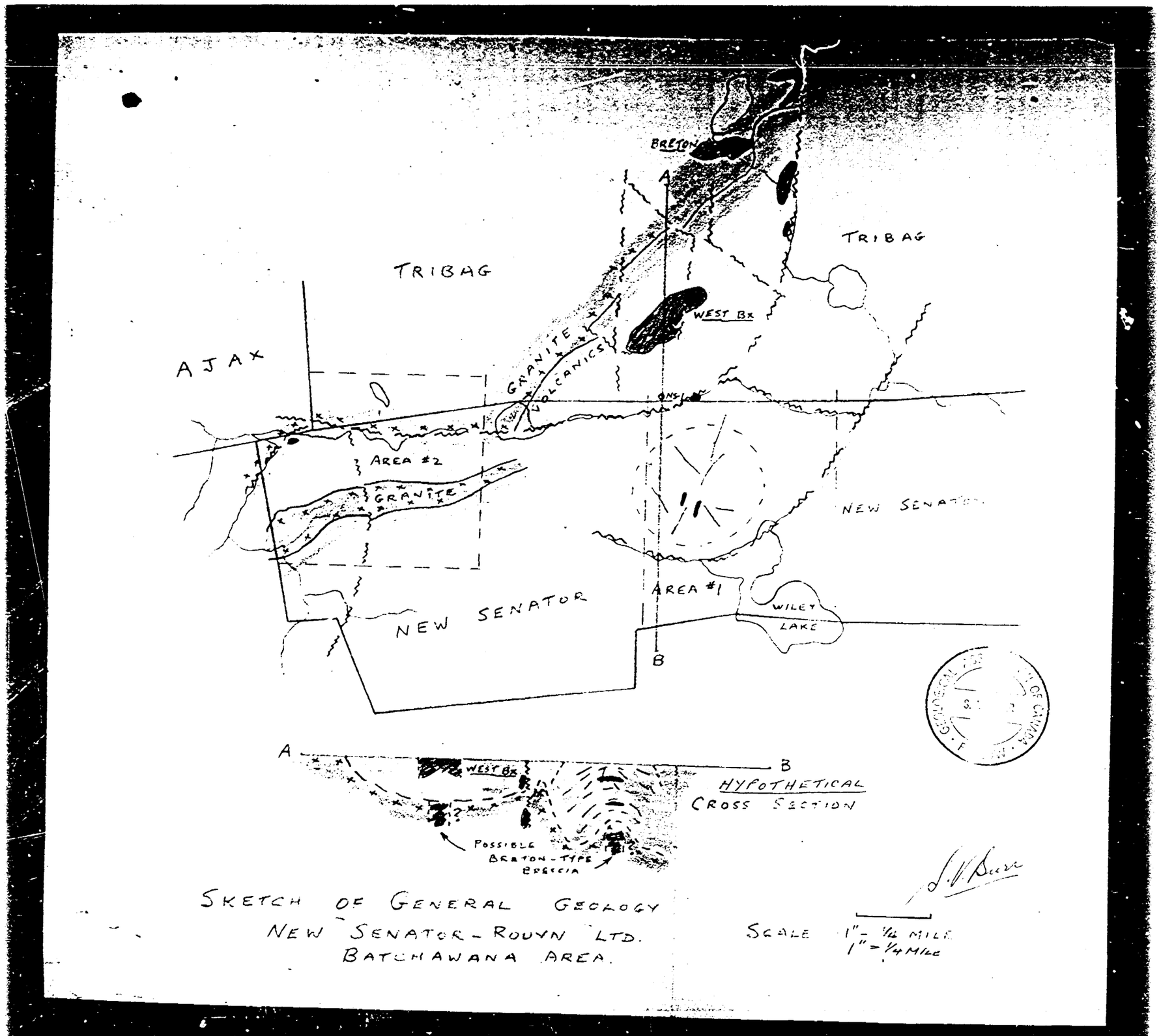
   (d) Assessment days credit per claim 11.5

   (Total man-days multiplied by assessment factor 4 divided by total number of claims traversed)

9. Dated June 23/64 Signed J. H. Bacon

*Complete only if applicable

Complete list of names, addresses and dates on reverse side.


BRETON
A
TRIBAG
TRIBAG
WEST Bx
AJAX
GRANITE
VOLCANICS
ONS
AREA #2
GRANITE
NEW SENATOR
AREA #1
WILEY
LAKE
B
A
WEST Bx
B
POSSIBLE
BRETON-TYPE
BRECCIA
HYPOTHETICAL
CROSS SECTION
SKETCH OF GENERAL GEOLOGY
NEW SENATOR - ROUYN LTD.
BATCHAWANA AREA.
SCALE 1" = ½ MILE
1" = ¼ MILE

ADDENDUM

PREVIOUS WORK

In the summer of 1963, a magnetometer and an altimeter survey was carried out by Hunting Survey Corporation, and in the fall of 1963, the writer mapped part of the geology in the western section of the claim group.

The picket lines used in these surveys are no longer visible, and a new line grid was necessary for the self potential survey.

Between September, 1963 and January, 1968, 14 drill holes were put down by the Company, for a total footage of 9551 feet.

SPECIAL PROVISION

ASSESSMENT WORK DETAILS

Type of Survey Self Potential
A separate form is required for each type of survey

Chief Line Cutter or Contractor W. T. Nyman, P. O. Box 1040, Kawa, Ontario
Name Address

Party Chief S.V. Burr, 324 St. George Street, London, Ontario
Name Address

Consultant S.V. Burr, 324 St. George Street, London, Ontario
Name Address

COVERING DATES Line Cutting Nov. 3-12, 1968, June 23-28, 1969, both inclusive

Field Geology or Geophysics May 21 - July 29, 1969

Office October 1 - November 26, 1969

INSTRUMENT DATA Make, Model and Type V.L. 6 and V.P. 7 - Sharpe

Scale Constant or Sensitivity ± 1 Millivolt
Or provide copy of instrument data from Manufacturer's brochure.

Total Number of Stations Within Claim Group 4900 Number of Miles of Line cut Within Claim Group 46

ASSESSMENT WORK CREDITS REQUESTED Geol[illegible] urvey_____Days per Claim

[illegible]ophysical Survey 40 Days per Claim

MINING CLAIMS TRAVERSED

Twp 28, R. 13 SSM 63379-63396 inclusive, 63408-63414 inclusive
63429-63432 inclusive, 64129-64141 inclusive, 64146-64149 inclusive
67133, 67134, 67146.

Twp. SSM 63400-63407 inclusive, 63415, 63416, 63419-63424 inclusive

TOTAL 65

DATE Nov 25/69 SIGNED NEW SENATOR-ROUYN LIMITED
[illegible]

Special provision credits do not apply to Radiometric Surveys.

1-633

Submission of Geological and Geophysical Surveys

As Assessment Work

SPECIAL PROVISION

In order to simplify the filing of geological and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to geochemical, ground radiometric or airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings,

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are thus jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Special Provision credits are confirmed to the Mining Recorder at the end of the fifteen days.

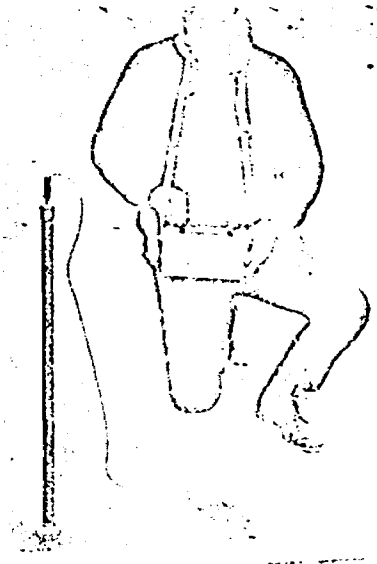
Date of Survey
June 12 & 13 / 1973

Staked
July 1 to Aug. 4 / 1973

Recorded
July 16 & Aug. 16 / 1973

Received in Project
November 13 / 1973

Six Months from Recording
January 17 / 1974



SCINTREX

VP-7

SELF POTENTIAL MEASURING UNIT

The self potential (SP) method of geophysical exploration makes use of spontaneous or natural voltages arising from differences in chemical activity in the ground. Such voltages normally range from a few millivolts in normal background areas to a few hundreds of millivolts over some sulphide bodies, notably those containing pyrite, chalcopyrite, pyrrhotite, as well as graphite.

The VP-7 is essentially a sensitive voltmeter designed to measure the potential difference between two non-polarizable electrodes in the ground.

OPERATION

1. Connect the two field wires from the non-polarizable electrodes to the input posts on the measuring unit.
2. Turn the function range switch from "off" to "battery check". The meter needle should move to within or slightly past the red marks on the meter. If not, unscrew the two caps (A + B) on top of the face plate and replace the batteries. The battery life should be approximately ten days of continuous daily operation. — 4 No. 216, 9 volt Eveready batteries — 2 in each well.
3. With the field lines connected, turn the function-range switch to the 1000 millivolt range, press the zero adjust button and zero meter by turning the zero adjust potentiometer. Repeat with the 300 and 100 millivolt ranges.
4. The meter is now ready to read. Select a range on the function-range switch which gives a meter needle deflection and read. Generally the 100 or 300 millivolt ranges would be appropriate. If the meter needle goes to the left of 0, flip the polarity switch.

NOTE: A reading obtained with the polarity switch on + means that the electrode connected to the red terminal post is positive with respect to the other electrode. A reading obtained with the polarity switch on − means that the electrode connected to the red terminal post is negative with respect to the other electrode.

SPECIFICATIONS

SENSITIVITY:	2 millivolts per scale division
ACCURACY:	2% of full scale
RANGES:	100 MV - 300 MV and IV full scale
BATTERIES:	4 Eveready #216 Neda 1604
BATTERY LIFE:	10 days continuous daily operation.
WEIGHT OF INSTRUMENT:	3 lbs. 2 oz.
DIMENSIONS:	3½" x 9½" x 5"

DESCRIPTION OF THE VP-7 SELF POTENTIAL MEASURING UNIT

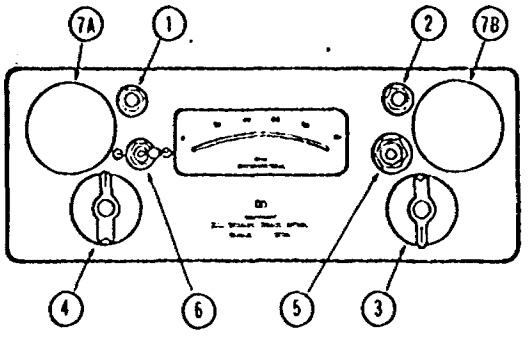


FIG. A

FIG. A METER PANEL

1. TERMINAL POST BLACK (negative)
2. TERMINAL POST RED (positive)
3. ON-OFF AND VOLTAGE RANGE SWITCH
4. ZERO ADJUSTMENT CONTROL — FINE AND COARSE
5. 'SET ZERO' PUSH BUTTON
6. IMPEDANCE POLARITY SWITCH
7. A & B BATTERY CONTAINERS

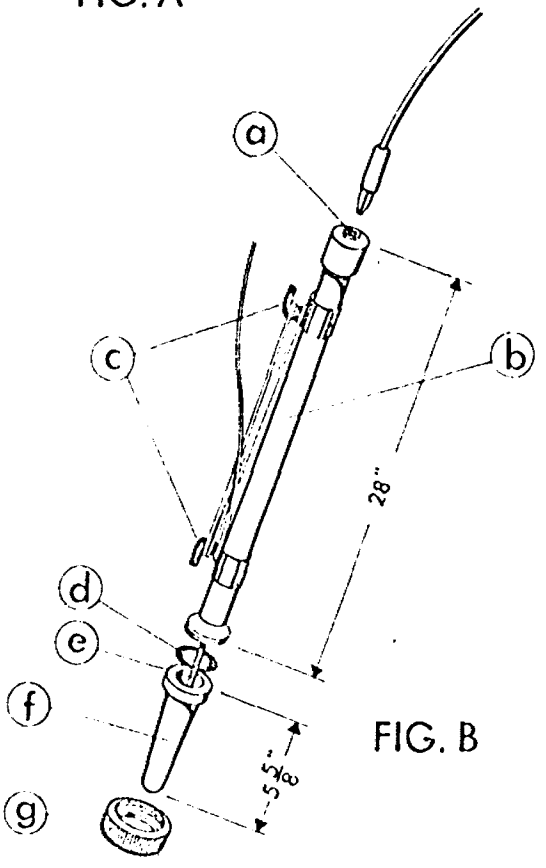


FIG. B

FIG. B ELECTRODE PROBES

a. RECEPTACLE for banana plug

b. RESERVOIR TUBE

c. CABLE STORAGE CLAMPS (50 ft. of #16 cable)

d. GASKET

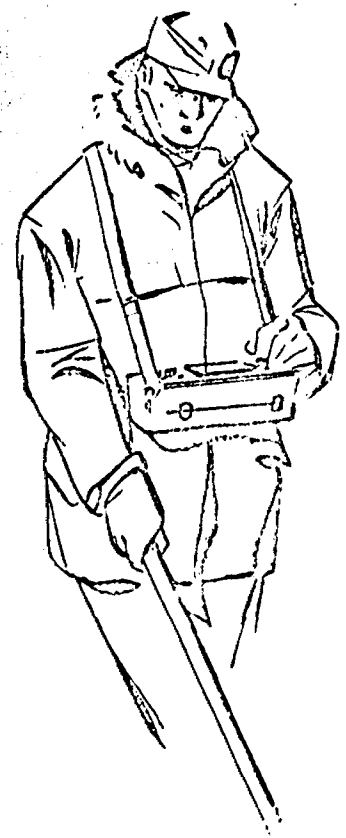
e. ELECTRODE TUBE

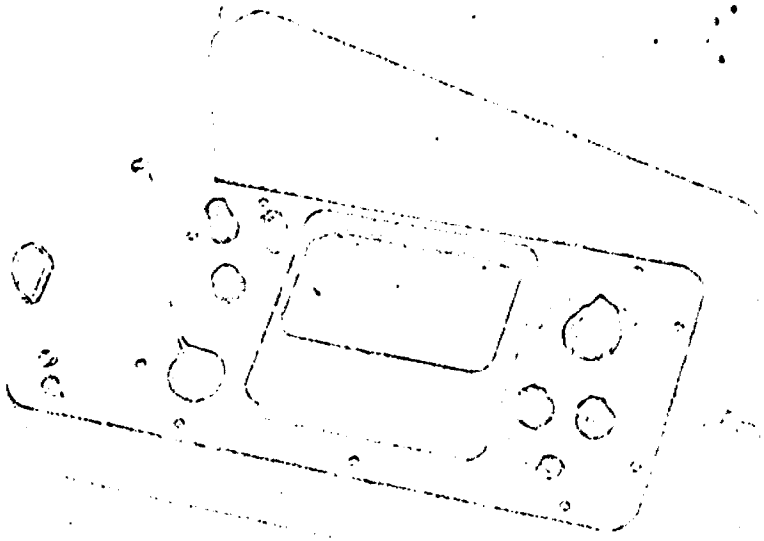
f. POROUS POT

g. LOCK COLLAR

SCINTREX LIMITED
79 Martin Ross Avenue, Downsview, Ontario, Canada

VP-6 GROUND VOLTAMETER





The ground voltameter is a unique device for measuring high impedance self-potentials, permitting operation under unfavourable ground conditions where contact is very difficult to make, e.g. frozen snow or desert country.

With the Model VP-6 Ground Voltameter the small natural voltages produced by the presence of sulphide mineralization are read directly and no electrical generating system is required.

To facilitate readings one pair of specially designed non-polarizing electrode probes is supplied with the instrument. Batteries are readily obtainable and can be replaced independent from the sealed instrument compartment.

SPECIFICATIONS

SENSITIVITY:	2 Millivolts per scale division
ACCURACY:	1 Millivolt over range of 0-1000 millivolts.
RANGES:	± 0 — 1000 millivolts by 10 steps of 100 millivolts full scale each.
ELECTRODE OPERATION:	50 feet (15 m) with standard supply of cable wound on storage clamps attached to probe. Up to 2000 feet, optional lightweight reel with commutator.
BATTERIES:	3 Eveready Batteries #E12N 1.3 volts 4 Eveready Batteries #U-15 22 volts
BATTERY LIFE:	80 hours of operation (2 yrs. shelf life)
WEIGHT:	Instrument—5 lbs. (2.3 Kg.) Electrodes—1½ lbs. (0.6 Kg.) each
SIZE:	Instrument—12" x 6" x 4½" high (30.4 x 15.3 x 11.5 cm.) (9¼ cm.) Electrodes—36" Complete

SSM-6-33

DESCRIPTION OF THE VP-6 GROUND VOLTAMETER.

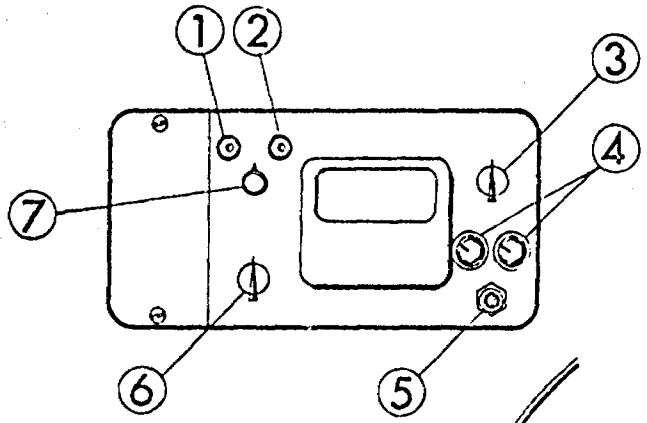


FIG. A

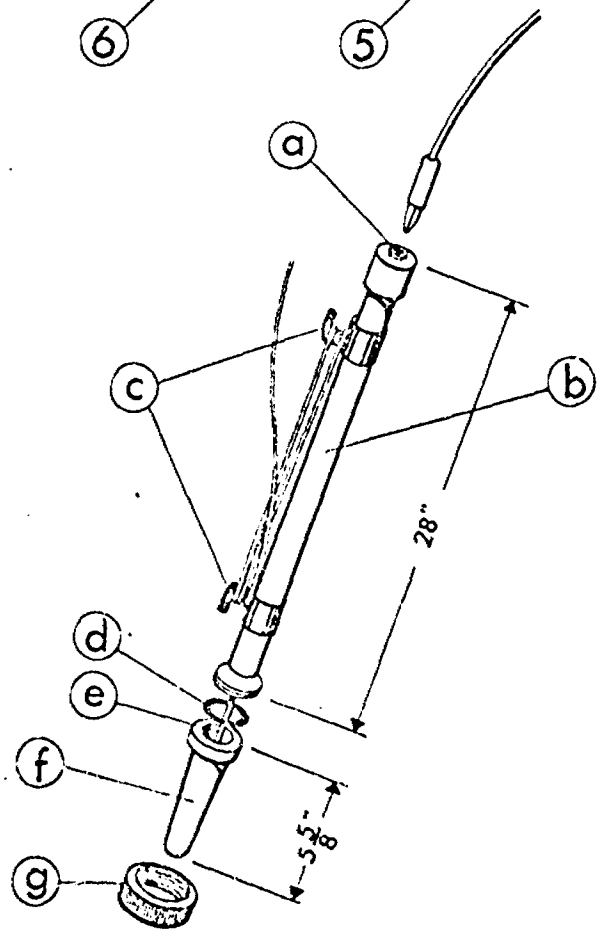


FIG. B

FIG. A METER PANEL

1. TERMINAL POST BLACK (negative)
2. TERMINAL POST RED (positive)
3. VOLTAGE RANGE SWITCH
4. ZERO ADJUSTMENT CONTROL — FINE AND COARSE
5. 'SET ZERO' PUSH BUTTON
6. MAIN SWITCH
7. IMPEDANCE POLARITY SWITCH

FIG. B ELECTRODE PROBES

a. RECEPTACLE for banana plug
b. RESERVOIR TUBE
c. CABLE STORAGE CLAMPS (50 ft. of #16 cable)
d. GASKET
e. ELECTRODE TUBE
f. POROUS POT
g. LOCK COLLAR

SHARPE INSTRUMENTS OF CANADA LIMITED
79 Martin Ross Avenue — Downsview, Ontario

PRINTED IN CANADA

Twp. 28 Range 14 (M.1529)

CLAIM MAP

TWP. 28 RANGE 13

DISTRICT OF
ALGOMA

SAULT STE MARIE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

1 M — RE-SURVEY — 2 M — BY — 3 M — O.L.S. J.A. LONERGAN — 4 M — 1949 — 5 M — 12M

Twp. (M.286)

Middle
Pancake
Lake

Pancake
Lake

400 Ac.
Ref. 119 Mg. 2

BLOCK "A"
200 Ac.
Ref. 121 Mg.

BLOCK "B" 311 Ac.
Ref. 124 Mg.

13M

14M

15M

16M

Twp. 27 Range 13 (M.1516)

Palmer Twp. (M.1326)

18M

TWP. 27 Range 14

CLAIM MAP

TWP. 27 RANGE 13

DISTRICT OF
ALGOMA

SAULT STE. MARIE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

TWP. 28 Range 13 M-1507

TWP. 26 Range 13 M-1507

TWP. 27 Range 12 M-1515

FOR ADDITIONAL INFORMATION SEE MAPS:

NICOLET 0027-AI #1-5

SSM 65642

SSM 65645

SSM 65643

SSM 65644

SSM 65394

SSM 65391

SSM 65390

SSM 65387

SSM 65386

SSM 61116

SSM 61117

SSM 61115

SSM 65383

SSM 67446

SSM 65393

SSM 65389

SSM 65388

SSM 65385

SSM 65384

SSM 65392

SSM 67133

SSM 64139

SSM 64135

SSM 64132

SSM 65386

SSM 64136

SSM 65395

SSM 67134

SSM 64133

SSM 64134

SSM 64138

SSM 64137

SSM 64141

SSM 64140

SSM 64146

SSM 64147

SSM 64148

SSM 64149

LAKE

LEGEND

- TRAP DYKE (a) Felsite, Aplite
- BRECCIA
- GABBRO (a) Diorite, b) "Granite" c) Fine grained
- GRANITE
- ANDESITE, BASALT (a) Tuff, b) Rhyolite c) Tuff

SYMBOLS

- PILLOW LAVA
- PILLOW, TOP DETERMINED
- SULPHIDE HOSTED
- BRECCIA HOSTED
- DIAMOND DRILL HOLE
- SHEAR or CONTACT Strike and Dip
- BEDDING - Strike and Dip
- CURVING BEDDING PLANES Showing Plunge
- FAULT
- CLAIM POST
- TRACTOR ROAD

S. V. Burr

NEW SENATOR-ROUYN LIMITED

BATCHAWA PROPERTY

GEOLOGICAL SURVEY

DATE: NOV. 1963

DRAWN BY: S.V. BURR

GEOLOGY BY: S.V. BURR

NICOLET 0027-A1 #1

200

NEW SENATOR ROUYN LIMITED

GROUND MAGNETOMETER SURVEY

BATCHEWANA RIVER AREA, ONTARIO

SCALE : 1 INCH to 400 FEET

HUNTING SURVEY CORPORATION LIMITED

TORONTO, CANADA

SEPT, 1963

KEY MAP

SCALE 1" = 1/2 M.

TWP 28 R. 13

TWP 27 R. 13

AREA SURVEYED

PALMER TWP.

TWP 27 R. 12

CONTOUR INTERVAL ..... 100 FEET

0,500,1000 GAMMA CONTOUR .....

100,200,300 GAMMA CONTOUR .....

MAGNETIC LOW .....

BASELINE No. 2

TIELINE No. 2

TIELINE No. 1

BASELINE 0+00

NICOLET 0027-A1 #2

NEW SENATOR ROUYN LIMITED

GROUND MAGNETOMETER SURVEY

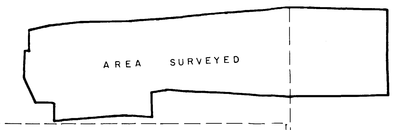
INTERPRETATION

BATCHEWANA RIVER AREA, ONTARIO

SCALE: 1 INCH to 400 FEET

HUNTING SURVEY CORPORATION LIMITED
TORONTO, CANADA
SEPT, 1963

KEY MAP
SCALE: 1" = 1/2 M.



INTERPRETATION LEGEND

- Basic dike
- Fault
- Geological contact
- Interpretation based on M, G, P. — Magnetic, Geologic, Photo evidence
- Magnetic lineation
- Topographic high
- Topographic low
- Scarp with indicated relief

GEOLOGICAL LEGEND

- I_B — Basic intrusive
- V — Intermediate to basic volcanic
- V_C — Mainly acid volcanics and/or sediments
- I_A — Acid intrusive

NEW SENATOR ROUYN LIMITED

GROUND ALTIMETER SURVEY

BATCHEWANA RIVER AREA, ONTARIO

SCALE : 1 INCH to 400 FEET

HUNTING SURVEY CORPORATION LIMITED

TORONTO, CANADA

SEPT., 1963

CONTOUR INTERVAL ..... 10 FEET

50, 100 FOOT CONTOUR .....

10, 20, 30, FOOT CONTOUR .....

LOW CONTOUR .....

KEY MAP

SCALE : 1" = 1/2 M.

TWP 28 R. 13

TWP 27 R. 13

AREA SURVEYED

PALMER TWP

TWP 27 R. 12

Norman Paterson P. Eng.

NICOLET 0027-AI #4

230

LEGEND

- +77 to 0 Millivolts
- 0 to -50 "
- -50 to -70 "
- -70 to -100 "
- -100 to -150 "
- -150 to -200 "
- -200 to -300 "
- -300 to -400 "
- -400 to -703 "

KEY TO
LOCATION OF CLAIMS

NEW SENATOR-ROUYN LTD.

SELF POTENTIAL SURVEY

OF

CLAIMS IN THE BATCHAWANA AREA. MAY – AUG. 1969

SCALE: 1" = 400' NOV. 20, 1969.

NICOLET OGRTAI #63-1271

GEOPHYSICAL ASSOCIATION OF CANADA
S. V. BURR
FELLOW

240