



52C16SE0003 2.7573 BENNETT

010

BENNETT LAKE GEOLOGY

RECEIVED
DEC 17 1984
MINING LANDS SECTION

Submitted by:
Peter Mordaunt, Geologist

November 16, 1984

INTRODUCTION

The following report details the results of a major geological mapping program undertaken by Lynx-Canada Explorations Limited. The survey includes a detailed map at a scale of 1:2500 which outlines the portion of the claim block to which this report applies.

Location and Access:

The property is located north of Bennett and McPherson Lakes in the township of Bennett, in the Kenora Mining Division. The property lies approximately 40 km west of Atikokan, Ontario and north of highway #11. Access is obtainable via the Crilly road, which intersects highway #11 where the Seine river crosses the highway. An 8 kilometer drive along an all weather road leads to a basecamp (i.e. summer home) location on the south shore of McPherson Lake. The claim group lies north of the lake and is accessible by boat and/or foot.

Previous Work (1):

1896-1899: Developmental work first began on the property in 1886. Several test pits and a shaft was sunk to 75 feet (23 metres) with 20 feet (6 metres) of drifting and 13 feet (4 metres) of crosscutting at the 45-foot level (14 metres) were completed. In addition, on the north shore of Bennett Lake (formerly Cedar Lake) a 16-foot adit (5 metres) was driven northward. A five stamp mill was erected in 1898 through which 125 rons of core were milled. All the work was completed by the Independence Mining and Development Company Ltd. No further exploration work is known to have taken place on this property.

1910: The patented claims which were surveyed in 1897 lapsed in 1910 and became open ground.

1915: The property was acquired by J.A. Kennedy, et al.

1980: The property was visited by S.L. Fumerton of the Ontario Geological Survey and 11 sampled and detailed geological mapping is completed. At that time, the property was held was R.J. McLean Jr., E. Walton, M.J. Strangis, A.E. Dalby, and J.W. Richardson.

1982: The property was visited by the Atikokan Economic Geologist Program, where sampling was conducted.

Location and access of Independence Mine:

General Location

The Independence Mine is located within Bennett Township in the southern parts of Lots 11 and 12, Concession II and the southern part of Lot 11, Concession III. It is situated approximately 30 km east of Mine Centre and about 5.0 km north of Bennett Lake.

Access:

The property is accessible by foot trail from the north shore of Bennett Lake.

References:

ODM Vols. (1899)(1900)(1902);
Young (1960);
Fumerton (1981);
M.R.C. No. 13 (Ferguson et al, 1971);
Resident Geologist's Files, Kenora and Thunder Bay.

Map References:

Map 2443 Kenora-Fort Frances Sheet
(Blackburn, 1973-1978)
Lat. 48° 78'
Long. 92° 26'
Map P2405 Calm Lake Area
(Fumerton, 1981)
Aeromagnetic map 11426
ODM Geological Compilation Map 2115
Map 190b Bennett-Tanner Area
(Young, 1960)

General geology and structure of Independence Mine:

The Independence Mine is structurally situated (within 0.5 km) north of the Quetico Fault. The area is underlain by steeply dipping, west striking, felsic to mafic metavolcanics. The metavolcanics are composed of sericite-chlorite-carbonate schist which may have originally represented a felsic fragmental rock, such as a tuff of lapilli tuff which underwent intense shearing and silicification. These felsic tuffs are intercalated with mafic tuffs and epiclastic and chemical metasediments. Fumerton (1981) describes the country rock as a felsic quartz crystal tuff in which the quartz clasts commonly have a blue tint.

Shearing is prominent throughout the Independence Mine property, striking east-west with near vertical dips.

Mineralogy of the Independence Mine:

The main quartz vein was reported by Bow (1899) to be up to 60 feet (18 metres) in length on surface and up to 2 feet (0.6 metres) wide. Fumerton (1981) indicates that there are numerous small, discontinuous quartz veins occurring at various attitudes within a host rock of felsic tuff. The veins appear to be associated within east-west trending lenticular shear zones. Visible mineralization consist of pyrite, chalcopryrite, galena, sphalerite and gold; with accessory minerals including sericite, chlorite and carbonate.

The princial workings of the Independence Mine exploited narrow and discontinuous quartz veins in a sheared quartz crystal tuff.

Economic features of the Independence Mine:

Tonnage and Grade Estimates:

None recorded.

Past Production:

During 1898, Independence Mining and Development Co. Ltd. produced 121 ounces of gold from 125 tons of ore giving a grade of 0.97 ounces of gold per ton. (Ferguson et al, 1971)

Chemical analysis of the Independence Mine:

Bow (1899) reported alleged gold values of 0.39 ounces per ton in the host rock adjacent to the main quartz vein, which contains erratic gold mineralization of up to 7.76 ounces gold per ton. Eight selected grab samples from a rock dump near the shaft were collected by Fumerton (1981) giving values obtained from samples of quartz vein material from trace to 0.96 ounces gold per ton. A sample of the host rock, barren of sulphide mineralization, contained trace amounts of gold, whereas host rock samples with some sulphide mineralization contained between trace and 0.04 ounces gold per ton. Twelve samples collected from the adit on the north shore of Bennett Lake contained trace amounts of gold.

Samples collected by the Atikokan Economic Geologist Program gave low results.

PRESENT WORK:

Staking:

65 contiguous claims were staked in the winter/spring of 1983, surrounding the Independence mine shaft with the bulk of claims to the east. The claim group consists of:

K 759817		1
K 759821 - K 759850	inclusive	30
K 759777 - K 759795	inclusive	19
K 676190 - K 676196	inclusive	7
K 655361 - K 655368	inclusive	8
		<hr/>
		65

All claims are recorded in the Kenora Mining Division of plan M-1920 Bennett Lake.

LINE CUTTING:

An exploration grid totalling 116 km was cut over the whole portion of the property (34 + 00 west - 38 + 00E). A baseline was cut in an east-west direction with winglines perpendicular to the baseline at 100 meter intervals. Chained stations along the winglines were established with a 25 meter spacing. This geological report, however, is only concerned with lines 34 + 00W - 15 + 00W.

GEOLOGICAL MAPPING:

The aforesaid grid was mapped and prospected during the spring, summer and early fall period of 1984 at a scale of 1:2500.

REGIONAL GEOLOGY

The Bennett Lake Property occurs in the Wabigoon Subprovince and is located north of the Quetico fault. The area consists mainly of metavolcanic and metasediments that are situated south of the Hillyer Creek Dome and north of the "Seine Series" metasediments.

The regional strike tends approximately in an east-west direction with a dips steeply to the south and verticle.

PROPERTY GEOLOGY

The area mapped on the Bennett lake property during the 1984 field season corresponds with lines 16 + 00W through 34 + 00W inclusive. Generally speaking, the geology is quite variable and changes in lithology occur quite abruptly on the property.

BENNETT LAKE GEOLOGY

- 1** MAFIC VOLCANIC
 - A Undefined
 - B Tuffaceous
 - C Crystal tuff
 - D Lapilli tuff
 - E Flow

- 2** INTERMEDIATE VOLCANIC
 - A Undefined
 - B Banded tuff
 - C Tuff
 - D Crystal tuff
 - E Lapilli tuff
 - F Flow

- 3**
 - A Intermediate quartz-eye tuff
 - B Intermediate quartz-feldspar porphyry

- 4** FELSIC VOLCANIC
 - A Undefined
 - B Banded tuff
 - C Tuff
 - D Crystal tuff
 - E Lapilli tuff

- 5** METASEDIMENTS
 - A Wacke
 - B Siltstone
 - C Argillite

- 6** BANDED IRON FORMATION
 - A Chert
 - B Sulphide
 - C Oxide

- 7** FELSIC DYKE ROCK

The legend insert on the next page outlines the geological units mapped and these in turn will be discussed in the order as they appear on the legend.

MAFIC VOLCANICS:

Mafic Volcanics comprise the most abundant lithology on the property. Most mafic volcanics on the property appear to be undefined and are massive to weakly foliated. Grain size varies from an ash (finegrained) to a more medium grained (tuffaceous) rock type. Some areas within this rock type contain quartz carbonate stringers. Although these areas are relatively scant it is of importance to note their relative location close to contacts (i.e. L-19 + 00W near baseline extending north).

INTERMEDIATE VOLCANICS:

There appears to be two distinct and easily recognizable intermediate volcanic lithologies. The first type of intermediate volcanic unit is a discontinuous and interfingered lithology that is mainly comprised of tuffaceous volcanics. Structurally they appear in lenses that are stringy and thin with a fine to medium grained texture. Foliated to weakly foliated these intermediate volcanics are conformable to other geological units. In some instances these units may actually be an intermediate tending more towards a mafic rather than a true intermediate rock type. However, for better geological definition and mapping identification these have been defined as a separate lithology.

The second intermediate lithology is physically significant by virtue of the fact that opalescent bluequartz-eyes are recognized in an Intermediate tuff. Also within this lithology one may observe a quartz-feldspar porphyry with and without quartz-eyes. The most prominent area with these lithologies displayed, occurs along the baseline from 19 + 00W to 27 + 00W. This lithological unit is quite large in size extending roughly to 2 + 50N and 0 + 75 South.

FELSIC VOLCANICS:

Felsic volcanics on the property generally appear as small and discontinuous bands, south of the baseline. These tuffs to crystal tuffs are generally fine to medium grained and contain a great deal of silicification. Banding within the crystal tuffs is quite common with most felsics revealing foliation. These volcanics are conformable and quite similar in size and structure to some Intermediate volcanics with which they are often associated.

To the north of the property larger stratabund felsic volcanic bands appear. They are thicker and more continuous. These are interbanded/bedded with sediments, mafic and intermediate volcanics. Although they are more abundant than felsics in the southern portion of the property they are similar rock types in terms of structure and grain size.

METASEDIMENTS:

Sediments are found in two distinct segments of the property. To the north of the property, sediments are interlayered with felsic volcanics, iron formations and mafic volcanics. These lithologies are approximately 25 meters in width and are thinly laminated wackes and siltstones. These fine grained sediments are lenses that are discontinuous along strike. Some segments display quartz veining and oxidation.

The second area of sedimentary deposition is an extremely broad zone to the south and west portion of the property. This may represent the end of a sedimentary unit that may be pinching out. Alternatively, this may be a large sedimentary unit that has been interfingered with volcanics.

The unit consist of alternatively bands of wacke, siltstone and argillite. The intercalated fine grain metasediments are in some zones contorted and carbonatized. These metasediments lie conformable to regional strike. There is, however, a series of unique folds that may be important for structural consideration south of the baseline on lines 33 + 00W to 29 + 00W related to the sedimentary and volcanic contact. The sediments although stratigraphically significant in size have not as yet proved significant in

economic terms (i.e. gold results).

BANDED IRON FORMATIONS:

The Banded Iron Formations as typically expected occur within meta-sediments. These cherty units contain varying amounts of sulphides and are associated with oxidation weathering. These relatively thin units (i.e. 1/2 meter - 10 meters) in width are discontinuous and conformable with other geological units. The economic significance of these iron formations has yet to be determined, however, economic values have been attained in the trenched areas close to what is believed to be an iron formation. Therefore, there may be a relationship that drilling can confirm.

FELSIC DYKE ROCK:

A unique felsic dyke that cross cuts strike and intrudes country rock south of the baseline (i.e. 5 + 00S) between lines 29 + 00W to 31 + 00W. This dyke is massive to weakly foliated and contains sulphide mineralization. Assays are not encouraging.

TRENCHING:

A soil geochemical survey completed in the 1983 field season revealed an extremely high sample result (i.e. 0.05 oz.ton/Au) at location 25 + 00W, 0 + 25N. Follow-up prospecting (in 1984) lead to a major trenching effort just south of this location (baseline) which resulted in a showing with extremely high values (see trench plan). The economic significance of this zone is yet undetermined, however, the geological environment has been established as a unique setting.

A highly weathered ("latheritized") iron formation of significant width (i.e. 10 meters) was uncovered with the aid of a bulldozer and backhoe. Bedrock within this zone was not detected to a depth of approximately 15 feet. High gold and silver values were sampled at the contact between banded sediments and mafic volcanics (i.e. wall rock). Within the wallrock, quartz veins and sulphides plus, telluride mineralization are identified. This zone

is coupled with a good magnetic response indicative of magnetite. A strong VLF-EM conductor couples the magnetic anomaly and is thought to be a response to sulphide and possibly pyrrhotite mineralization.

In addition to high gold and silver values a unique and as yet, un-
identified gold, silver, lead-telluride mineral was uncovered. Presently, x-ray
diffraction methods for mineral determination are being conducted at the
University of Toronto's, mining laboratory. *Native tellurium + altaite, from OMEP*
#0MB3-3-C-354, Nov. 1988.

STRUCTURE:

The Bennett Lake property is generally massive-foliated and is steeply dipping to the south. Little identifiable faulting occurs throughout the property, however, a fault is evident at line 19 + 00W north of the baseline. Trenching at line 25 + 00W has shown there is a possible fault oriented in a north-south direction.

CONCLUSION:

1. The complexity of geology on the property related to a variety of lithological units and abrupt changes in geology over small distances, suggests that important details related to economic mineralization may have been missed by this survey.
2. This geological survey has outlined geological units that could aid in the prospecting of the property.

RECOMMENDATIONS:

1. Follow-up work of a prospecting variety specifically on iron formations, metasediments and felsic volcanics to the north of the property.
2. Drilling of the trench area where good assay results have occurred to test this zone; plus provide insite for other areas of the property with similar geology.

3. More detailed geological mapping in areas of higher assay results to obtain the maximum information about the geological environment.

Randy Crandall
Dec 12/84.

REFERENCES

1. 1984
Ontario Geological Survey, mineral deposits files, Independence Mines,
77 Grenville Street, Toronto, Ontario

2. 1984
"Seine River Geology" Chris Suchanek unpublished.

1985 01 16

Your File: 270-84
Our File: 2.7573

Mining Recorder
Ministry of Natural Resources
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

RE: Notice of Intent dated December 27, 1984.
Geological Survey on Mining Claims K 655361
et al in Bennett Township.

The assessment work credits, as listed with the
above-mentioned Notice of Intent, have been approved
as of the above date.

Please inform the recorded holder of these mining
claims and so indicate on your records.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-6918

S. Hurst:sc

cc: Lynx-Canada Explorations Limited
Suite 520
25 Adelaide Street East
Toronto, Ontario
M5C 1Y2

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Peter Mordaunt
32 Clayland Drive
Apt 516
Don Mills, Ontario
M3A 2A4

Resident Geologist
Kenora



Ministry of
Natural
Resources

Jan 11/85

1984 12 27

Your File: 270-84
Our File: 2.7573

Mining Recorder
Ministry of Natural Resources
808 Robertson Street
Box 5080
Kenora, Ontario
P9N 3X9

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

S. Hurst:mc

Encls.

cc: Lynx-Canada Explorations Limited
Suite 520
25 Adelaide Street East
Toronto, Ontario
M5C 1Y2

cc: Peter Mordaunt
32 Clayland Drive
Apt. 516
Don Mills, Ontario
M3A 2A4

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario



Ministry of
Natural
Resources

Notice of Intent
for Technical Reports

1984 12 27

2.7573/270/84

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.



Ministry of Natural Resources

File _____

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

ALICE

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geological
Township or Area Bennett Twp.
Claim Holder(s) Lynx Canada Expl. Ltd.
S20-25 Adelaide E. TORONTO
Survey Company Lynx Canada
Author of Report Peter Mosdault
Address of Author S20-25 Adelaide St. E.
Covering Dates of Survey May - Aug 1984
(linecutting to office)
Total Miles of Line Cut 30 km.

MINING CLAIMS TRAVERSED
List numerically

K 655361
(prefix) (number)
655368
676190
676191
676192
676193
676194
676195
676196
759817
759821
759826
759827
759828
759829
759830

RECEIVED
DEC 17 1984
MINING CLAIMS SECTION

If space insufficient, attach list

<u>SPECIAL PROVISIONS CREDITS REQUESTED</u>	DAYS per claim
Geophysical	
-Electromagnetic _____	
-Magnetometer _____	
-Radiometric _____	
-Other _____	
Geological <u>20</u>	
Geochemical _____	

ENTER 40 days (includes line cutting) for first survey.
ENTER 20 days for each additional survey using same grid.

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

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Dec 12/84 SIGNATURE: Peter Mosdault
Author of Report or Agent

Res. Geol. _____ Qualifications 23117

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 16

OFFICE USE ONLY

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth -- include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: Fixed transmitter Shoot back In line Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

**INDUCED POLARIZATION
RESISTIVITY**

Instrument _____

Method Time Domain Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____



Ministry of
Natural
Resources

Ontario

**Technical Assessment
Work Credits**

File
2.7573

Date
1984 12 27

Mining Recorder's Report of
Work No. 270-84

Recorded Holder LYNX-CANADA EXPLORATIONS LIMITED
Township or Area BENNETT TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ 20 days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	K 676190 to 196 inclusive 759817 759826 to 829 inclusive

Special credits under section 77 (16) for the following mining claims

<u>10 DAYS</u>	<u>15 DAYS</u>
K 655361	K 655368 759821-30

No credits have been allowed for the following mining claims

<input type="checkbox"/> not sufficiently covered by the survey	<input type="checkbox"/> Insufficient technical data filed
---	--

							2 1573		
655361	1/2		65927	✓					
68	1/4		61	1/4					
676190	✓		50	✓			h		

