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PRELIMINARY REPORT

on

ARMAND DUMAS' GIZZARD RIVER CLAIM GROUP

GALINEE TOWNSHIP

MATTAGAMI AREA

ABITIBI EAST COUNTY, QUEBEC

by

W. Nowers Asbury M.Sc., P.Eng.

for

VIRGINIA MINING CORPORATION

Montreal, Quebec

PUBLIC

Montreal, Quebec
September 13th, 1958.

QUEBEC DEPARTMENT OF MINES

12 MAR 1959

MINERAL DEPOSITS BRANCH

No G.M.-

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PARTIAL LIST OF COMPANIES ACTIVE IN THE AREA

EXHIBITS

Geological Map of Area, Scale 1" to 4 miles

Geological Map of Claim Group, 1" to 1/4 mile

W. Nowers Asbury
M.Sc., P.Eng.
Consulting Geologist

HUnter 4-5995

5711 Westminster Ave.,
Montreal 29, Que.,
Sept. 13th, 1958.

The President and Directors,
Virginia Mining Corporation Limited,
1200 St. Alexander Street,
Montreal, Quebec.

Dear Sirs:

At the suggestion of Mr. David Clark, who was acting on your behalf, the writer spent the day of August 8th with Mr. Armand Dumas in his Ottawa office, gathering information on the Mattagami area in general, and his Gizzard River claim group in particular. Mr. Armand Dumas, whose home is in Malartic, Quebec, is M.P. for Villeneuve; and also a prominent Land Surveyor, well known by the mining fraternity.

A confidential report on the information obtained on this visit, and from other sources, was given to Mr. Clark on August 11th. This report recommended a visit to the property.

After talking over the situation with Mr. David Clark and Mr. John Hagan, your Consulting Engineer; and obtaining an advance of \$300 for expenses from Mr. Sam Smiley; the writer left Montreal early on August 20th, returning on the evening of August 25th.

On this trip the writer studied the claim group from the air while flying in on August 21st; and spent most of August 24th examining the property on the ground. While in the area the writer was based at the camp of Mr. Mastai Lemieux, land surveyor for Mr. Armand Dumas; which is on the east shore of the Allard River on New Hosco ground. The remainder of the four days was spent in examining the area by canoe and aircraft; and in discussions with various operators in the area.

The claims that are being offered to you are well located geologically. A northwesterly-striking aerial magnetic anomaly of medium intensity is contained within the claim boundaries. This, coupled with evidence exposed in surface stripping of the only known large outcrop area on the property, suggests that the economically important contact between the Bell River Complex to the east and the volcanic rocks to the west lies within the claim group.

HUnter 4-5995

W. Nowers Asbury
M.Sc., P.Eng.
Consulting Geologist

5711 Westminster Ave.,
Montreal 29, Que.,
Sept. 13th, 1958.

Letter to President
and Directors (Cont'd)

It is the writer's opinion that this claim group offers as good a chance of locating valuable mineralization as any other in the area.

It is strongly recommended that Virginia Mining Corporation take steps to acquire all, part of, or an interest in this block of claims; and that a geophysical contract be let to conduct an E.M. survey of the ground acquired, to be followed by a ground magnetometer survey of any conductors so discovered. If favourable geophysical results are obtained, diamond drilling should follow as soon as possible.

If your Corporation decides to follow the above recommendations the writer is prepared to submit a proper Engineer's Report on the property acquired.

Yours very truly,

Sgd: W. Nowers Asbury.



LOCATION AND ACCESS

The sixty claim group forming the subject area of this report is located in the north central portion of Galinee Township, Abitibi-East County, Province of Quebec, in what is now known as the Lake Mattagami (or simply Mattagami) Area. It lies in the drainage basin of, and, on its east and south borders contiguous to, the Gizzard River. This is a tributary to the Bell River; which lies about three miles east of the centre of the property. The group of claims is elongated in a direction slightly north of west. It is thirteen claims long and from two to seven claims wide, with the west boundary linear, and the east boundary irregular. In other words it is three and a quarter miles long, with an average width of almost a mile and a quarter. It is 2,400 acres in area, more or less.

The property is well located in respect to the two established ore discoveries. It lies three and a half miles east and a little south of the Watson Lake deposit of Mattagami syndicate, now under option to a group composed of Noranda Mines, McIntyre Porcupine Mines and Canadian Exploration Company; and ten miles southeast of the important copper discovery of New Hosco Mines. It is bounded on the north by Bouffard; on the northeast by the Knox Option; on the east by Mallen and Bourcier groups; on the southwest by Farwest and Bethlehem Copper; on the west by Bracemac, Mattagami Syndicate and Ajax Petroleums. It is also close to Marian Lake Mines on the southeast.

Centered near 49°42' north latitude, 77°39' west longitude the group is 95 miles from Senneterre, 90 miles from Amos, and 125 miles from Noranda, all by air. It may be reached from Mr. Armand Dumas' camp at Channel Rapids on the Bell River by canoe and trail, a distance of about eight miles, mostly by water. It may also be reached by trail from Watson Lake, a distance of approximately five miles. The property may also be described as lying ten miles south of the western end of Mattagami Lake.

GENERAL DESCRIPTION OF AREA

With the exception of a small hill forming an outcrop area in the west central portion of the property the area is mostly heavily wooded, low-lying, flat terrain. The Gizzard River partially surrounds the property on the east and south. One of its larger tributaries, which traverses the northern portion of the claim group, provides access, by light canoe and a three-quarters-of-a-mile trail, to the outcrop area. Having once been part of the bed of glacial Lake Barlow-Objibway the surface is covered by a mantle of varved (layered) clay. The soil underlying the western grain belt is derived from a similar clay which formed the bed of former glacial Lake Agassiz. When wet these clays form sticky "Gumbo". A second area of outcrop, in the southwestern portion of the property is marked on a Quebec Department of Mines geological map of the area; nor has it been reported by the prospectors. Neither this nor the main one coincide with either of the 2,500 gamma anomalies shown on the Geological Survey of Canada aerial magnetometer map.

PREVIOUS WORK IN THE AREA

In 1895 Robert Bell did the earliest geological work in the area. While carrying out a reconnaissance survey from Grand Lake Victoria to James Bay by way of the Bell River to Mattagami Lake and thence down the Nottaway River to his destination he observed the various rock formations along the shore. A map containing his observations was published in 1900.

In 1912 J.A.Bancroft also reconnoitred the basins of the Harricana and Nottaway rivers for the Quebec Bureau of Mines.

In 1927 the Geological Survey of Canada issued the Nottaway Sheet, a compilation of all previous information by H.C.Cooke. The Mattagami Area is included in this publication.

More recently A.H.Lang, G.W.H.Norman and B.C.Freeman did geological work in the area for the G.S.C.: while G.S.McKenzie, G.V.Douglas, P.E.Auger, W.W.Longley, B.C.Freeman & J.M.Black, and Rene Beland wrote geological reports on, or near, the area for the Quebec Department of Mines. In 1936 the writer assisted Dr.G.S.McKenzie in the examination of several properties to the east of the area; among which were the Laké Rose Mine and the Florence River Mine.

Prospectors have been active in the area off and on for many years; but were hampered by the prevalence of low, swampy ground, the general moderately heavy cover of clay overburden, and the lack of capital to employ geophysical methods.

It was not until 2 years ago that the region received a modern large-scale exploration program. Then it was that a group of six mining companies formed the Mattagami Syndicate. An airborne geophysical survey, flown by Dominion Gulf, was followed by ground geophysical surveys. This work was successful in locating the Watson Lake deposit. By the end of last year its ore was estimated as 14 million tons having an average grade of 13% zinc, 0.65% copper, 1.11 oz. silver and 0.016 oz. gold per ton. It is believed that work done so far this year by the opionees has increased the ore tonnage to over 20 million.

Last winter New Hosco conducted a magnetometer survey on its 40 claim property on the Allard River, some 8 miles northwest of the Watson Lake property. A diamond-drilling program was announced on May 1st. Renewed interest in the area was created by the published announcement on July 3rd of an intersection, in Hole No.1, of 77 feet of 4.01% copper. This news created a sensation on the Toronto Stock Exchange when the market value of the company jumped from \$400,000 to over \$16,000,000 within a week. The attention of the public was drawn to the area. "Mattagami" became a magic word in their minds. Many mining companies have taken, or are about to take, advantage of the healthy investment climate so created, by acquiring and exploring properties, consequently there are over 20 diamond-drills operating in the area, besides dozens of geophysical survey crews. The area has been heavily staked, and claim groups are being sold at high prices.

In short, the Mattagami Area is in the early stages of a full-scale mining exploration boom. The concensus of opinion among mining engineers and geologists who have studied the region is that it will eventually become a major mining camp.

GENERAL GEOLOGY

The name "Mattagami Area" has no definite geographical connotation. For the purpose of this report it may be considered as extending from the north-south boundary line between the Counties of Abitibi-East and Abitibi West (west longitude 78°-26') to the east boundary of the Townships of Duchesne, Dussieux, Bourboux, Berthiaume, Desjardins, Franquet and Quevillon (west longitude 76°-53'). It may thus be said to extend from ten miles west of Grasset Lake on the northwest to Quevillon Lake on the southeast. Its northern edge passes through Lakes Grasset, Mattagami, Olga and Goeland. To the west lies the Harricana Iron Range; while to the east lies the Bachelor Lake Area. It is seventy miles long and from 25 to 50 miles wide.

The area is underlain mostly by intermediate to basic volcanic rocks of Keewatin age with minor intrusives of various ages. The western half of this "greenstone" belt lies between two major granite masses; while its eastern half is split into two bands by a shark-shaped multiple intrusive. The western portion, or "head" of the shark" is anorthosite and gabbro, termed the Bell River Complex. The eastern portion is mainly diorite and granite; though interrupted by another, smaller, egg-shaped mass of the Bell River Complex. Both the north and south bands of greenstone; in the eastern half of the area; are marked at their eastern end by the occurrence of early Pre-Cambrian sedimentary rocks. The eastern end of the northern branch of the greenstone band is characterized by the presence of highly feldspathic trachytic lavas, generally porphyritic, but in places fragmental in structure. They contact the sedimentary rocks mentioned above. In its western portion the greenstone belt is traversed by two major sets of northeasterly-striking Keweenawian diabase dykes that are about 200 feet in width, and from 2 to 4-1/2 miles apart. One of these dykes is cut by a five foot wide pink, medium-grained quartz-diorite dyke. This may mean that there are acidic intrusives of Palaeozoic age in the area; which might have given rise to a late epoch of mineralization.

STRUCTURAL GEOLOGY

The Mattagami belt represents a tightly-folded, highly metamorphosed, severely faulted, and deeply truncated synclinal trough of early Pre-Cambrian rocks.

The folds, having originated from N-S compressive forces, strike E-W; and their limbs and axes dip steeply.

To date the early Pre-Cambrian rocks have suffered at least three periods of structural deformation; each giving rise to its own system of faults, and its own suite of intrusives.

The mountain-building forces in post early Pre-Cambrian time; which caused the folding; and which actually amounted to a shortening (or shrinkage) of the earth's crust; also gave rise to huge overthrust faults, with accompanying drag-folding in the deep-seated rocks near the zone of plastic deformation.

STRUCTURAL GEOLOGY CONT'D

In late Pre-Cambrian time occurred block-faulting (a part of the cycle of mountain-building resulting in a tendency of the north's crust to expand). This gave rise to a strong approximately N-S system of tension faults. This type of fracture penetrates deep into the earth's crust, allowing the intrusion of basic dykes - in this case the Keweenaw diabase dykes.

The third structural deformation occurred in Palaeozoic time, probably during the Devonian period. This is shown by the apparent offsetting of diabase dykes along the horizontal traces of northwesterly-striking fault zones.

It must be borne in mind that each successive period of faulting usually causes renewed movements along pre-existing fault surfaces. Many of the ore-bearing structures within the Pre-Cambrian Shield are subsidiary fractures arising from rotational stresses set up by later movements along the warped surfaces of old thrust faults, whereby their lumps and hollows no longer gibe, but are forced together.

The Pre-Cambrian Shield of Canada is thought to have been a positive land mass, i.e. been above sea level, throughout most of geologic time. For this reason the present bed-rock surface is the result of the erosion of over 30,000 feet of superincumbent rock. We are here confronted with remnants of mountain roots in the form of greenstone bands, and the remnants of mountain cores by large areas of granite and other intrusive rock types. Having been at one time deeply buried and subjected to great heat and pressure the rocks have been metamorphosed so that the original constituent minerals are usually represented by secondary alteration products such as mica, chlorite, kaolin, silica, serpentine, carbonates, graphite, magnetite, pyrrhotite and pyrite.

It is because of mechanical, physical and chemical forces involved before, during and after mountain building that the useful metallic elements normally present, but widely dispersed, in, and below, the earth's crust react, combine or get set free, dissolve, migrate in solid, liquid or gaseous solution and finally are deposited in a concentrated form, in a healed fracture to form a vein, or as a constituent of a rock mass to form a replacement deposit.

If the wanted minerals are sufficiently concentrated to be extracted, separated, put into marketable form and sold at a profit the occurrence can be termed an orebody.

ECONOMIC GEOLOGY

The Mattagami Area has always appealed to prospectors and geologists as a likely district for mineral discoveries. Due to the extensive mantle of clay from glacial Lake Barlowe - Ojibway, it was not until aerial geophysics was employed that any important find was made. Two years ago the Mattagami Syndicate, following up aerial indications by ground geophysics and subsequent diamond-drilling came up with a major discovery of zinc ore (see page 4). Several months ago New Hosco, on drilling a small aerial anomaly, obtained two long intersections of rich copper ore in their first few holes. This orebody, although quite a complicated occurrence, is already large and rich enough to be considered a potential producer.

ECONOMIC GEOLOGY CONT'D

Both these major finds are replacements of volcanic rocks; but in each case the ore-deposition has been associated with magnetite-bearing basic intrusive; which are probably offshoots of the Bell River Complex.

Another property east of the Bell River, formerly belonging to Keneco, now belonging to Conwest, is reported to have intersected 14' of 2% copper. The writer saw a piece of this core. It is also a sulfide replacement of volcanic rock.

Other properties to have discovered mineralization include Mining Corporation, Orchan, and Noront & Sudbay - the latter property being only 1/2 mile to the southeast of that being discussed in this report.

Many other companies are actively engaged in geophysical and/or drilling programmes. There are at least 20 drills in the camp as well as dozens of geophysical crews. Many E.M. conductors have been located. From experience gained in other, similar, camps some of these are bound to represent valuable mineral deposits.

The writer shares the opinion of many well-known and experienced mining men that the Mattagami Area will be of import on the mining scene for many years to come.

DESCRIPTION OF CLAIM GROUP

Parts of the Gizzard River claim group of Armand Dumas were first staked in 1947-8. In its present outline the block is elongated in a direction slightly west of north. It is 13 claims (3-1/4 miles) long and its average width is almost 5 claims (1-1/4 miles); although varying from 2 claims wide at the north end to 7 claims wide near the south end.

The 60th claim numbers are: 129342-3, 129353-5, 136880, 136882-3, 136885, 142548-50, all inclusive, and all representing claims 1 to 5.

These claims are in good standing until June 1959. The title to the mining rights is clear. They have been well and properly staked. They have not been surveyed yet.

LOCAL GEOLOGY

The claim group is well located geologically. The G.S.C. aerial survey magnetometer results show the existence, within the claim group, of a pattern of isomagnetic lines ranging from 1,800 gammas to 2,500 gammas intensity. The 2,500 gamma readings form two small anomalies in an elongated anomalous extending, in a northwest direction, diagonally through the block. The most southerly of the two anomalies is near the southeast corner of the group, while the other is near the centre of the group, about 3/8ths of a mile from the western boundary. The New Hosco aerial anomaly under which copper mineralization was found, is no stronger in intensity and no bigger in area. The only difference is that it strikes E-W, rather than NW-SE. The Mattagami syndicate had no aerial anomaly over their orebody. They did, however, map an anomaly from ground geophysical observations - - -

LOCAL GEOLOGY CONT'D

The reason for this is that the flight lines were sometimes 1/2 mile apart and a small local anomaly could easily be missed. Aerial magnetic maps give an indication of where to conduct ground geophysical surveys. They are not accurate enough to form the basis for a diamond-drilling program; unless, of course, the company concerned is unscrupulous about expenses.

The important thing about the claim group is that it appears to contain the contact between volcanic rocks on the west and the Bell River Complex on the east. Also the extension of a fault, mapped by Geotech, probably continues its northwesterly strike through the property. The pattern of the aerial anomalies supports this idea.

WORK DONE

Some stripping was carried out by two men, working for Mr. Armand Dumas, on the outcrop area during June and July of this year. This established the presence of **volcanic** rocks in the area.

ECONOMIC POSSIBILITIES

As far as the location of the claim group is concerned, with respect to what can be deduced from government and private geological and geophysical maps; and from observations made on the outcrop area; there is as good a chance of finding valuable mineralization there as in any other property in the area.

RECOMMENDATIONS

The outcrop area does not coincide with the most northerly of the two 2,500 gamma anomalies; which is between 1/2 to 1/4 of a mile to the southeast of the top of the hill. Therefore, pending results of the proposed geophysical survey, no further stripping and trenching need be done there, except what might be needed for geological mapping.

The writer recommends that Virginia Mining Corporation should acquire all, part of, or an interest in this block of claims; that an electromagnetic survey, on lines 400 feet apart, be undertaken; and that a magnetometer survey be made of any strong conductors which may be discovered by the E. M. work. It has been shown that the coincidence of E.M. and magnetic anomalies is a good sign for the existence, in the rock beneath, of mineralization.

The base line for the geophysical work should strike N.W. along the axis of the aerial anomaly. (~~New Brunswick example of cliff law.~~)

EXPENDITURES REQUIRED

Following is a suggested budget for one year's work on this property. Of course work can be started and continue to the point of diamond-drilling for a much smaller sum, say \$ 20,000.

It is important to include the following large budget in the final Engineer's Report for reasons of obtaining permission from the Securities Commissions for a large underwriting.

Acquisition of mining rights	\$ 10,000
Claim survey etc.	5,000
Geophysical survey	10,000
Preliminary diamond-drilling (5,000')	25,000
Camps, fuel, food and transportation	5,000
Engineering and supervision	10,000
Head Office Expenses & Legal Fees	10,000
Working Capital	25,000

T O T A L \$ 100,000

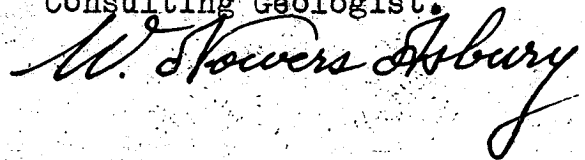
CONCLUSIONS

Your Corporation is fortunate indeed to be offered such an excellently located property in such a booming area. It would provide an easy vehicle for the securing of an underwriting. Chances are good for the finding of an orebody. The loyal shareholders would be pleased to learn that the Directors are employing their talents to keep the Corporation alive and progressive.

Respectfully submitted,

Sgd: W. Nowers Asbury M.Sc., P.Eng.

Consulting Geologist.



Montreal, Quebec.
September 13th, 1958.

CERTIFICATE

I, W. Newers Asbury, of Montreal, Que. do hereby certify as follows:

1. That I am an independent consulting geologist residing at 5711 Westminster Avenue, Montreal 29, City of Saint Luc, Qué.
2. That I am a graduate of McGill University, with degrees of B.Sc. (Honours in Geology) and M.Sc. (Economic Geology); and have been practicing my profession since 1936. Furthermore I have been actively engaged in mining since 1932.
3. That I am a Member, in good standing, of the Corporation of Professional Engineers of the Province of Quebec; and of the Association of Professional Engineers of the Province of Ontario.
4. That I have no personal interest in the properties or securities of Virginia Mining Corporation Limited; and do not expect to receive any such interest.
5. That this report, dated September the eighth, nineteen hundred and fifty-eight, on the Caline Township Property of Virginia Mining Corporation Limited, is based on personal examination of the property on August the twenty-fourth, nineteen hundred and fifty-eight; and on data supplied by Mr. Armand Dumas M.P. in his Ottawa Office on August the eighth, nineteen hundred and fifty-eight; and on observations made during a four-day visit through much of the Mattagami Area from August the twenty-first to August the twenty-fourth inclusive, nineteen hundred and fifty-eight.

Dated at Montreal, Quebec,
this 13th day of September 1958.

W. Newers Asbury

APPENDIX

PARTIAL LIST OF COMPANIES ACTIVE IN THE AREA

Ajax Petroleum
American Metals
Area Mines
Bidcop
Billiton Co.
Canada Radium Corp.
Canadian Exploration Ltd.
Canadore Mines
Camflo Mattagami
Central Porcupine
Chibougamau Mining and Smelting
Combined Metals
Consolidated Negus
Continental Mining
Daering Explorers
Daniel Mining Co.
D'Aragon Mines
Dome Mines
Dominion Gulf
Donalda Mines
Duvex Oils and Minerals
East Sullivan Mines

Hubert Lake Mines
Highland-Bell
International Nickel
International Ranwick
Iso Uranium
Jahala Lake Mines
Jellico Mines
Joburke Gold Mines
Johnsmith Mines
Kennco Explorations
Kitchigama Syndicate
Lambton Copper Mines
Leeds Metals Co.
Leitch Mines
Lyndhurst Mines

Merchant Mines
Marian Lake Mines
Martin-McNeely
Mattagami Syndicate
McIntyre Porcupine
McMarmac Red Lake
Mining Corporation
Min-Ore
Negor Mines
New Athona Mines
New Calumet Mines
New Hosco Mines
Newmont Mining Corp.
Noranda Mines
Noront-Sudbay Syndicate
Norvalie Mines
Obrien Gold Mines
Opemisca Explorers
Orchan Mines
Ormsby Mines
Pennbec Mining Corp.
Quebec Chibougamau Goldfield

Radiore Uranium
Rio Tinto
Roberval Mining
Roche Mines
Selection Trust (Selco)
Sullivan Consolidated
Tazin Mines
TechHughes
Three Brothers Mining
Trinity Chibougamau
Ventures Ltd.
Watson Lake Mines

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