MINERAL RESOURCE EVALUATION REPORT
ON THE
LONNIE RARE EARTH ELEMENTS PROPERTY

MANSON CREEK - GERMANSON LANDING AREA
NORTHERN B.C.

Latitude 55º41'N (UTM 6,171,300mN)
Longitude 124º23'W (UTM 413,300mE)
MAP 93N/9W

FOR
RARA TERRA CAPITAL CORP
Suite 1160 - 1100 Melville St.,
Vancouver, BC Canada
V6E 4A6
604 681 7822

N. TRIBE

NT&A

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March 10, 2011
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PROFESSIONAL
PROVINCE OF
N. L. TRIBE
BRITISH COLUMBIA
ENGINEER

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EXECUTIVE SUMMARY

This report is written at the request of John Veltheer, Director, representing Alexander Helmel, Chief Executive Officer, of Rara Terra Capital Corp., 1160 - 1100 Melville St., Vancouver, B.C., Canada, V6E 4A6, for the purpose of providing a resource evaluation of the cabonatite deposits located on Granite Creek, south east of Manson Creek, in North Central, British Columbia. The Lonnie Property is located 8 kilometers (5 miles) east of the village of Manson Creek, some 3 hours drive north of Fort St. James. The property consists of 8 claims, covers 1604.62 ha., and is situated at latitude 55°41'N, longitude 124°23'E, (UTM 413,300E, 6,171,300N), on NTS Map Sheet 93N/9W. Altitude on the property varies between 3200 feet and 4000 feet. The property is under an option by Rara Terra Capital Corporation, to purchase 60% interest in the property from American Manganese Inc. Rara Terra Capital Corporation has entered into a letter of intent, dated November 29, 2010, with American Manganese Inc., pursuant to which Rara Terra can acquire up to 60% interest of the 100% interest of American Manganese Inc in an to the Lonnie Property. For additional information on the letter of intent, please see the section entitled "Property Description and Location"

Results published in the government MinFiles indicate that the carbonatites of the Lonnie #1 carbonatite lens contains 0.25% niobium and up to 15% titanium. (These results are not compliant with NI 43-101 standards.) A five hole drilling program is recommended to verify the results published in the MinFiles on the Lonnie #1 showings.

An exploration program in 2009, conducted by American Manganese Inc., located a lens of carbonatite rocks approximately 450 meters north of the Lonnie #1 and drilled five diamond drill holes on this showing. This showing was named the Lonnie #2. Five holes were drilled for a total of 474 meters of drilling.

Assay results for niobium were less than expected and did not compare favorably with the Lonnie #1 showings.

No further work is recommended on the Lonnie #2 showings.

An exploration program consisting of several soils geochemistry survey lines was completed in July of 2010. This survey covered the regional fault structure believed to be the controlling factor in the placements of the carbonatites, including the Virgil showings near the northern boundary of the property.

The soils down slope from the Virgil carbonatite showed distinctly anomalous values for niobium. The soils geochemistry down slope from the other showings were weakly anomalous.

An airborne magnetic survey was carried out in February of 2011 consisting of 173.8 km of flight lines spaced at 100 meters. The magnetics clearly outline the regional shear structure and indicate that the carbonatites are located near the eastern edge of this fault. Two small anomalies, “the Blue Spot Anomalies“, indicating negative influence on the total magnetic field make targets compatible with the magnetite associated with base metal deposits such as the SEM showing. Follow up trenching is recommended on these magnetic lows.

A drilling program consisting of three holes is recommended for the Virgil showings.

This is to be followed with a soils geochemistry survey and then with a trenching program on the anomalies.

The trenches are to be mapped and sampled in preparation for drilling of any targets so established. A drilling program can then be carried forward onto the targets established by the trenching.

A suggested budget is $220,850 for Phase I and $192,350 for Phase II, plus a 15% contingency, for a total of $ 475,180. Phase II will be contingent on positive results from Phase I.

INTRODUCTION AND TERMS OF REFERENCE

This report is written at the request of John Veltheer, Director, representing Alexander Helmel, Chief Executive Officer, of Rara Terra Capital Corp., 1160 - 1100 Melville St., Vancouver, B.C., Canada, V6E 4A6, for the purpose of providing a resource evaluation of the cabonatite deposits and the associated rare earth elements located on Granite Creek, 8.0 kilometers south east of Manson Creek in North Central British Columbia. This technical report has been prepared in compliance with National Instrument 43-101 for Rara Terra in connection with its qualifying transaction per the regulatory requirements of the TSX Venture Exchange. Pursuant to a letter of intent dated November 29, 2010, between Rara Terra and American Manganese Inc. American Manganese Inc has agreed to grant Rara Terra an option to acquire up to 60% interest in and to the Lonnie Property. For additional information on the letter of intent, please see the section titled "Property Description and Location.

The report will also provide recommendations for further work, if warranted, to continue to develop the properties in the most efficient manner and to provide the engineering data to allow a determination of the economics of mining the niobium and other rare earth elements present in the known deposits on the property.

This report is an analysis of the data presented in the government's MinFile data together with the data collected during the 2009 drilling program in which 5 drill holes were drilled on the adjacent Lonnie #2 showings. The report also covers a small soils geochemistry survey carried out in July of 2010 consisting of 166 soil samples and eight rock chip samples. These soils and rock chips were assayed for the full suite of rare earth elements. The results of this survey and the rock samples taken are included in the text of this report. The results for the niobium included in this suite are plotted in Figure #6 included in the map packet.

The writer visited the property October 16th, 17th and 18th, 2009, collected samples from Lonnie #2 and made a visual inspection of Lonnie #1. The Virgil showings were not accessible at that time.

RELIANCE ON OTHER EXPERTS

The writer is required by NI 43-101 to include description of the property title and terms of legal agreements. The Mineral Titles Branch of the Ministry of Energy Mines and Petroleum Resources shows that the titles are 100% owned by American Manganese Inc. (name changed from Rocher Deboule Minerals Corp.), APPENDIX I. There are eight claims (See table below) covering 1604.62 Ha. The title documents are legal matters beyond the scope of this report and can be reviewed at Rara Terra Capital Corp.'s offices. The claim map has been provided by the Minerals Titles Branch by way of Mineral Titles On Line.

Earlier writers have provided geology logs of holes drilled on the Lonnie #1 showings in 1979 and short reports are provided on the property. No assay details are given for these holes and only a general statement as to grade is reported in these old reports.

Figure #1 Location Map for the Lonnie Property within B.C.

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Figure #1 Location Map, Manson Creek, North Central B.C., Canada.

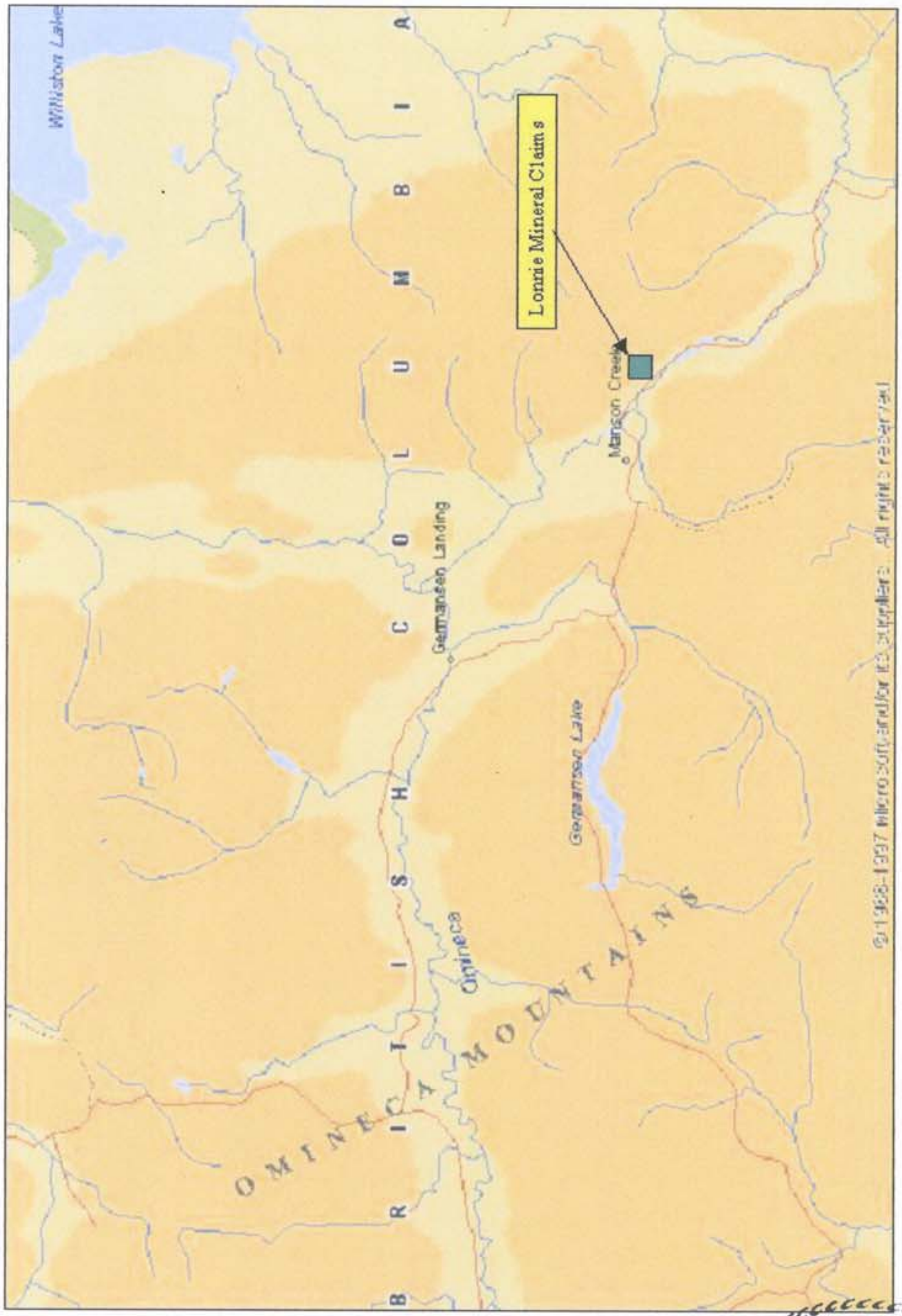

Figure #2 Location of the Lonnie Claims with Respect to Manson Creek

Figure #2 Location Map Lonnie Deposit Manson Creek B.C., Canada.

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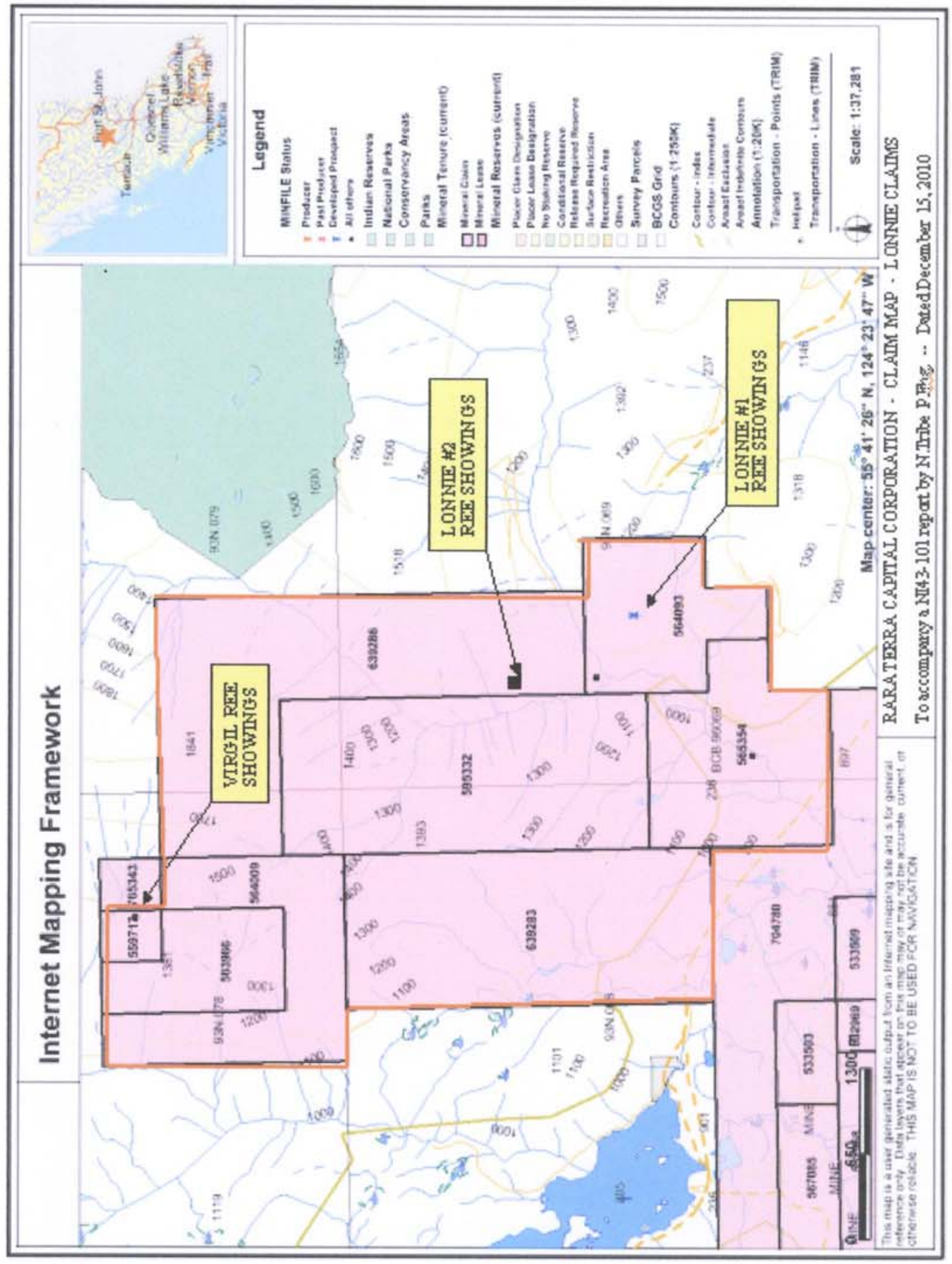

Figure #3 Claim Map Lonnie Property

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PROPERTY DESCRIPTION AND LOCATION

The Lonnie property is located some 800 kilometers north of Vancouver in the Omenica Mining District near the settlement of Manson Creek.

The Lonnie property is situated at 55°41'N. latitude and 124°23' west longitude (UTM 413,300E, 6,171,300N) on NTS Map Sheet 93N/9W, on Granite Creek, 8.0 kilometers (5.0 miles) east of Manson Creek and covers 1604.62 ha. Altitude on the property varies between 3200 feet and 4000 feet. The property is 100% owned by American Manganese Inc..

THE LONNIE GROUP OF CLAIMS

CLAIM (TENURE) NUMBER	AREA Ha.
559717 expiry Jul 31,2015	18.22
563966 expiry Jul 31,2015	91.13
564009 expiry Jul 31,2015	164.05
639286 expiry Jul 31,2015	364.61
595332 expiry Jul 31,2015	328.23
639283 expiry Jul 31,2015	328.26
564093 expiry Jul 31,2015	127.69
565354 expiry Jul 31,2015	182.43
Total Hectares	1604.62

Location of Mineralization and Workings

The property contains several conformable formations of carbonitite reported to contain niobium, zirconium, titanium and rare earth elements. The mineralized outcrops in the Lonnie #2 showing have been partially covered by recent road building work done by the logging company on whose timber license the showings are located and who completed clear cut logging on this slope within the last two years.

The mineralization on the Lonnie #1, some 450 meters south of the Lonnie #2, was explored in 1979 by 3 diamond (Winkie Xray) drill holes under the direction of Mr. P. Vaillancourt and these are reported in Assessment Report 7515.

Terms of Agreements

The property consists of 8 claims, covering 1604.62 ha. These claims are 100% owned by American Manganese Inc. (Rocher Deboule Minerals Corp.). The tenancy numbers are listed in the above table and documents are included in Appendix I.

The agreement between Rara Terra Capital Corp. (RT) and American Manganese Inc. (AMY) is summarized as follows;

Option of Property:

AMY will grant RT an option (the "Option") to acquire up to 60% of its right, title and interest in and to the Property free and clear of all liens, charges and encumbrances by:

RT paying to AMY $60,000 as follows:

$10,000 as a refundable deposit on the execution of this Letter of Intent (the "First Deposit");

$10,000 as a refundable deposit on the execution of the Definitive Agreement (the "Second Deposit");

$20,000 on or before the first anniversary date of the Definitive Agreement; and

$20,000 on or before the second anniversary date of the Definitive Agreement (each, a "Cash Payment");

RT incurring exploration expenditures of $500,000 on the Property as follows:

$100,000 on or before the first anniversary date of the Definitive Agreement;

$100,000 on or before the second anniversary date of the Definitive Agreement; and

$300,000 on or before the third anniversary date of the Definitive Agreement; and

(c) RT allotting and issuing to the Optionor, as fully paid and non-assessable:

100,000 Shares on or before the first anniversary of the Definitive Agreement;

100,000 Shares on or before the second anniversary of the Definitive Agreement; and

100,000 Shares on or before the third anniversary of the Definitive Agreement (each, a "Share Issuance").

If RT incurs exploration expenditures which exceed the amount required to be incurred within any period, then such additional costs shall be carried forward to the succeeding period and qualify as exploration expenses for such succeeding period. If the exploration expenditures incurred are less than the amount required to be incurred within any period, RT must pay the deficiency, in cash, to AMY within sixty (60) days after the end of such period in order to maintain the Option.

ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Lonnie property is accessed by traveling first to Prince George then west to Vanderhoof then north to Fort St. James, thence north on a good gravel Forest Service Road 175 kilometers to the turn off onto a small gravel cut block access road which leads to the property. The Lonnie #1 showings are located 3.0 kilometers up this road and the Lonnie #2 showings are 4.5 kilometers up this road. It should be noted that this road was decommissioned by the Ministry of Forests. This required recommissioning of the road for the drill program including the creek crossing on Upper Granite Creek. The roads were decommissioned again after the drill program was completed. The elevation at the showings varies from 975 meters (3200 feet) to 1158 meters (3800 feet). On the Lonnie #2 there are two road cuts which expose the showings, one at 1128 meters (3700 feet) and the second at 1109 meters (3640 feet). The upper road was used for drill access for this drill program. The area around the showings has been clear cut for the timber but exposures of bedrock are sparse, the ground being covered with glacial till.

The climate is typical of north central B.C. with temperatures reaching the low 30 degrees Celsius in summer and -40 degrees Celsius in winter. Average precipitation listed for Manson creek is 38.1 cm. (15 inches).

There are no local resources aside from the road access. Manson Creek has very limited accommodation as does Germansen Landing. The store at Manson Creek has a limited supply of food stuffs and a small restaurant at Germansen Landing services the tourist trade in the summer. Other supplies have to come from Fort St. James or Mackenzie. Both are a three to four hour drive away. Telephone service is available at the Manson Creek Store. Internet connection is also available at the Manson Creek Store.

Manson Creek is a mining town with the basic income derived from alluvial mining and a small tourist component in the summer months. Forest companies are active in the area with the logs being hauled to Mackenzie for processing.

The power grid does not reach Manson Creek and diesel power is generated locally for the settlement.

The physiography at the property is mountainous with deeply incised creeks and steep terrain. Wild life in this area consists of grizzly bears, black bears, wolves, caribou, moose, numerous small predators, lynx, bobcat, foxes, martin, fisher, weasel and mink. These live on the numerous squirrels, rabbits, mice and birds, including Franklin grouse and ptarmigan. Muskrat and beaver habituate the creeks and lakes.

HISTORY

The Lonnie showings were discovered in 1953 by Messrs. Floyd, Powney, Almond and Kay while prospecting for uranium in the area. The first claims were staked by C.S. Powney in 1954 and sold to Northwestern Explorations later that year.

The following year Northwestern (or perhaps Kennco Explorations) dug 28 trenches along a strike length of 488 meters (1600 feet). Assay results returned values of 0.21% Nb_2O_5 columbite (niobium or columbium) over 14.3 meters (47 feet), with a central zone returning values of 0.30% Nb_2O_5, columbite, over 7.6 meters (25 feet). These results are non-compliant with respect to NI 43-101 standards.

Westrim Mining Corp. acquired the property in 1969 and resampled the trenches. The resampling returned values of, 0.1-0.15% Nb; 0.2-0.3% Zr; 0.001-0.018% Y; 0.2-0.7% Ti; 0.2-0.3% Mn; and 0.005% Cu. The following year Westrim returned and dug a further 5 trenches at the southwest end (lower end) of the showings. These trenches were sampled and returned values of 0.1% Nb and 0.1% Zr. These results are also non-compliant with NI 43-101 standards.

The claims were restaked in 1976 by Mr. Powney. The claims were later optioned to Moly Mite Mines Inc. and in 1979 three Winkie "Xray" diamond drill holes were drilled under the direction of Pierre Vaillancourt and Robert Stokes of Stokes Exploration Management Co. Ltd.

The Virgil showings, 3 kilometers northwest of the Lonnie showings, were trenched by Texaco in 1975. Texaco completed 565 meters of trenching and reported values of 0.19% Nb_2O_5 in one of the trenches.

In 1982 the property was covered by claims owned by Mr. H.M. Jones. These claims were called the Wolverine Group and were optioned to Golden Slipper Resources Inc. In the summer of 1982 considerable work was done including geology, silt and soil sampling, and magnetic surveys all under the direction of B. Taylor, P. Eng., of G.A. Noel & Associates Inc. Very little new understanding was added as a result of this work.

The "Floyd Claims" were staked by G. Belik on behalf of Mr. Ernie Floyd covering the Lonnie and Virgil showings in 2001. Work in 2001 consisted of soils geochemistry and rock sample surveys. (See Assessment Report 26854 dated May 13, 2002.) Again, very little advancement was made with respect to the development of the property.

The present claims were staked in August of 2007 by Rocher Deboule Minerals Corp. (now renamed to American Manganese Inc.) and cover the entire zone in which the carbonatites have been recognized from Lonnie on the south to Virgil (Brent) on the northwest.

The present work consisting of 5 BQTW diamond drill holes for a total of 474 meters was drilled on the central portion of the Lonnie #2 showings.

GEOLOGICAL SETTING

Regional Geological Setting

The regional geology is dominated by the Wolverine Complex (Ingenika Group) in which the carbonatites of the Lonnie showings are located. The Wolverine Complex is of Late Proterozoic age and consists of amphibolite facies metamorphic rocks. The assemblage consists of hornblende gneisses, biotite garnet schists, marbles, carbonatites and quartzites. These rocks trend Az., 150° and dip 70° to the southwest. A strong northwest trending fault, the Manson Creek Fault, separates the Wolverine Complex from the Cache Creek Group to the west. (MEMPRBC-MRD-GSB Open File 1990-32)

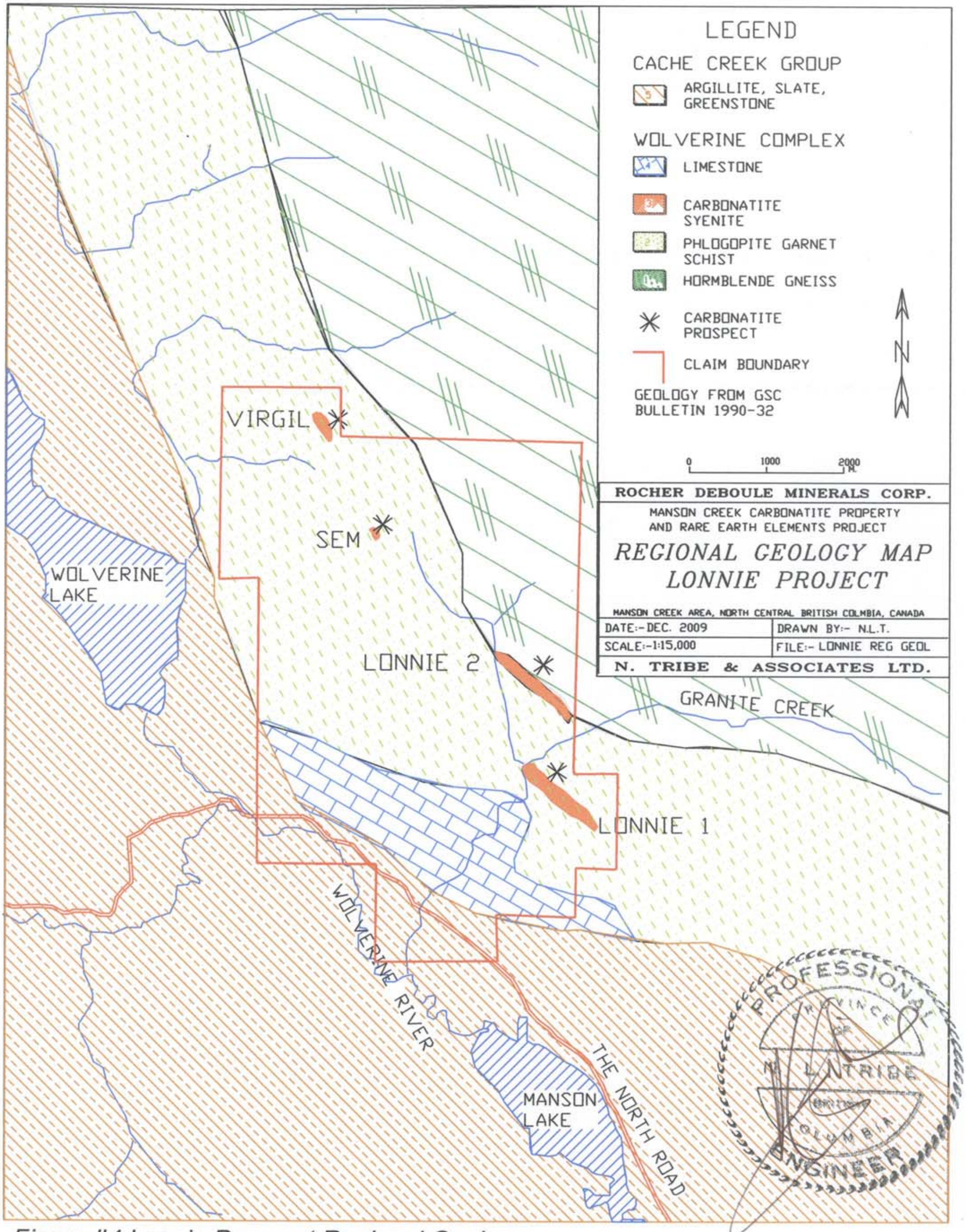

Figure #4 Lonnie Prospect Regional Geology

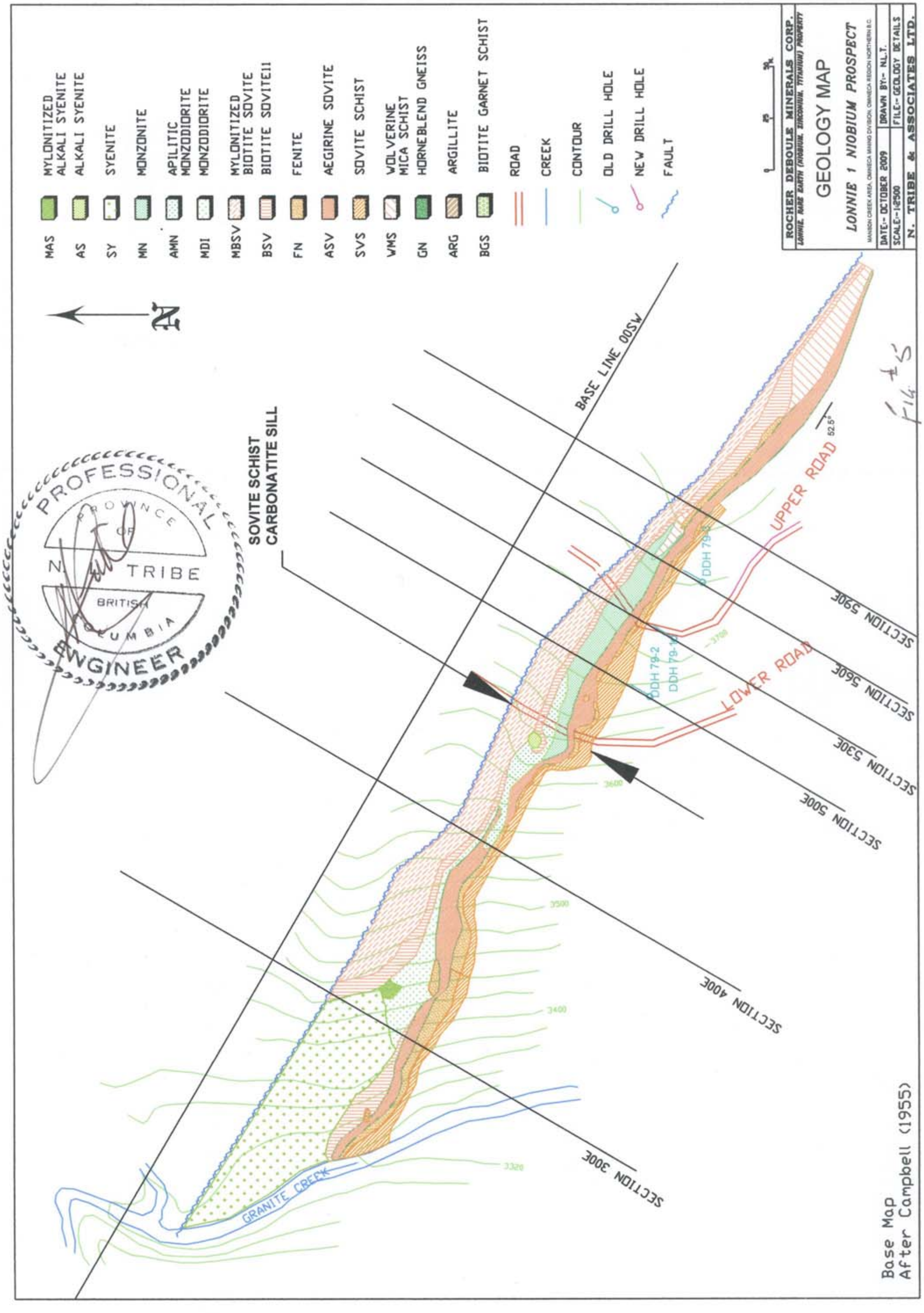

Figure #5 Local Geology Map LONNIE 1

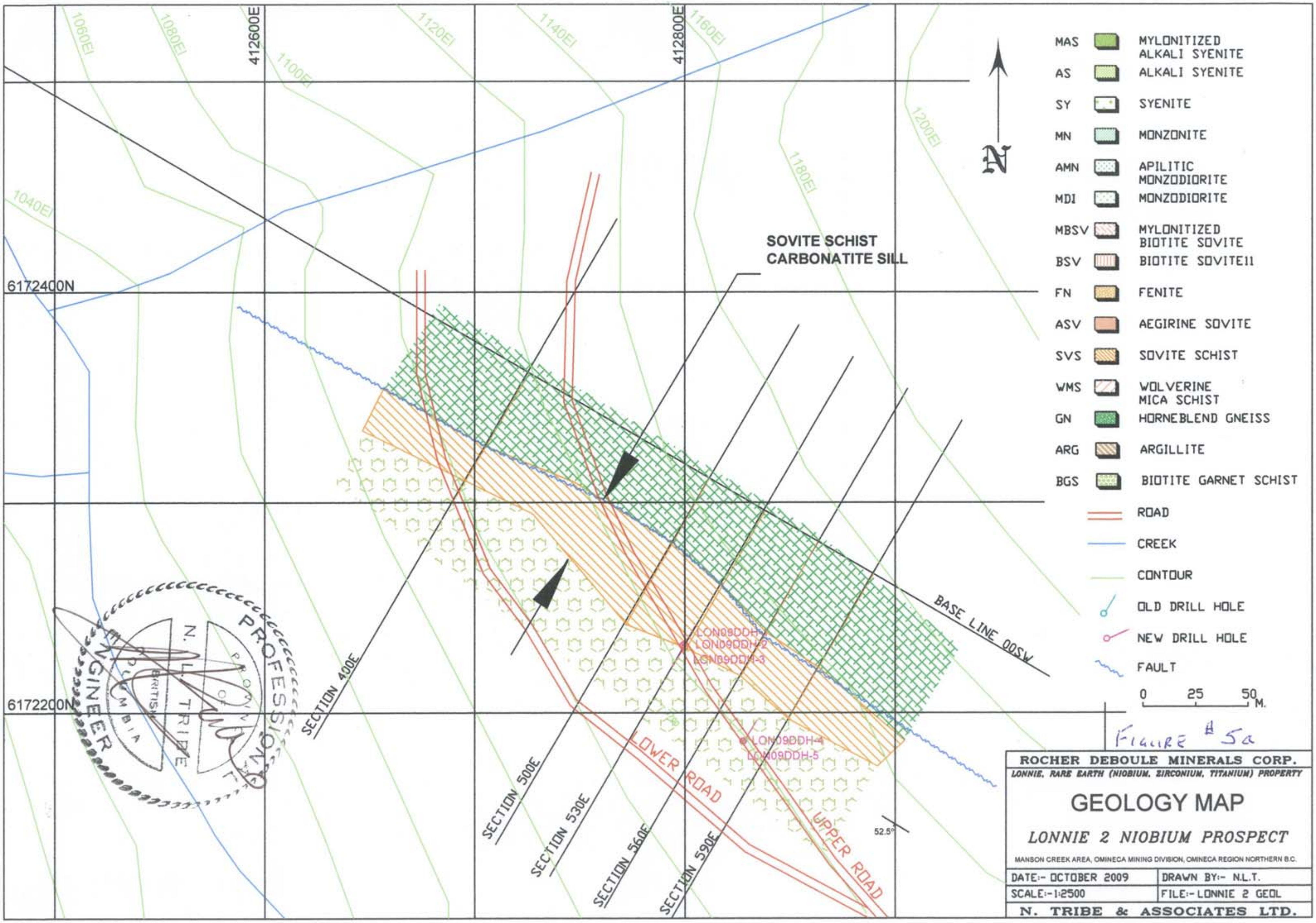

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Figure # 5a

ROCHER DEBOULE MINERALS CORP.

LONNIE, RARE EARTH (NIOBIUM, ZIRCONIUM, TITANIUM) PROPERTY

GEOLOGY MAP

LONNIE 2 NIOBIUM PROSPECT

MANSON CREEK AREA, OMINECA MINING DIVISION, OMINECA REGION NORTHERN B.C.

DATE:- OCTOBER 2009	DRAWN BY:- N.L.T.
SCALE:- 1:2500	FILE:- LONNIE 2 GEOL

N. TRIBE & ASSOCIATES LTD.

Property and Local Geology with Lithology

The following description of the Lonnie showings is published in the B.C. Ministry of Mines Geological Survey Branch; "A conformable medium grained carbonatite complex intrudes the metasediments of the Upper Proterozoic Wolverine Complex (Ingenika Group). The metasediments include quartz hornblende gneiss, quartz gneiss, quartzite and garnet biotite muscovite schist. Both the carbonatite complex and the country rocks have been metamorphosed to amphibolite grade. The northern contact of the complex is mylonitized.

The Lonnie carbonatite complex consists of discontinuous lenses of syenite, monzonite and sovite. The syenite is composed of oligoclase, microcline and up to 25% calcite, and contains accessory minerals muscovite, zircon, ilmenorutile and columbite ($(Fe,Mn)(Nb,Ta)_2O_6$). Two varieties of carbonatite are present. The aegirine sovite contains calcite, microcline perthite and aegirine and the accessory minerals apatite and pyrochlore,

($(Ca,Na,Y,Ce, Th,U,Ti)(Nb,Ta)_2O_6(O,F,OH)$). The biotite sovite contains calcite, biotite and accessory minerals, microcline, apatite, zircon, columbite, ilmenorutile and ilmenite. Pods of fenitized country rock occur within the complex and the country is typically fenitized for tens of meters away from the contacts.

The carbonatite zone measures 500 by 50 meters along a 120° strike and 70 ° southwest dip. " (MEMPRBC-MRD-GSB Open File 1990-32). Values reported in the MinFiles indicate a zone of mineralization 480 meters by 15 meters grading 0.21% Nb^2O^5 with a central portion grading 0.30% Nb^2O^5 over a length of 240 meters and a width of 7.6 meters. (Not compliant with NI43-101 standards)

The Lonnie #2 showing is very similar to Lonnie #1 and the purpose of the 2009 exploration was to explore this newly exposed carbonatite. Although the rocks are aegirine sovite and biotite sovite and the alteration is fenitization and mylonitization, and are very similar to Lonnie #1. Core drilling across the Lonnie

#2 structure revealed the rare earth elements were at background levels (22 ppm Nb^2O^5). These results are compliant with NI 43-101 standards)

The Virgil showings located near the northern edge of the property are thought to be related to the Lonnie showings and are a similar carbonatite, syenite complex sill like structure. Fenitization and mylonitic alteration indicate the association with the Lonnie Complex and a major fault system which is believed to be the controlling structure. Minerals of interest in the Virgil deposit are apatite, zircon, columbite and pyrochlore. The Virgil carbonatite is 200 meters long and 75 meters wide, striking 135 degrees Az., and dipping 50 degrees to the southwest. Values reported in the MinFiles are 0.19% Nb^2O^5, 0.15% TiO^2, 0.05% La^2O^5, and 0.03 %$Nd^2O^{5.}$. Results Non compliant with NI 43-101 standards)

DEPOSIT TYPES

The carbonatites are considered to be intrusive sills injected along strong regional faults. The carbonatites are interfingered with syenite sovite and monzonite within the sill. The columbite occurs as disseminations at or near the contact between the syenite sovite and the biotite sovite within the sill. The entire sill is considered prospective.

MINERALIZATION

The columbite occurs as disseminations within the carbonatite at or near the contact between the syenite sovite and the biotite sovite. The columbite, $((Fe,Mn)(Nb,Ta)_2O_6)$, is a fine black grainy accessory mineral with associated apatite, ilmenorutile, ilmenite and pyrochlore,

$((Ca,Na,Y,Ce, Th,U,Ti)(Nb,Ta)_2O_6(O,F,OH))$. Pure columbium columbite, $Nb_2O_{5,}$ is 70% niobium but there is often considerable tantalum substituted into the columbium lattice. The element niobium was once called columbium and the mineral form of niobium pentoxide is still called columbite.

The Lonnie #1 carbonatite sill is 575 meters long and varying between 50 and 15 meters wide with disseminated mineralization throughout. The hangingwall is biotite garnet schist adjacent to the sovite (carbonatite) then argillite. The footwall rocks are argillite adjacent to the sovite and then gneiss. Fenitization is noted in the wall rocks

The Lonnie #2 carbonatite sill is 600 meters long and 20 to 40 meters wide with disseminated mineralization throughout. The drilling has indicated that the width of the sill is continuous at a consistent width to a depth of at least 60 meters. The hangingwall rocks are a biotite garnet schist and the footwall rocks are gneiss. Fenitization is noted in the wall rocks

The Virgil carbonatite sill is 250 meters long and 75 meters wide with disseminated mineralization throughout. The hangingwall rocks are metasediments (biotite garnet schist), and the footwall is gneiss. Fenitization is reported in the wall rocks.

All three of the showings have discontinuous outcrops protruding through the glacial till which blankets the area.

EXPLORATION

The present phase of exploration has concentrated on drilling the newly exposed showings at Lonnie #2. The area around the Lonnie #2 carbonatite showings has been clear cut by the forest company.

Five holes were drilled on two sections (530SW and 590SW cutting the known carbonatite showings. One of these holes was drilled to the south missing the carbonatite sill, remaining in the hangingwall garnet schists.

The carbonatite was confirmed to be 15 metres (50 feet) in width dipping 60° to the southwest.

The core was split on site and samples every 1.52m, (5 feet) were bagged and sent to Pioneer Laboratories in Richmond for analysis. The remainder was returned to the boxes covered with tarps and stored at the site.

The Lonnie #1 showings are defined by the old trenching and some outcrops along the roads constructed by the loggers.

Very limited exploration work has been done on the Virgil showings.

The work completed in October 2009 was carried out by American Manganese Inc. by their exploration crews.

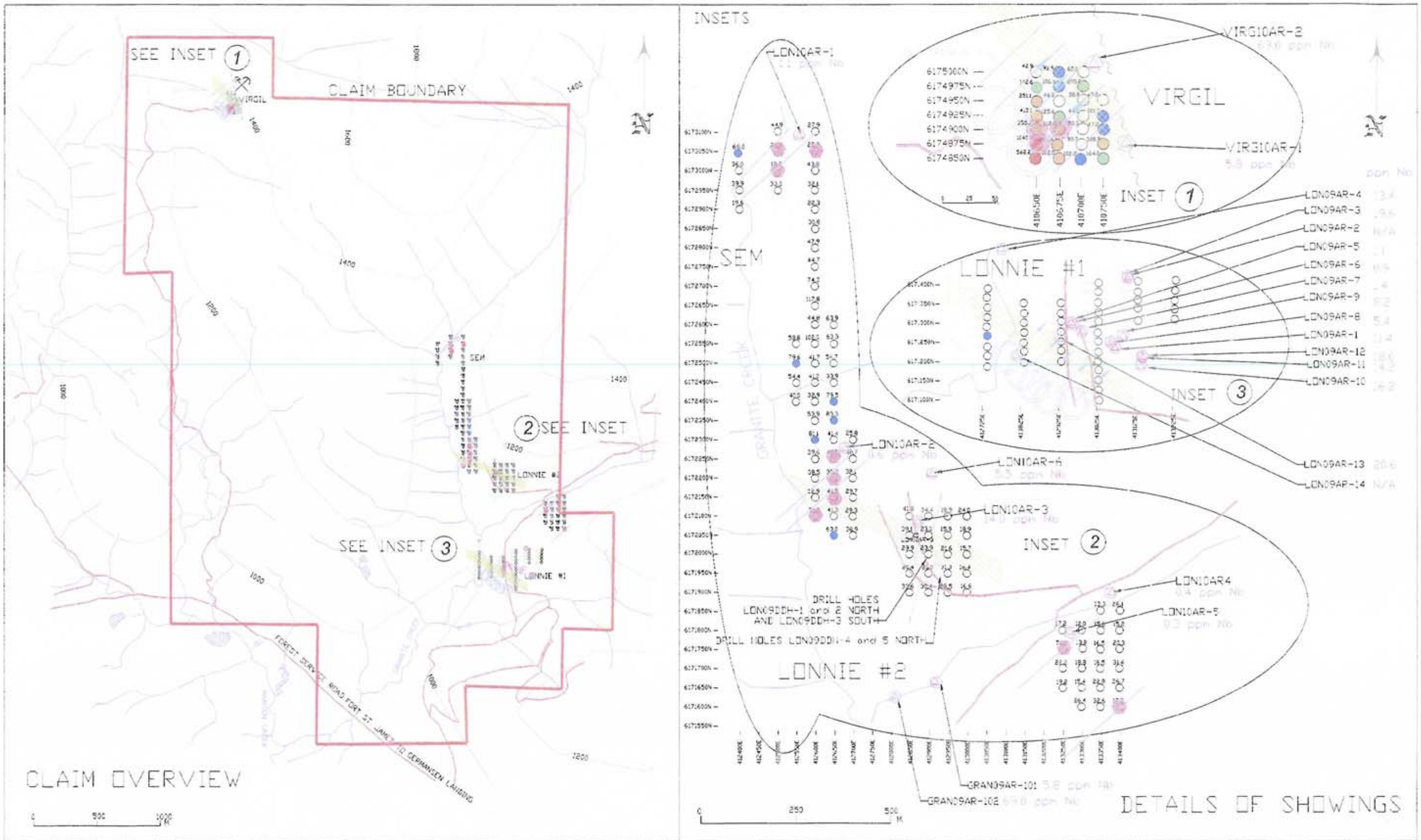
Figure #6 Soils Geochemistry Survey forNiobium with topography. (See Map Packet).

The drill results for the five drill holes drilled on Lonnie #2 are shown in the assay certificates in Appendix II. The assays were for niobium (Nb) only and do not include the other REE elements. These results were considerably lower than expected. Earlier work on the Lonnie #1 (1955) returned values of 0.21% Nb_2O_5. (Not compliant with the NI 43-101 standards). The results from the 2009 summer drilling program and the reconnaissance rock chip sampling on the Lonnie #2 averaged of 22.5 ppm Nb or 0.0032% Nb_2O_5, these results are compliant with NI 43-101 standards.

Soils Geochemistry.

A limited soils geochemistry survey was completed with 191 samples collected. The results of this survey are shown in Figure #6 entitled "Map of the Lonnie Property showing the Soils Geochemistry for Nb and Topography". Three areas were covered: these were the Virgil and the Lonnie #1 and the Lonnie #2 with two lines extending over the area of the SEM gold silver showing. The samples were collected from the "B" soil horizon, at a depth of 20 – 30 cm., and sent to Pioneer Assay laboratory for analysis using their HNO_3-$HClO_4$- HF-HCl digestion with ICP/MS finish. An area of 487,500 square meters were covered by the geochemistry surveys.

A limited number of rock grab samples were also taken. These are shown in Figure #6, (with results for niobium).



THIS MAP IS A COMPILATION OF THE INFORMATION GLEANED FROM THE B.C. MINFILES AND SOILS SURVEYS CONDUCTED BY ANDRIS KIKAUKA P.GEOL AND OBSERVATIONS BY N.L.TRIBE, P.ENG.

SOILS GEOCHEMISTRY

○ 0.0 to 62.5 ppm Nb
● 62.5 to 125.0 ppm Nb
● 125.0 to 250.0 ppm Nb
● 250.0 to 500.0 ppm Nb
● 500.0 + PPM Nb.

⬢ MULTI REE ELEMENT ANOMALY
⬡ ROCK SAMPLE/SPECIMEN
╱ PROPOSED TRENCHING
○ PROPOSED DRILL HOLE

LEGEND

▨ LAKE
∼ CREEK
— ROAD
┏ CLAIM BOUNDARY
1000 CONTOUR IN METERS
▨ CARBONATITE

Figure #6

RARA TERRA CAPITAL CORP.

LONNIE RARE EARTH ELEMENTS PROPERTY

MAP OF THE LONNIE REE PROPERTY
SHOWING THE
SOILS GEOCHEMICAL SURVEY
FOR REE ELEMENTS AND THE TOPOGRAPHY

DATE:- DECEMBER 15 2010	DRAWN BY:- N.L.T.
SCALE:- 1:24000	FILE:- geochem master

N. TRIBE & ASSOCIATES LTD.

Airborne Geophysics

On February 26th, 2011 an airborne Total Field Magnetics geophysical survey was conducted by Precision GeoSurveys Inc. of Vancouver B.C. The magnetometer used was a Scintrex CS3 housed in a 40 foot "stinger" beneath the Bell 206 BIII Jet Ranger helicopter provided by Interior Helicopters Ltd. of Fort St. James. The survey used an AGIS (Airborne Geophysical Information System) unit, coupled to a Pico Envirotec computer, which was mounted in the cockpit. The equipment had a visual readout which enabled the pilot to keep to the survey lines as well as a laser altimeter to provide accurate ground to magnetometer clearance to be later used in the adjustment of the data. The Pico Enviortec computer collected the raw data which was then converted into Geosoft computer files. A base station was set up near the airport to record diurnal variation for final adjustment of the data. The data was then adjusted for noise, diurnal variation, elevation variance, data striping etc and plotted on paper for presentation. This software is also provided by Pico Software.

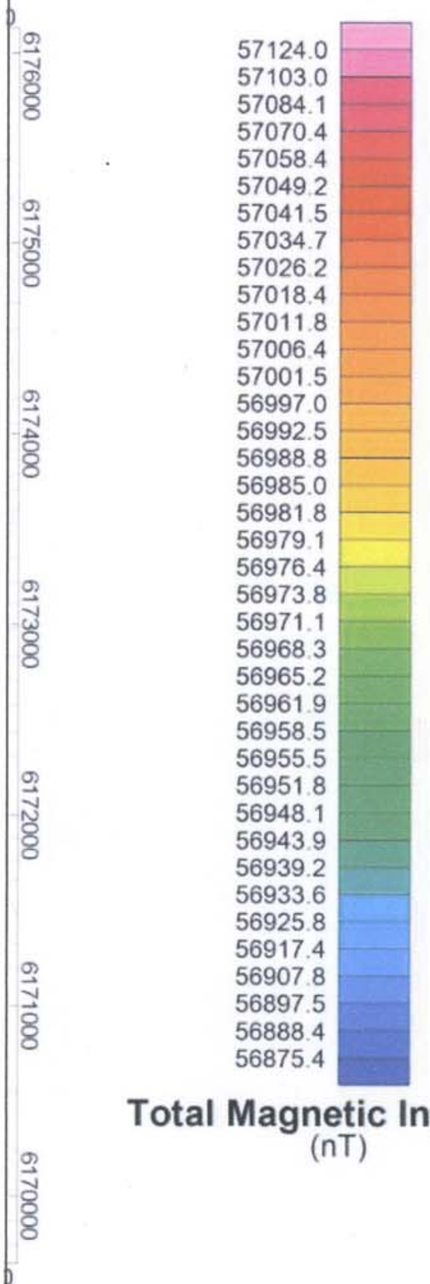
The magnetic results are shown in Figure #9 in color gradation format.

The Total Field Magnetic Intensity is shown in Figure #9 as a multi-colored display with intensities shown on that attached legend. The magnetics can best be interpreted against the regional geology. Figure #9 shows the magnetics overlain on the regional geology map.

The regional geology is trending northwesterly and this can clearly be seen on the magnetic map with the magnetics closely aligned with the geology. The rocks of the north eastern third of the claims are Hornblende Gneiss. The magnetic signature of the gneiss is higher than average magnetic intensities and is presented as reds and oranges on the magnetic map.

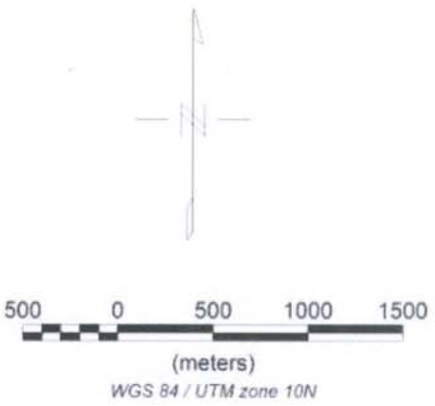
The southwestern third of the claims is underlain by limestones and shales. And these rocks, as expected, show a very low magnetic intensity and are displayed as blues and greens on the magnetic map.

The area of interest, geologically, is the biotite (phlogopite) garnet schist and is that strip of geology extending southeast from the northwest corner of the property to the southeast corner of the property and being 1.5 kilometers wide.



Total Magnetic Intensity
(nT)

- The Total Magnetic Intensity value is the raw mag with a lag correction applied, and then the diurnal variation removed.
- Scintrex CS-3 cesium vapour magnetic sensor used to sample the Earth's magnetic field at 10Hz
- Survey Flown February 26, 2011
- Survey Base: Fort St James, BC
- Topography from Geogratis



Rara Terra Capital Corp.

Lonnie Claims

Total Magnetic Intensity
Created By : Precision Geo Surveys Inc.
March 3, 2011

FIGURE # 9 LEGEND

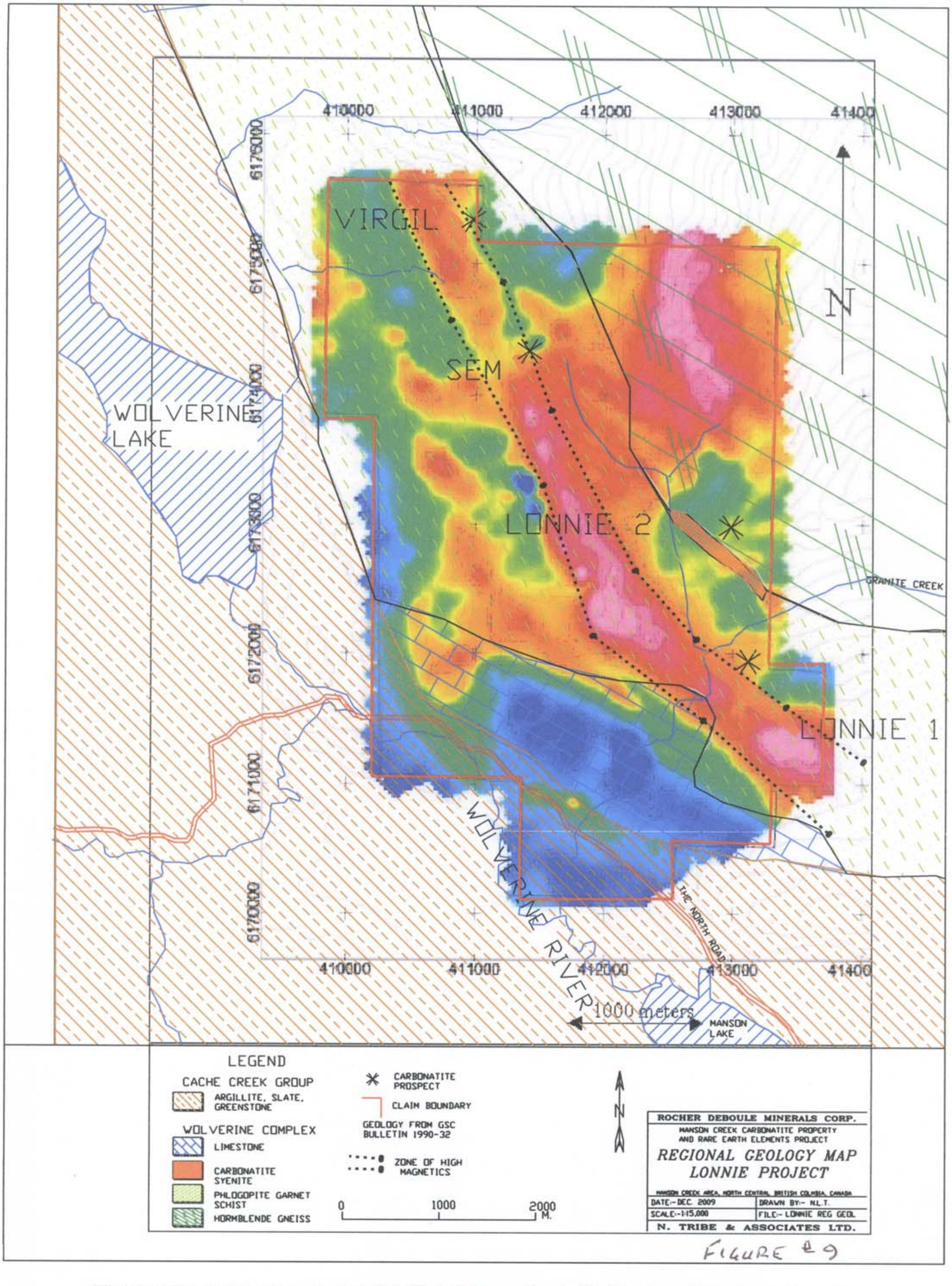


Figure #9 Lonnie Prospect Total Field Magnetics with Regional Geology Overlay.

Concordant with the geology and lying one third south east of the northeast boundary of the schist is a zone of high magnetic intensity. This zone is a strong shear structure and is thought to be the controlling factor for the emplacement of the carbonatites. The Lonnie #1, the SEM and the Virgil showings all lie at the eastern edge of this shear. .The Lonnie #2 is displaced some 400 meters to the northeast.

A less dominant feature of the magnetics is the two small anomalous lows located at 6173300N, 411400E and 617310N, 411470E . These two small anomalies are important because of their isolated nature within the survey. These are not regional features but rather a local response to an intense magnetic variation in the geology at these locations. These lows are adjacent to and on the western edge of the regional shear structure and are considered to represent a concentration of magnetite at this location.

DRILLING

Previous drilling on the Lonnie #1 showing consisted of 3 Xray diamond drill holes drilled in 1955 by Northwestern Explorations (or perhaps Kennco Explorations). In 2009, 5 BQTW diamond drill holes were drilled on the Lonnie #2 showing by Rocher Deboule Minerals Corp. (American Manganese Inc.)

The three, 1979, Xray holes were logged and the logs can be found in Vaillancourt's Assessment Report No. 7515. These logs clearly define the carbonatite zone but no assays are provided.

The five BQTW holes drilled on Lonnie #2, by Rocher Deboule Minerals Corp. (American Manganese Inc.) and the logs with the assays are included as Appendix III. The zone is clearly defined and the assays average 0.0016% Nb. In all 143, core samples were taken with an average of 16 ppm Nb or 23 ppm Nb_2O_5.

DRILL HOLE SUMMARY						
HOLE NUMBER	EASTINGS	NORTHINGS	ELEVATION	AZ.	DIP	LENGTH
LON09DDH-1	413007	6171230	1130.5 m (3709')	30	-50	76.2
LON09DDH-2	413007	6171230	1130.5 m (3709')	0	-90	106.7
LON09DDH-3	413007	6171230	1130.5 m (3709')	210	-50	121.9
LON09DDH-4	413033	6171183	1130,2 m (3708')	0	-90	68.6
LON09DDH-5	413033	6171183	1130,2 m (3708')	30	-50	100.6
			TOTAL METERAGE			474

SAMPLING METHOD AND APPROACH

The diamond drilling was done using BQTW equipment and the core recoveries were good, nearly 100%. The core was split on site and half the core was bagged, tagged, recorded and carried to Pioneer Laboratories in Richmond for analysis. The remainder of the core was returned to the box and stored on site.

The sample width was established at 1.52 meters to give a number of samples for each cut across the sill (8 to 10 samples). The true widths vary from hole to hole as shown on the cross sections.

The core boxes were cross stacked and covered with tarps to protect the core from the weather.

At the Pioneer Laboratories the core was crushed and ground in ring pulverizers in the standard sample preparation process. The samples were then assayed by ICP methods suitable for the detection of rare earth elements.

Fifteen check assay samples were selected at random from the samples prepped by Pioneer and sent to ALS Chemex in North Vancouver, B.C., for analysis by ICP ME-MS81 method with detection limits down to 0.20 ppm Nb.

Background Information and Methodology

The cores, the soils and the rock samples were all handled in the traditional manner by experienced geologists.

The cores were split with a manual screw type chisel splitter in five foot sections, bagged, tagged and transported to the laboratory by the field geologist.

The soils were taken at a depth of 30 cm or the “B” soil horizon, bagged in soil bags, marked with the line and station, and transported to the laboratory by the field geologist.

The rock samples were primarily grab samples from out crops on or near the known showings. These were bagged, tagged and transported to the laboratory by the field geologist. The rock chip sample locations and the assay results for niobium are shown in Figure #6.

SAMPLE PREPARATION, ANALYSES AND SECURITY

The drill core samples were prepped with the standard methods consisting of crushing to minus 4 mm then pulverizing to 90% minus 100 mesh in a ring pulverizer.

The sample was then rolled and a 250 gram portion of the pulps was cut out and sent for analysis. The samples were handled exclusively by the field geologist and the people at the Pioneer Laboratories, 103-2691 Viscount Way Richmond, B.C., Canada, V6V 2R5 under the direction of Mr. Ray Sam.

It is the opinion of this writer that the sampling, preparation and the analytical procedures are adequate.

There is no governing body controling the certicifation of assay labs in Canada. The verification of assays is left to the client. A full coverage of the verification process carried out by this writer is presented under the **“DATA VERIFICATION”** heading, p.32 of this report.

ASSAY CERTIFICATES

The methods used by the laboratories are the accepted standards of the industry and have been cross checked by independent laboratories. See the section entitled “Data Verification”

ONEER LABORATORIES I

#103-2691 VISCOUNT WAY RICHMOND, BC CANADA V6V 2R5

TELEPHONE (604) 231-81

G E O C H E M I C A L A N A L Y S I S C E R T I F I C A T E

CHER DEBOULE MINERALS INC.
ject: Loonie
mple Type: Soils/Cores/Rocks

Analysis by LiBO2 fusions, ICP/MS finished

Analyst
Report No: 2052474
Date: December 14, 2005

EMENT	Ce	Dy	Er	Eu	Gd	Ho	La	Lu	Nd	Pr	Sm	Tb	Th	Tm	U	Y	Yb	Ba	Nb	Rb	Sr	Ta	Zr	Ti
MPLE	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
00E 2100N	189.6	9.7	5.4	2.2	14.1	1.9	99.1	.7	80.1	21.6	13.7	1.8	28.6	.8	7.5 55	54.6	4.6	484.1	41.5	86.5	187.9	1.8	360.6	.401
00E 2125N	138.8	5.3	3.0	1.5	8.1	1.0	56.0	.4	46.5	13.4	7.9	1.0	14.6	.4	4.4 29	29.3	2.7	532.0	43.6	102.1	179.1	1.7	296.1	.381
00E 2150N	101.4	5.6	3.1	1.5	7.7	1.1	52.6	.4	41.2	11.2	7.4	1.0	13.8	.4	5.8 31	31.2	2.7	573.5	29.5	91.5	176.2	1.6	223.5	.345
0E 2175N	356.3	16.6	7.8	2.8	26.9	2.9	174.1	.9	160.7	42.3	26.9	3.5	84.1	1.0	19.5 81	81.1	6.2	382.7	105.8	90.6	170.5	2.4	571.7	.341
0E 2200N	46.1	4.0	2.4	.8	4.2	.8	22.6	.3	19.5	5.3	4.1	.7	9.5	.3	2.4 24	23.7	2.1	408.0	20.8	77.3	125.2	1.7	91.2	.154
0E 2225N	102.7	8.0	4.2	2.3	11.1	1.5	68.9	.5	56.8	15.4	10.6	1.5	12.7	.5	10.1 45	44.7	3.4	515.7	33.5	90.4	196.4	1.4	258.1	.349
0E 2250N	107.7	7.8	4.0	2.3	10.4	1.5	61.9	.5	50.1	13.9	9.9	1.4	11.6	.5	10.5 41	41.1	3.4	542.5	38.0	79.6	196.2	1.5	247.6	.354
0E 2275N	107.2	5.5	3.1	1.5	7.1	1.1	55.1	.4	39.6	11.2	8.9	1.0	13.8	.4	3.3 31	31.2	2.8	631.7	42.9	92.4	175.5	2.1	299.3	.364
0E 2300N	126.3	4.9	3.0	1.5	7.1	1.0	63.6	.4	43.9	12.5	7.1	.9	13.3	.4	3.4 29	28.7	2.8	567.4	53.6	90.8	174.5	1.8	293.8	.430
0E 2100N	115.6	5.5	2.9	1.4	8.3	1.0	54.3	.4	45.0	12.5	8.3	1.1	17.1	.4	6.2 29	29.4	2.6	490.2	21.7	129.1	170.8	1.9	233.6	.327
0E 2125N	121.3	5.0	2.9	1.4	7.5	1.0	56.3	.4	44.9	12.2	7.4	.9	13.9	.4	3.8 28	27.6	2.5	561.6	37.0	107.6	178.6	2.0	238.0	.396
0E 2150N	136.1	6.5	3.6	1.5	9.1	1.2	66.4	.5	53.0	14.8	9.5	1.2	20.8	.5	5.1 36	35.9	3.2	471.4	24.9	111.5	161.3	1.6	261.6	.319
0E 2175N	135.4	24.1	12.2	6.5	31.1	4.5	110.0	1.7	116.4	28.8	26.9	4.3	20.1	1.6	23.1 ##	150.4	10.5	540.8	28.1	122.3	200.9	1.8	174.9	.361
0E 2200N	118.1	5.1	2.9	1.4	7.3	1.0	60.7	.4	42.5	12.4	7.3	.9	13.8	.4	4.5 29	26.8	2.7	491.9	33.8	110.0	307.3	2.0	280.5	.418
0E 2225N	160.0	12.9	5.9	3.5	16.5	2.3	73.6	.7	82.8	19.8	16.5	2.4	17.7	.8	24.5 63	63.3	4.7	510.8	37.4	119.0	196.5	1.5	216.6	.431
0E 2250N	112.7	4.2	2.3	1.2	6.6	.8	49.6	.3	36.8	10.6	6.5	.8	13.0	.3	4.2 22	22.4	2.1	630.2	33.6	117.3	177.2	1.7	266.2	.422
0E 2050N	119.1	5.1	3.2	1.3	6.7	1.0	61.5	.5	39.4	11.3	6.4	.9	11.5	.5	3.1 31	31.0	3.2	647.1	60.5	96.1	186.0	1.8	307.4	.422
E 2075N	116.9	5.4	3.1	1.4	7.8	1.1	54.5	.4	46.4	13.5	7.9	1.0	14.0	.4	3.6 30	30.4	2.8	55[illegible].7	32.3	99.0	188.6	2.1	270.8	.365
E 2100N	124.0	7.9	4.6	2.2	10.9	1.6	66.0	.7	52.4	14.[illegible]	10.2	1.4	15.7	.7	7.1 52	51.7	4.6	51[illegible].4	30.3	90.9	207.2	1.8	339.4	.395
E 2125N	101.3	6.5	3.4	1.7	8.8	1.2	50.2	.4	42.8	11.6	8.3	1.2	13.5	.5	9.0 34	34.2	2.9	534.0	35.2	125.7	261.3	2.2	224.5	.430
E 2150N	123.1	5.9	3.0	1.7	8.7	1.1	64.8	.4	46.4	13.3	8.4	1.1	12.5	.4	8.2 30	30.1	2.5	582.1	45.2	125.1	199.9	1.8	259.3	.456
E 2175N	118.0	6.1	3.5	1.7	8.6	1.2	61.0	.5	44.3	12.7	7.9	1.1	12.8	.5	6.4 35	34.8	3.1	567.0	43.1	108.3	208.9	1.9	315.3	.419
E 2200N	204.9	7.0	3.9	1.8	13.4	1.4	82.5	.6	81.4	19.4	13.3	1.5	28.0	.6	7.0 40	39.5	3.5	620.1	36.1	199.1	217.0	1.8	500.0	.515
E 2000N	128.3	7.0	3.9	1.6	9.9	1.4	66.1	.5	56.8	15.4	9.7	1.4	22.7	.6	5.5 40	39.7	3.3	506.9	31.6	107.0	210.5	1.6	299.8	.342
E 2025N	109.2	5.2	2.8	1.6	7.9	1.1	59.3	.4	45.5	13.0	7.9	1.1	15.2	.4	6.5 28	28.1	2.5	549.6	37.3	106.0	232.6	1.9	310.1	.369
E 2050N	144.5	6.8	3.7	1.8	10.3	1.4	72.4	.5	62.6	17.1	10.5	1.4	21.6	.5	7.3 37	37.0	3.2	559.4	26.7	183.9	177.4	1.7	259.5	.442
E 2075N	148.3	5.5	2.9	1.5	9.1	1.1	82.8	.4	59.7	16.7	9.0	1.2	20.6	.4	4.8 29	29.3	2.6	547.5	45.4	114.9	246.1	1.7	350.1	.375
E 2100N	132.4	6.2	3.5	1.5	9.4	1.3	69.2	.5	55.8	15.4	8.9	1.3	19.4	.5	5.1 35	35.4	3.1	508.8	35.1	136.4	197.2	1.8	289.1	.375
E 2125N	143.3	6.3	3.2	1.6	10.5	1.2	72.4	.5	61.1	17.3	11.0	1.4	24.3	.5	6.4 34	33.5	2.8	495.7	26.4	137.1	177.8	1.8	326.9	.368
E 2150N	119.6	5.5	3.2	1.5	7.9	1.2	67.3	.5	48.9	13.8	7.5	1.1	14.6	.5	6.5 31	31.2	2.8	531.9	41.2	127.7	234.8	1.6	299.2	.391

EMENT AMPLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	pt	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	ppm	Ti %
EMENT MPLE	Le ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
900E 2175N	17.7	1.1	.5	.3	1.4	.2	9.8	1	8.5	2.5	1.7	.2	2.4	1	3.4 6	5.6	.4	168.0	3.7	29.6	93.5	.2	44.1	.075
900E 2200N	114.9	4.6	2.7	1.4	6.6	1.0	60.3	.4	43.7	12.7	6.9	.5	14.0	.4	3.4 26	26.4	2.6	616.0	57.4	103.6	234.3	3.0	365.1	.404
900E 2225N	112.9	4.2	2.3	1.3	7.2	.8	60.2	.4	46.1	13.4	7.6	.5	12.4	.3	4.7 22	22.3	2.1	520.3	34.6	143.6	191.7	1.6	246.5	.352
900E 2250N	151.1	5.8	3.2	1.7	9.5	1.2	75.2	.5	60.6	17.1	9.5	1.3	18.8	.5	7.3 31	31.4	2.9	525.2	44.1	102.6	210.3	1.8	342.8	.365
00E 2275N	141.5	5.7	3.1	1.6	9.4	1.1	73.1	.5	59.6	16.4	9.6	1.2	20.2	.5	5.9 30	29.9	2.8	592.8	40.7	113.5	222.0	2.3	411.6	.404
00E 2300N	128.4	5.4	3.1	1.4	8.7	1.1	61.7	.5	52.4	14.4	8.7	1.1	19.4	.5	6.2 29	29.4	2.8	515.2	56.1	130.0	232.4	2.6	348.2	.484
00E 2200N	121.3	4.7	2.6	1.4	7.8	1.0	68.0	.4	50.7	14.1	7.6	1.0	18.6	.4	4.5 25	24.5	2.3	626.8	39.6	106.1	184.2	1.7	306.9	.420
00E 2225N	208.8	7.8	3.9	2.0	14.4	1.5	94.7	.6	85.5	23.8	14.3	1.6	42.7	.6	7.8 38	38.1	3.2	618.7	48.2	158.1	186.8	2.2	454.7	.568
00E 2250N	130.2	5.2	2.7	1.5	8.7	1.0	57.4	.4	50.6	13.6	8.7	1.1	18.2	.4	5.4 26	25.5	2.4	486.4	36.3	132.6	260.6	1.8	234.1	.593
00E 2275N	84.9	3.9	2.3	1.2	5.8	.8	45.5	.4	35.6	10.0	5.6	.8	11.4	.4	3.3 22	21.6	2.3	536.5	51.3	83.0	223.6	1.6	279.5	.435
0E 2300N	127.8	5.3	3.2	1.4	8.5	1.1	68.5	.5	52.0	14.8	8.0	1.1	17.3	.5	5.1 29	29.0	2.8	557.4	42.9	154.8	202.3	2.2	308.7	.423
0E 2200N	94.3	5.6	3.3	1.4	7.3	1.2	50.4	.5	40.2	11.2	6.6	1.1	13.2	.5	4.1 31	31.4	2.9	598.5	37.4	106.5	226.0	1.7	297.1	.409
0E 2225N	125.5	5.2	3.2	1.4	7.7	1.1	68.2	.5	47.1	13.7	7.4	1.0	16.1	.5	4.8 30	30.0	3.1	544.3	49.8	157.6	193.4	2.5	351.7	.468
0E 2250N	101.9	5.4	3.1	1.4	7.5	1.1	53.7	.5	43.2	11.8	7.2	1.1	14.7	.5	4.0 29	29.3	2.8	492.9	30.6	119.2	210.3	1.6	296.1	.502
0E 2275N	100.7	5.3	3.1	1.4	8.1	1.0	63.6	.4	46.9	12.9	7.5	1.0	14.6	.4	3.9 28	28.4	2.8	538.4	29.1	138.4	262.2	1.7	314.4	.610
0E 2300N	113.7	5.3	2.7	1.6	9.1	1.0	67.3	.4	52.1	14.5	8.7	1.0	18.2	.4	5.8 27	27.2	2.6	557.7	58.4	187.6	241.1	2.6	381.1	.515
51	76.2	4.6	2.5	1.2	6.9	.9	42.2	.3	36.6	10.1	6.4	.9	12.5	.3	2.7 26	25.5	2.3	353.1	21.4	152.8	1057.3	1.6	123.1	.306
52	69.7	4.2	2.3	1.1	6.2	.8	40.8	.3	33.9	9.4	6.2	.8	12.3	.3	2.9 23	23.0	2.1	324.1	16.3	132.1	1531.7	1.7	112.4	.282
53	81.3	4.8	2.6	1.3	6.6	.9	44.1	.4	35.9	10.2	6.7	.9	13.3	.4	3.4 26	26.0	2.4	312.0	20.7	128.2	1047.8	1.6	126.0	.314
54	79.9	5.3	3.0	1.4	7.4	1.0	44.5	.4	38.8	10.7	7.1	1.0	13.5	.4	5.6 29	29.3	2.6	232.2	38.4	131.9	921.3	4.7	137.5	.325
55	10.3	1.4	.6	.1	1.2	.2	5.5	.1	4.8	1.4	1.1	.2	1.9	.1	4.5 8	8.1	.7	50.7	14.5	152.5	274.5	5.7	29.5	.046
56	12.1	1.5	.7	1	1.3	.3	6.6	1	5.7	1.7	1.3	.2	2.3	.1	3.6 9	9.4	1.0	59.7	10.4	197.6	301.2	4.5	44.0	.043
57	74.8	4.4	2.3	1.3	6.6	.8	39.6	[illegible]	34.7	5.4	6.4	.8	12.0	.3	4.2 23	23.3	2.2	330.5	18.8	142.5	913.5	2.1	117.6	.319
58	78.5	4.4	2.6	1.2	[illegible]	.9	42.1	.4	36.8	9.8	6.5	.8	15.0	.4	3.3 24	24.2	2.4	358.7	16.1	173.8	191.5	1.3	205.2	.363
59	38.9	2.5	1.4	.5	3.1	.5	18.6	.2	15.7	4.4	3.0	.4	8.2	.2	2.3 14	14.1	1.3	151.4	14.0	255.2	85.0	4.7	132.2	.175
1	10.2	1.4	.7	.2	1.4	.2	6.6	.1	6.6	1.7	1.3	.2	2.6	.1	3.5 8	7.6	.7	61.0	19.6	237.0	384.5	6.2	39.4	.057
2	53.0	3.4	2.0	1.0	4.8	.7	28.4	.3	26.3	6.8	4.8	.6	9.3	.3	3.4 18	18.1	1.8	367.5	11.7	106.4	763.8	1.3	126.6	.264
3	69.1	4.2	2.3	1.2	5.7	.8	36.8	.3	29.9	8.5	5.6	.7	13.2	.3	3.4 21	21.0	2.1	439.4	11.9	134.7	102.9	1.1	188.4	.357
4	51.9	3.2	1.9	.9	4.7	.6	27.6	.3	24.4	6.5	4.5	.6	11.5	.3	3.6 17	17.0	1.8	398.3	8.5	115.6	104.0	1.0	204.0	.296
5	47.0	3.1	1.8	.9	4.3	.6	24.7	.3	21.2	5.9	4.1	.6	9.4	.3	3.9 16	16.4	1.7	372.5	13.5	193.6	97.7	2.8	150.6	.266
6	73.0	4.7	2.6	1.2	6.5	.9	39.6	.4	34.3	9.2	6.4	.8	13.0	.4	3.7 23	23.2	2.5	202.2	18.6	75.4	834.2	1.4	144.0	.332
7	91.6	5.6	3.1	1.4	8.0	1.1	48.1	.4	43.1	11.6	7.6	1.0	15.6	.4	3.5 28	27.6	2.9	21.1	24.4	12.8	932.8	1.7	157.0	.325
8	65.0	3.9	2.2	1.0	5.6	.8	35.3	.3	30.4	8.4	5.7	.7	11.4	.3	3.0 20	19.7	2.1	96.4	22.9	99.5	751.6	2.7	110.2	.243
9	21.6	1.7	1.0	.3	2.0	.4	11.0	.1	10.8	2.8	1.9	.3	4.7	.1	1.2 9	9.1	.9	124.8	1.5	44.5	23.0	.3	53.2	.100
0	11.2	1.5	.6	.2	1.3	.2	5.4	.1	4.9	1.4	1.2	.2	2.1	.1	16.0 7	7.2	.6	61.2	22.5	301.3	35.8	7.4	36.6	.046
1	24.7	2.2	1.1	.5	2.6	.4	13.7	.2	12.1	3.2	2.4	.4	5.3	.2	19.3 13	12.7	1.1	244.8	15.6	259.1	62.9	3.5	103.3	.137
2	34.3	2.1	1.2	.6	2.8	.4	18.0	.2	15.0	4.1	2.8	.4	6.6	.2	8.7 12	12.0	1.2	312.8	20.7	242.4	87.2	6.2	131.2	.188
3	53.9	3.0	1.7	.8	4.3	.6	26.3	.2	23.4	6.3	4.1	.5	6.9	.2	2.7 16	16.2	1.6	222.2	16.0	57.2	706.3	1.4	74.2	.200
5	84.4	4.8	2.7	1.3	7.2	.9	45.8	.4	39.6	10.4	6.7	.9	12.0	.4	2.8 26	25.6	2.5	275.5	20.2	105.2	1066.5	1.8	122.0	.286

IENT PLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm		Tm m	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppc	Ti %
IENT PLE	ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	n ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
T	56.7	3.4	2.0	1.0	5.2	.7	33.1	.3	26.4	7.5	5.0	.7	9.4	.3	2.2 16	18.3	1.8	278.4	14.5	95.3	1456.8	1.4	91.1	.228
6	79.8	4.8	2.7	1.3	6.9	.9	46.7	.4	39.3	10.5	7.1	.9	13.7	.4	2.7 25	24.9	2.5	320.0	17.3	135.1	1366.0	1.3	108.7	.296
E	83.5	4.7	2.7	1.3	7.0	.9	45.9	.4	38.7	10.7	7.0	.8	13.9	.4	2.6 25	24.5	2.4	309.9	17.2	127.6	1533.8	1.3	111.0	.290
0	81.5	3.9	2.2	1.0	5.5	.7	38.4	.3	31.5	8.6	6.5	.7	10.6	.3	3.6 21	20.5	2.0	274.0	14.4	193.5	1222.5	2.4	94.1	.216
1	81.1	5.4	3.1	1.4	7.6	1.0	55.9	.4	43.8	11.5	7.7	1.0	15.7	.4	3.1 28	27.7	2.9	387.6	18.4	130.0	1223.1	1.4	142.6	.314
2	77.1	4.4	2.4	1.2	6.4	.8	45.2	.3	34.1	9.6	6.2	.8	12.2	.3	3.6 23	22.8	2.2	290.4	25.6	157.3	848.3	4.9	110.1	.265
3	82.3	4.5	2.5	1.3	6.6	.9	43.7	.3	35.1	9.8	6.4	.8	12.1	.4	2.8 23	23.2	2.3	328.8	17.5	128.0	1219.5	1.4	121.9	.288
4	79.0	5.1	2.8	1.3	6.8	1.0	46.1	.4	36.6	10.1	6.8	.9	12.8	.4	4.2 26	26.2	2.7	366.0	20.1	157.8	1063.6	4.1	106.3	.273
5	48.1	3.2	1.8	.9	4.2	.6	25.9	.2	21.2	5.7	4.1	.6	8.8	.3	2.2 16	16.1	1.6	228.8	10.6	121.9	1180.2	1.6	75.7	.374
5	64.3	3.9	2.2	1.2	5.6	.8	33.8	.3	28.5	7.6	5.4	.7	9.3	.3	2.6 19	19.2	1.9	273.1	16.1	138.5	1413.7	3.0	88.9	.310
	83.8	4.9	2.7	1.4	7.3	.9	44.8	.4	38.0	10.3	6.9	.9	12.5	.4	2.8 25	24.9	2.5	340.9	19.3	199.4	896.5	1.6	121.4	.389
	70.3	4.0	2.3	1.1	5.7	.8	36.9	.3	30.2	8.3	5.4	.7	10.1	.3	3.3 21	20.6	2.1	341.6	22.2	160.3	1185.2	4.6	102.6	.247
	52.6	3.4	1.8	1.2	4.9	.6	28.5	.2	25.0	6.5	4.7	.6	8.2	.3	3.3 17	16.6	1.7	292.4	16.6	127.4	1129.6	2.5	83.1	.197
	76.8	4.3	2.4	1.7	6.6	.8	43.5	.3	36.5	9.8	6.7	.8	11.8	.3	3.1 21	21.2	2.1	377.2	20.9	136.2	734.3	2.0	106.0	.310
	54.1	2.9	1.6	1.7	4.2	.5	27.1	.2	22.4	6.0	4.0	.5	8.6	.2	5.4 14	14.2	1.5	235.7	11.9	224.1	229.3	2.6	138.3	.210
	76.1	4.0	2.1	1.2	6.2	.7	44.1	.3	36.0	9.6	6.3	.8	13.2	.3	2.6 19	19.1	2.0	356.7	13.0	138.8	324.7	1.1	151.0	.295
	70.7	3.5	2.0	1.1	5.8	.7	34.2	.3	31.1	8.0	5.4	.7	12.6	.3	3.2 20	20	1.9	366.1	12.7	134.7	288.4	1.0	132.1	.322
	1.9	1.2	.5	.1	1.1	.2	7.0	.1	3.2	.9	.8	.2	3.0	.1	1.8 7	7.4	.5	71.0	8.5	211.0	317.5	2.6	24.0	.010
	32.8	2.2	1.2	.6	3.2	.4	17.2	.2	15.4	4.1	2.9	.4	5.4	.2	2.8 13	12.7	1.1	153.7	18.1	125.7	989.8	3.8	73.7	.156
	40.8	2.4	1.4	1.0	3.6	.5	22.0	.2	19.3	5.0	3.4	.5	7.3	.2	2.6 14	13.9	1.2	323.8	11.8	77.7	453.3	2.6	80.2	.224
	41.4	2.2	1.2	.6	3.7	.4	21.7	.2	18.8	4.9	3.3	.4	8.6	.2	8.1 12	12.4	1.1	417.8	9.5	217.4	106.6	3.0	110.3	.210
	26.9	1.7	.9	.4	2.5	.3	11.2	.1	10.2	2.6	2.0	.3	4.2	.1	10.6 9	9.4	.8	312.2	12.5	248.6	112.3	6.1	68.2	.110
	49.9	3.1	1.8	.9	5.0	.6	26.9	.3	24.5	6.4	4.5	.6	9.7	.3	5.9 16	17.8	1.7	345.8	10.7	110.5	983.5	1.2	116.0	.270
	71.1	4.0	2.4	1.0	6.1	.8	35.1	.4	31.2	8.3	5.5	.8	11.0	.4	2.8 22	22.3	2.2	35.4	18.3	32.2	944.8	1.4	139.0	.312
	76.4	4.6	2.7	1.2	7.1	[illegible]	41.8	.4	36.5	9.7	6.3	.9	13.0	.4	[illegible] 25	25.1	2.4	38.0	20.5	15.5	1022.1	1.4	150.7	.352
	71.8	4.2	2.4	1.1	6.8	.8	39.7	.4	34.1	9.0	5.9	.8	12.3	.4	4.4 23	22.8	2.2	113.8	21.5	23.7	932.6	3.0	121.2	.305
	77.9	4.9	2.8	1.3	7.6	1.0	43.5	.4	37.4	9.9	6.7	.9	13.7	.4	4.4 26	26.4	2.7	73.2	29.3	73.2	697.3	2.3	187.4	.351
	4.7	.8	.4	.1	1.0	.1	4.8	.1	4.3	1.0	.8	.1	1.9	.1	2.0 4	4.3	.4	82.9	56.4	447.1	57.6	48.0	28.1	.044
	77.5	3.7	2.1	1.1	6.2	.7	34.5	.3	30.9	8.4	5.5	.7	11.3	.3	5.0 19	18.8	1.9	349.0	22.7	367.0	70.9	4.1	141.1	.394
	8.6	1.2	.6	.1	1.2	.2	5.8	.1	4.6	1.3	1.0	.2	1.9	.1	3.4 7	7.1	.8	46.2	20.1	304.5	16.2	6.5	40.6	.042
	100.2	5.6	3.3	1.6	8.7	1.2	45.4	.5	42.4	11.4	7.6	1.0	13.1	.5	3.7 31	30.8	3.0	310.0	18.8	285.5	120.3	1.4	163.4	.510
	82.4	4.2	2.3	1.4	7.3	.8	43.3	.3	36.4	10.2	6.6	.8	12.1	.3	4.8 22	21.6	2.1	341.2	19.1	219.0	82.7	2.5	154.6	.435
	89.8	4.1	2.2	1.4	7.5	.8	49.5	.3	38.9	10.7	6.9	.8	12.8	.3	3.9 21	20.5	1.9	395.1	21.5	229.7	72.3	3.5	145.0	.430
	32.7	2.0	1.0	.5	2.9	.4	16.3	.1	13.8	3.8	2.6	.4	4.9	.1	2.2 10	10.3	.9	155.0	21.2	308.4	30.3	5.1	65.0	.155
	1.3	1.0	.4	<0.1	.6	.2	1.8	.1	1.5	.4	.4	.1	1.0	.1	3.0 6	5.5	.4	4.2	20.0	386.1	8.1	6.3	22.1	.006
	11.3	1.2	.5	.1	1.1	.2	5.1	.1	5.0	1.3	1.0	.2	2.1	.1	5.3 7	6.9	.5	49.3	15.3	339.2	18.7	5.9	38.8	.047
	6.8	1.2	.5	.1	1.1	.2	5.4	.1	4.0	1.2	.9	.2	1.7	.1	3.5 7	7.4	.5	51.5	16.3	369.9	25.4	4.7	31.9	.024
	25.3	1.9	.9	.3	2.4	.3	12.0	.1	10.2	3.0	2.2	.3	3.7	.1	5.4 11	10.5	.8	154.7	15.2	329.0	49.3	7.4	57.9	.099
	35.5	2.1	1.1	.7	3.1	.4	18.6	.2	16.8	4.4	3.0	.4	5.5	.2	2.8 11	11.3	1.0	160.1	15.1	234.3	75.7	5.0	91.6	.238
	90.1	7.7	4.1	2.2	10.9	1.5	46.5	.6	45.7	11.8	9.5	1.4	13.4	.6	4.4 43	43.2	3.6	185.4	20.7	136.7	123.8	2.1	199.1	.679

EMENT MPLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Hf	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	pp	Ti %
EMENT MPLE	Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
1020	16.8	1.1	.5	.2	1.4	.2	6.2	.1	6.2	1.5	1.2	.2	2.1	.1	5.0 5	6.0	.6	46.5	16.1	266.1	25.4	6.5	30.7	062
1021	92.9	5.4	3.0	1.6	8.5	1.0	44.7	.4	41.6	11.1	7.5	1.0	13.4	.4	4.1 28	28.0	2.7	343.7	17.4	213.8	105.6	1.5	177.6	551
1022	50.6	3.7	1.8	.9	5.0	.7	26.7	.3	24.0	6.5	4.6	.7	7.7	.3	8.3 19	18.1	1.6	212.4	14.3	154.5	160.5	3.2	91.2	238
1023	9.0	.7	.3	<0.1	.6	.1	1.4	<0.1	2.0	.5	.5	.1	.6	.1	1.6 4	4.0	.3	57.4	2.4	168.5	89.1	1.2	15.1	006
1024	16.5	1.0	.4	<0.1	.9	.2	2.7	.1	2.9	.7	.6	.2	1.2	.1	4.1 5	5.4	.4	27.6	10.0	331.7	21.4	4.4	25.9	010
025	5.0	.6	.3	.1	.6	.1	2.0	<0.1	1.7	.5	.5	.1	1.3	.1	28.1 5	4.6	.3	28.0	13.0	133.5	19.8	5.9	20.4	013
026	106.2	5.4	2.7	1.6	8.9	1.0	54.5	.4	50.2	13.1	8.8	1.1	16.6	.4	6.1 24	24.2	2.4	370.0	26.0	283.2	91.7	7.1	168.2	498
027	111.9	5.4	2.8	1.8	9.4	1.0	60.2	.4	52.0	14.0	8.9	1.1	17.4	.4	6.3 24	24.0	2.3	359.6	20.5	178.6	76.6	2.1	234.2	613
028	100.6	5.3	2.7	1.8	8.8	1.0	51.9	.4	47.5	12.4	8.5	1.1	15.5	.4	10.7 23	23.4	2.3	364.9	17.7	149.3	93.6	1.4	165.7	538
129	66.7	3.8	1.9	1.3	5.9	.7	34.4	.3	31.2	8.3	5.9	.7	10.5	.3	4.8 17	17.3	1.7	486.7	14.7	139.6	377.5	1.2	133.2	339
130	42.2	2.0	1.0	.4	2.3	.4	11.4	.1	11.9	2.9	2.1	.3	4.2	.2	13.9 10	10.0	1.0	91.9	19.1	252.1	32.8	6.5	56.6	151
131	97.6	4.7	2.4	1.4	8.0	.8	47.7	.3	42.6	11.5	7.5	.9	14.4	.3	10.2 21	21.1	2.0	370.9	22.6	331.4	86.3	4.5	110.7	364
34	5.6	.7	.4	1	.6	.1	3.0	.1	2.6	.6	.6	.1	.7	.1	9.4 4	4.4	.4	46.6	14.5	131.8	414.2	8.3	11.2	032
35	65.9	4.6	2.5	1.2	6.9	.9	43.2	.4	36.1	10.0	6.6	.9	13.8	.4	6.1 21	20.7	2.2	283.6	31.7	272.4	413.4	6.0	116.3	282
36	86.0	5.2	3.0	1.4	7.7	1.0	45.3	.5	35.7	10.5	6.9	.9	13.6	.5	6.9 25	25.1	2.9	268.5	26.7	152.4	756.1	3.3	112.2	292
37	58.1	3.9	2.3	1.0	5.2	.8	35.6	.3	28.4	8.0	5.2	.7	10.5	.3	6.7 23	22.8	2.1	180.6	17.8	75.6	1251.2	2.9	94.3	254
38	77.0	4.3	2.4	1.1	5.9	.9	42.8	.4	34.2	9.4	6.0	.9	12.5	.4	3.0 24	23.5	2.1	288.5	19.2	94.4	1618.4	2.1	116.6	271
39	116.6	4.9	2.8	1.4	7.3	1.0	50.9	.4	43.9	11.1	7.0	1.0	13.9	.4	2.7 28	27.5	2.4	311.1	21.7	140.7	1539.4	2.0	172.4	321
40	99.9	4.3	2.5	1.0	6.1	.9	40.2	.4	36.1	9.1	5.8	.8	11.5	.4	6.4 24	24.4	2.2	244.6	22.6	150.3	1327.3	3.5	148.6	280
41	73.1	4.3	2.5	1.1	6.0	.9	38.6	.4	34.1	9.0	5.7	.8	12.1	.4	3.6 24	24.4	2.3	259.9	17.3	121.0	1266.1	2.1	122.9	292
12	78.8	4.8	2.7	1.3	6.7	1.0	43.6	.4	37.8	9.9	6.5	.9	14.4	.4	2.7 28	27.7	2.5	264.8	16.1	113.2	1205.3	2.0	138.0	.308
13	73.9	4.6	2.7	1.2	6.2	1.0	40.7	.4	34.7	9.2	6.2	.9	13.0	.4	3.4 27	26.5	2.5	266.9	21.3	119.4	1260.6	2.1	117.8	.309
4	92.5	4.9	2.7	1.2	7.0	1.0	48.7	.4	39.5	10.4	6.7	1.0	15.8	.4	3.2 27	26.9	2.6	331.8	30.2	[illegible]	1090.2	3.0	136.7	.330
5	68.6	3.9	2.2	1.0	5.6	.8	36.1	.3	29.3	8.4	5.4	.8	10.5	.3	2.7 20	20.2	1.5	215.8	15.6	142.6	1197.4	1.3	96.5	.309
6	76.4	4.8	2.6	1.2	7.0	1.0	44.7	.4	39.3	10.1	6.4	.9	14.5	.4	2.9 26	25.8	2.2	367.9	16.2	140.8	1745.9	1.2	127.0	.294
7	51.4	3.3	1.9	.8	4.4	.7	23.9	.3	19.5	5.4	4.0	.6	7.8	.3	1.5 20	19.5	1.7	254.2	10.6	124.7	1466.6	.8	89.2	.419
8	77.4	4.4	2.3	1.4	6.3	.9	42.5	.3	37.2	9.8	6.4	.9	11.1	.3	3.0 22	22.0	1.9	405.0	13.0	143.6	377.1	1.1	113.1	.384
9	86.6	4.0	2.2	1.1	6.3	.8	41.4	.3	39.3	9.5	6.2	.8	13.0	.3	3.3 20	20.4	2.0	354.5	12.4	122.3	291.7	1.0	163.9	.361
0	62.6	3.7	2.2	.9	5.2	.8	32.6	.3	30.9	7.6	4.9	.7	12.0	.3	2.7 20	19.8	1.9	311.8	9.5	108.2	146.5	.8	190.7	.335
1	105.1	3.6	2.0	.9	5.7	.7	36.8	.3	34.8	8.2	5.2	.7	12.8	.3	5.8 19	18.5	1.7	343.1	14.0	164.6	90.4	2.2	177.8	.346
2	72.5	4.2	2.2	1.1	6.1	.9	41.0	.4	37.2	9.5	6.1	.8	12.5	.3	4.1 21	21.2	2.0	480.6	14.8	185.0	377.6	1.7	143.6	.381
3	81.1	4.8	2.7	1.2	6.8	1.0	46.2	.4	41.5	10.5	6.7	.9	14.4	.4	3.0 24	24.3	2.4	342.1	22.5	153.6	1535.2	2.2	142.6	.367
4	88.9	5.4	3.1	1.3	7.8	1.1	47.4	.5	43.9	11.1	7.3	1.1	15.1	.5	4.1 29	28.9	2.8	340.9	24.8	170.8	1309.0	4.2	164.7	.364
5	64.7	3.6	2.1	1.0	5.2	.8	29.8	.3	27.4	7.0	4.8	.7	8.7	.3	3.4 20	19.7	1.9	329.5	15.7	110.0	1301.2	1.7	110.7	.265
3	46.8	2.8	1.6	.7	4.0	.6	25.0	.2	21.9	5.8	3.9	.6	7.8	.2	5.2 15	15.2	1.5	291.2	10.5	116.6	1274.5	1.6	106.0	.228
	32.3	2.4	1.2	.4	2.8	.5	16.5	.2	11.7	3.3	2.5	.5	5.5	.2	12.0 12	11.7	1.0	137.8	13.4	74.9	418.9	4.1	84.0	.126
	55.2	3.1	1.8	.9	4.5	.7	26.9	.3	22.0	6.2	4.2	.6	10.3	.3	4.9 16	16.3	1.6	408.8	7.6	103.2	157.5	.8	181.3	.298
	53.8	3.2	1.7	.9	4.6	.6	26.7	.3	24.0	6.9	4.5	.7	9.9	.3	5.0 15	14.8	1.6	249.5	18.0	202.9	43.8	4.6	107.7	.275
	66.1	4.9	2.7	1.3	6.5	1.0	39.2	.4	35.8	9.8	6.3	.9	12.3	.4	11.9 27	26.6	2.4	253.3	24.5	222.6	66.2	4.0	176.0	.524
	66.0	4.0	2.2	1.1	6.0	.8	33.2	.3	32.4	8.6	5.4	.8	10.7	.3	11.5 22	21.7	1.9	226.8	19.4	269.8	64.0	4.1	121.3	.349

MENT MPLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	pp	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	ppm	Ti %
MENT IPLE	ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
62	54.2	1.0	.4	<0.1	1.2	.2	3.2	.1	3.1	.7	.8	.2	1.6	.1	2.6 6	6.0	.4	24.2	18.3	317.7	34.8	5.2	31.6	.012
63	33.9	.9	.4	<0.1	.8	.2	3.3	.1	1.4	.6	.5	.2	1.5	.1	6.3 6	5.8	.4	60.5	14.0	239.5	134.6	4.4	32.0	.008
64	59.3	1.4	.7	.2	1.9	.3	7.7	.1	7.9	2.1	1.4	.3	3.5	.1	6.4 6	7.7	.6	93.7	15.9	281.0	45.7	4.0	46.9	.073
66	58.5	2.6	1.4	.7	4.0	.6	25.5	.2	21.9	6.5	3.9	.5	8.8	.2	3.5 13	13.4	1.3	206.5	14.5	90.3	555.9	1.7	90.4	.196
67	96.8	4.5	2.6	1.1	6.8	1.0	36.1	.4	35.5	9.4	5.6	.9	12.7	.4	5.5 24	23.5	2.4	161.4	23.4	131.8	1137.7	4.8	118.3	.260
68	77.8	4.3	2.4	1.1	6.3	.9	36.6	.4	35.3	9.1	5.8	.8	12.7	.4	4.3 22	22.3	2.2	255.5	16.9	130.6	1328.3	2.3	106.1	.249
69	39.0	2.5	1.3	.5	3.4	.5	19.5	.2	17.0	4.6	3.1	.5	7.4	.2	5.2 13	13.0	1.2	93.4	19.5	198.6	400.2	5.3	74.5	.125
70	83.7	4.1	2.3	1.1	6.0	.9	37.2	.3	34.8	9.1	5.6	.6	13.3	.3	3.5 21	21.4	2.1	271.1	16.9	130.2	1324.3	1.7	108.3	.278
71	51.7	3.5	1.9	1.0	4.7	.7	28.2	.3	24.3	7.0	4.7	.7	9.6	.3	3.3 17	17.2	1.7	258.3	20.2	173.6	1170.4	3.3	89.2	.298
72	84.4	4.2	2.2	1.3	6.4	.8	40.7	.3	37.5	10.4	6.5	.8	14.3	.3	4.9 20	20.0	2.0	360.9	12.4	210.1	271.1	1.5	128.7	.304
3	108.1	4.7	2.5	1.2	7.0	.9	40.6	.4	37.9	10.0	6.4	.9	14.4	.4	4.3 22	22.3	2.3	386.2	21.0	212.3	1209.2	2.4	134.1	.279
4	64.6	4.3	2.4	1.1	6.0	.9	35.8	.4	34.4	9.1	5.8	.8	12.9	.4	4.1 22	21.5	2.2	301.3	27.4	173.9	1012.9	4.7	143.1	.258
5	68.1	3.7	2.2	1.0	5.4	.8	29.6	.3	29.3	7.5	5.0	.7	10.4	.3	4.0 18	18.0	1.9	333.0	18.2	137.3	1073.1	4.7	140.9	.250
6	51.1	3.1	1.6	.7	4.1	.6	25.5	.2	21.0	6.2	3.9	.6	8.8	.3	6.1 15	15.1	1.5	178.2	26.9	126.6	555.3	4.8	77.4	.186
7	150.7	4.7	2.5	1.5	8.2	.9	48.5	.4	44.5	11.5	7.2	1.0	17.7	.4	3.9 22	21.6	2.2	664.6	12.1	162.3	124.8	1.1	179.5	.365
8	62.4	3.9	2.2	1.1	5.8	.8	35.5	.3	32.9	9.0	5.7	.8	15.9	.3	4.7 19	18.5	2.1	442.5	15.9	155.8	119.3	2.7	191.7	.319
9	54.7	3.3	1.9	.9	4.7	.7	27.6	.3	25.1	7.0	4.7	.7	12.5	.3	3.7 16	15.7	1.6	501.1	10.5	152.2	122.1	1.2	219.8	.336
0	64.7	3.4	1.9	.9	5.2	.7	27.5	.3	24.3	7.0	4.6	.7	12.5	.3	6.0 16	16.3	1.7	487.0	15.2	192.3	134.2	2.7	195.6	.294
1	6.2	.9	.4	.1	.7	.2	3.5	.1	2.8	.9	.8	.2	1.5	.1	13.0 6	5.5	.4	113.7	8.4	107.2	339.5	4.4	25.3	.030
1	63.4	3.4	1.9	.8	4.4	.7	28.3	.3	24.2	6.6	4.5	.7	9.6	.3	6.3 19	18.7	1.7	42.3	21.4	103.0	557.9	6.3	103.4	.192
	82.2	4.5	2.7	1.1	6.0	1.0	40.2	.4	32.9	9.1	6.0	.9	12.9	.4	6.1 26	26.2	2.6	113.5	26.1	152.6	771.3	5.2	127.1	.255
	71.3	3.5	1.9	1.0	5.1	.7	33.5	.3	28.4	7.8	5.3	.7	12.7	.3	5.9 20	19.6	1.8	393.6	17.0	194.6	222.9	3.2	161.1	.295
	76.1	4.4	2.8	1.0	5.5	1.0	35.2	.4	30.5	8.1	5.6	.8	12.5	.4	3.6 26	25.5	2.7	405.4	13.1	137.1	71.5	1.7	170.4	.346
	81.5	3.7	2.1	1.0	5.8	.8	41.4	.3	31.6	[illegible]	6.0	.8	17.0	.3	5.3 20	19.9	2.0	316.0	11.7	134.2	71.6	2.2	176.3	.255
	20.2	1.4	.7	.1	1.1	[illegible]	5.2	.1	3.7	1.0	.9	.2	2.1	.1	[illegible]	8.8	.9	94.6	18.1	140.1	32.2	6.7	32.7	.039
	65.5	3.3	1.7	.9	4.7	.7	32.7	.3	26.1	7.2	5.1	.7	12.7	.3	8.9 17	16.9	1.5	769.5	14.2	147.3	121.1	2.5	142.2	.282
	72.5	3.4	2.0	1.0	5.0	.7	33.1	.3	27.1	7.5	5.1	.7	13.1	.3	3.0 18	17.8	1.8	436.9	9.8	122.0	93.5	.9	180.0	.300
	6.4	1.0	.4	<0.1	.6	.2	2.7	.1	1.5	.5	.5	.2	1.6	.1	31.9 6	5.7	.4	36.5	19.7	308.5	37.1	6.3	24.2	.012
	44.5	2.4	1.4	.8	3.4	.5	22.5	.2	18.7	5.1	3.7	.5	8.4	.2	2.5 13	12.7	1.4	1130.1	10.7	127.9	151.3	1.7	107.6	.202
	2.8	.9	.4	.1	.6	.2	4.1	.1	2.3	.7	.6	.2	1.5	.1	16.6 5	5.3	.4	55.7	21.5	299.2	38.9	8.8	14.8	.017
AR-1	65.1	3.2	1.8	.9	4.6	.7	33.0	.3	24.5	6.9	4.5	.7	11.1	.3	2.2 18	17.6	1.7	243.7	11.4	70.6	1597.7	1.0	65.9	.194
AR-3	81.6	4.7	2.8	1.1	6.0	1.0	38.9	.4	32.0	8.9	6.1	.9	13.0	.4	3.4 26	25.6	2.6	296.2	19.6	90.4	1443.1	1.3	129.7	.271
AR-4	5.1	1.6	.9	<0.1	.7	.3	3.7	.2	1.8	.6	.7	.2	1.3	.2	3.7 10	10.4	1.5	35.2	13.4	293.9	32.8	3.4	45.8	.006
AR-5	6.1	.7	.3	.3	1.1	.1	6.8	<0.1	4.6	1.2	1.1	.1	.3	<0.1	1.0 4	4.1	.2	17.3	1.1	3.7	817.0	<0.1	3.4	.051
AR-6	2.2	.5	.3	.2	.5	.1	6.4	<0.1	2.3	.6	.5	.1	.3	<0.1	.5 4	3.6	.2	15.7	.9	3.0	728.3	<0.1	2.5	.048
AR-7	15.7	1.1	.6	.5	1.4	.2	7.7	.1	4.9	1.2	1.3	.2	.4	.1	1.1 7	6.7	.6	22.7	1.4	18.3	280.6	.1	7.1	.057
AR-8	24.3	1.5	.9	.3	1.9	.3	13.2	.1	10.8	2.9	2.1	.3	4.0	.1	2.2 8	7.8	.8	109.6	5.4	30.5	2270.5	.4	51.2	.110
AR-9	55.0	2.4	1.4	.7	3.4	.5	20.8	.2	18.0	5.1	3.5	.5	7.8	.2	4.7 12	11.5	1.3	20.4	8.2	3.2	948.0	.7	150.0	.145
AR-10	87.7	5.7	3.2	1.1	7.1	1.1	43.0	.4	34.6	9.6	6.3	1.0	13.3	.4	2.4 33	32.6	2.9	169.7	16.2	25.3	583.5	2.0	113.7	.318
AR-11	64.2	3.8	2.2	.9	5.1	.7	33.0	.3	25.9	7.4	5.0	.7	9.8	.3	2.8 22	21.5	1.9	429.1	14.2	83.4	1194.9	3.6	110.6	.261
AR-12	68.1	3.7	2.1	.8	5.3	.7	31.1	.3	27.7	7.4	5.1	.7	9.4	.3	1.8 21	20.5	1.9	144.2	18.0	32.5	1314.9	1.4	93.1	.346
AR-13	93.4	5.1	2.9	1.2	7.2	1.0	49.2	.4	42.3	11.0	7.3	.9	15.2	.4	3.1 28	27.9	2.5	394.9	20.6	142.7	1316.3	1.5	130.3	.327

N. L. TRIBE

DATA VERIFICATION

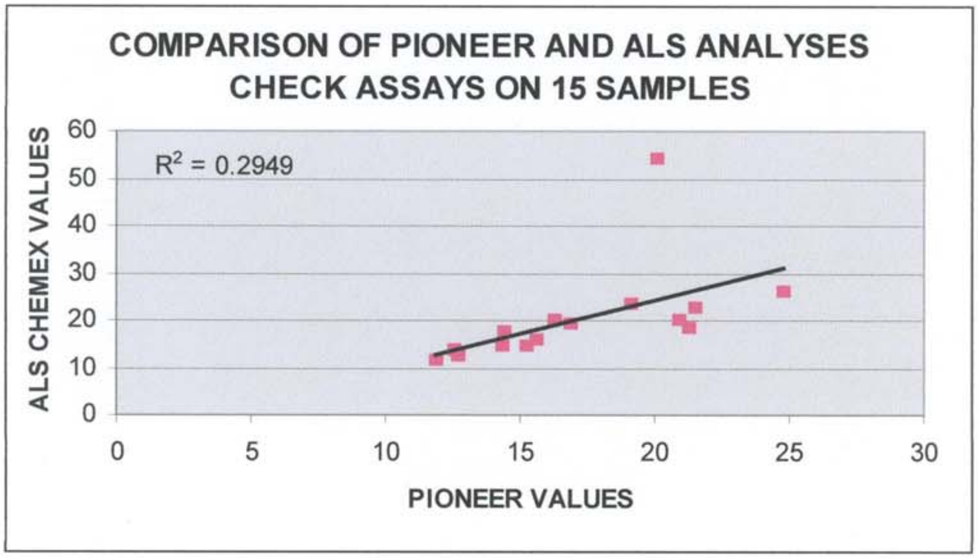
Table III: Lonnie Deposits Check Assays

STATISTICAL ANALYSES OF CHECK ASSAY

RESULTS OF THE LONNIE #2 SAMPLING

REGRESSIONS ANALYSIS

		PIONEER		ALS
257953		20.9		19.9
257963		11.9		11.6
257971		15.6		15.8
257980		14.4		17.6
257993		12.7		12.2
258000		12.5		13.8
258006		20.1		53.9
258016		16.3		20.0
258022		14.3		14.5
258030		19.1		23.2
258043		21.3		18.2
258054		24.8		26.1
258068		16.9		19.2
258080		15.2		14.6
258093		21.5		22.4
	SUM	257.5	SUM	303.0
	AVE.	17.17	AVE	20.20
DIFFERENCE			+	15.0%
R SQ.		0.2949	R	54%
SLOPE OF LINE IS 0.833				
INDICATING A BIAS OF 16.6%				



The samples were analyzed by ICP analysis. These methods are considered adequate for preliminary exploration sampling.

These results indicate a bias on the high side for the ALS analyses (or a bias on the low side for the Pioneer Laboratory) of 15% based on an arithmetical average and of 16.6 % based on a regression analysis using the distance squared method.

The results above show that the check assays returned grades approximately 15% higher than the routine assaying. Considering the limited number of check assays and the low values encountered this is not considered significant.

MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing or metallurgical testing was done on the carbonatite.

RARA TERRA CAPITAL CORPORATION

LONNIE #1

CROSS SECTIONS

SECTION N30DEG EAST LOOKING NORTHWEST

LONNIE #1 SHOWINGS ARE IN THE BEETLE KILL FOREST ALONG THE RIDGE IN THE CENTER.

GRANITE CREEK, MANSON CREEK AREA, OMINICA MINING DISTRICT, B.C.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
N. L. TRIBE

MAS	MAS	MYLONITIZED ALKALI SYENITE
ASY	ASY	ALKALI SYENITE
SY	SY	SYENITE
MON	MON	MONZONITE
AMN	AM	APILITIC MONZODIORITE
MD	MD	MONZODIORITE
MBS	MBS	MYLONITIZED BIOTITE SOVITE
BSV	BS	BIOTITE SOVITE
FN	FN	FENITE
ASV	AS	AEGIRINE SOVITE
SV	SV	SOVITE
SVS	SS	SOVITE SCHIST
WMS	MS	WOLVERINE MICA SCHIST
GN	HBG	HORNEBLEND GNEISS
ARG	ARG	ARGILLITE
QTZ	▭	QUARTZ
BGS	BGS	BIOTITE GARNET SCHIST
BS	BSS	BIOTITE SCHIST
	═	ROAD
	─	CREEK
	─	CONTOUR
	⚲	OLD DRILL HOLE
	⚲	NEW DRILL HOLE
	‐‐‐	FAULT

RARA TERRA CAPITAL CORPORATION

LONNIE #1 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #1
CROSS SECTION COVER

GRANITE CREEK AREA, OMINICCA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:-DECEMBER 15,2010 | DRAWN BY:- N.L.T.
SCALE:-1:500 | FILE:- LONNIE #1 COVER

N. TRIBE & ASSOCIATES LTD.

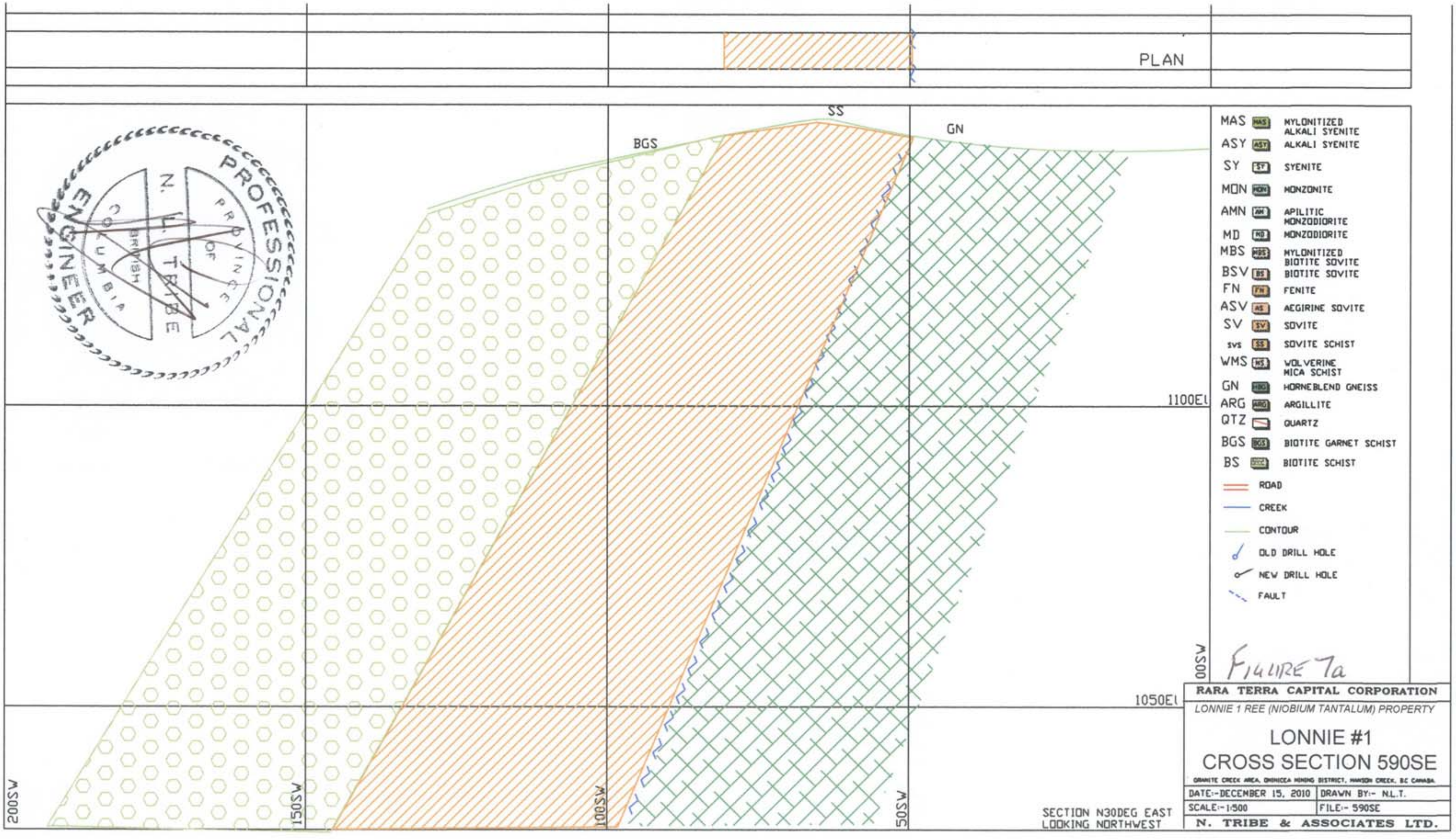


Figure 7a

RARA TERRA CAPITAL CORPORATION

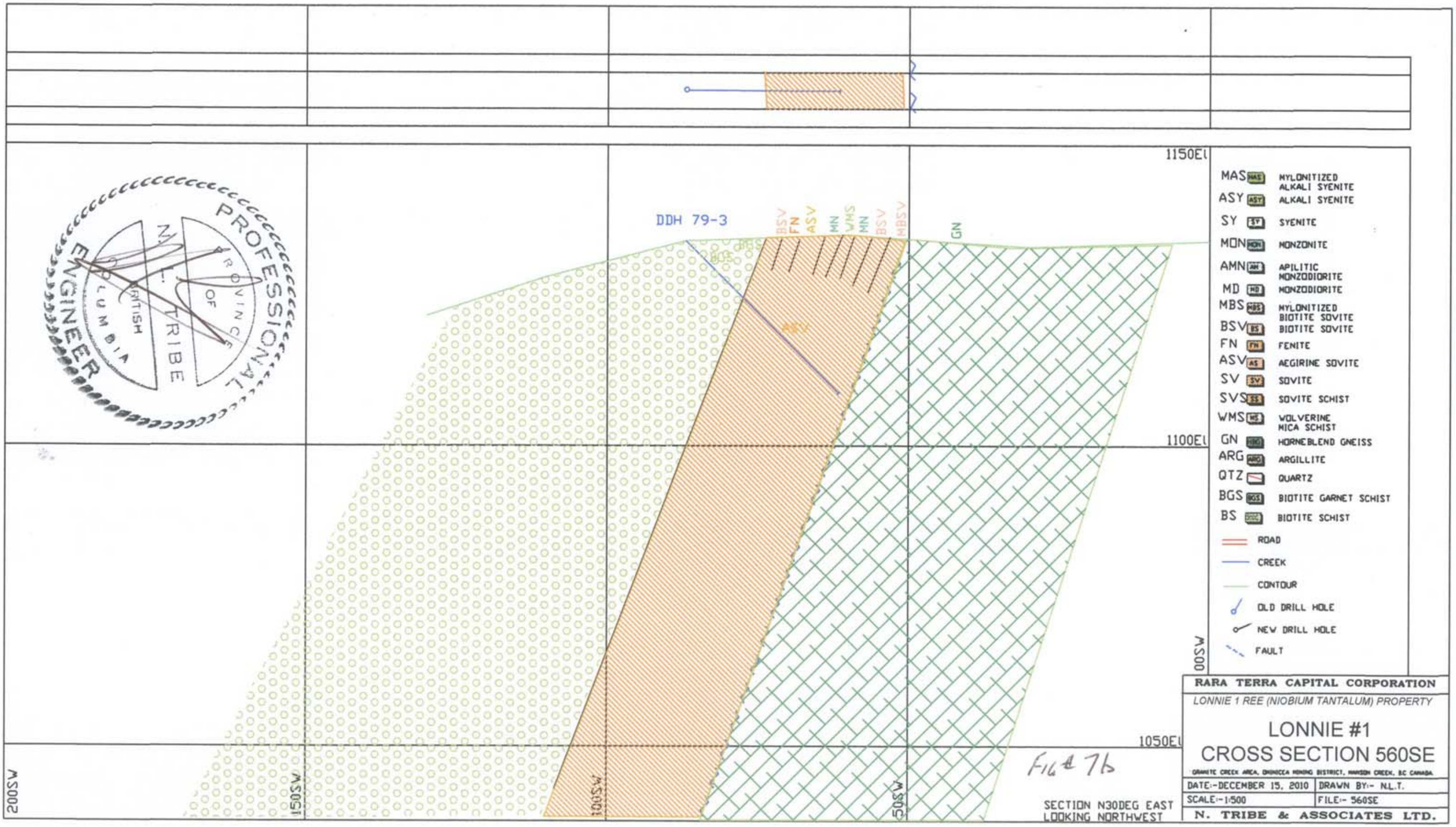
LONNIE 1 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #1
CROSS SECTION 590SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, HANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- 590SE

N. TRIBE & ASSOCIATES LTD.



SECTION N30DEG EAST
LOOKING NORTHWEST

Fig # 7b

RARA TERRA CAPITAL CORPORATION

LONNIE 1 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #1
CROSS SECTION 560SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- 560SE

N. TRIBE & ASSOCIATES LTD.

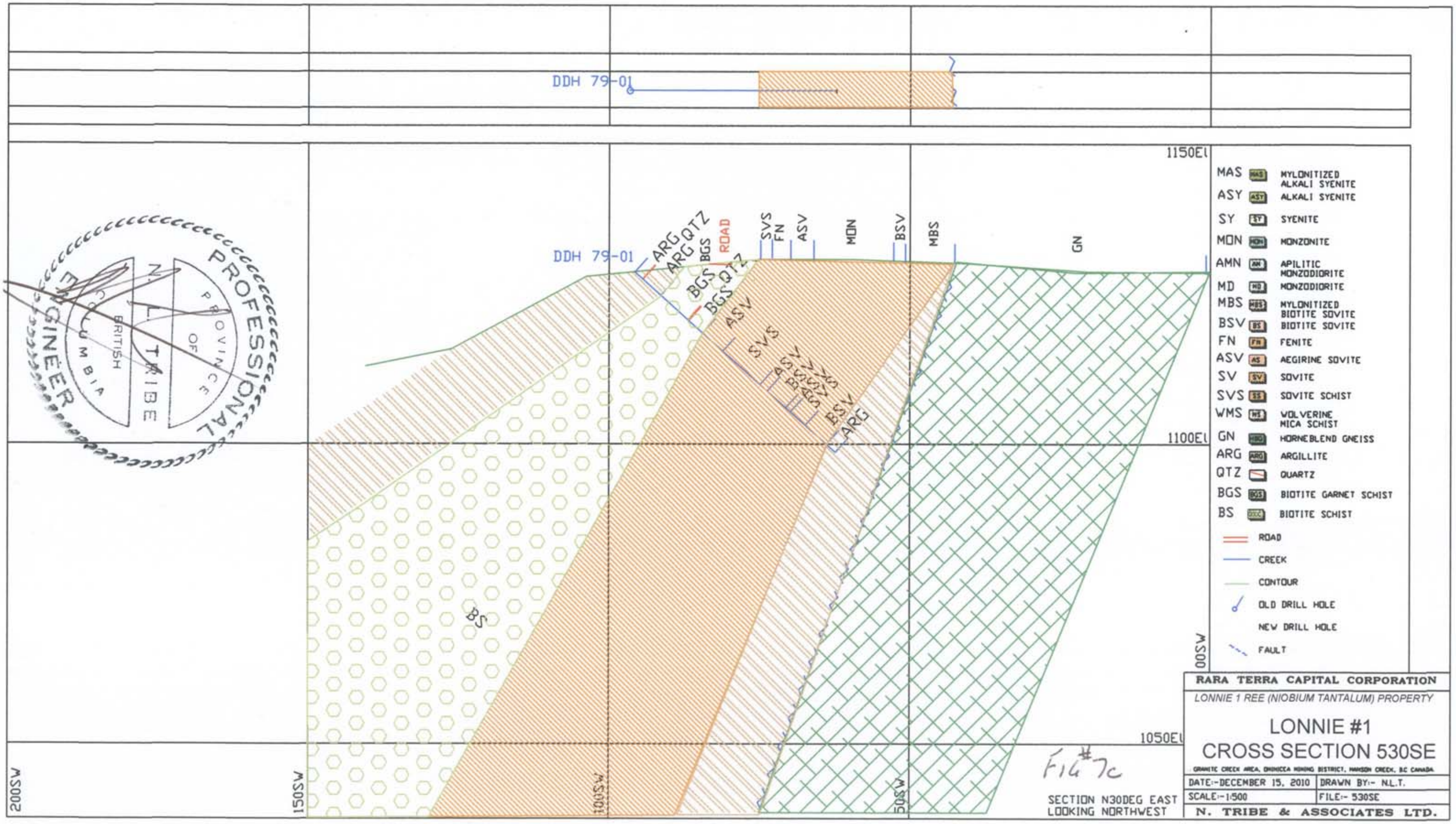


Fig #7c

SECTION N30DEG EAST
LOOKING NORTHWEST

RARA TERRA CAPITAL CORPORATION

LONNIE 1 REE (NIOBIUM TANTALUM) PROPERTY

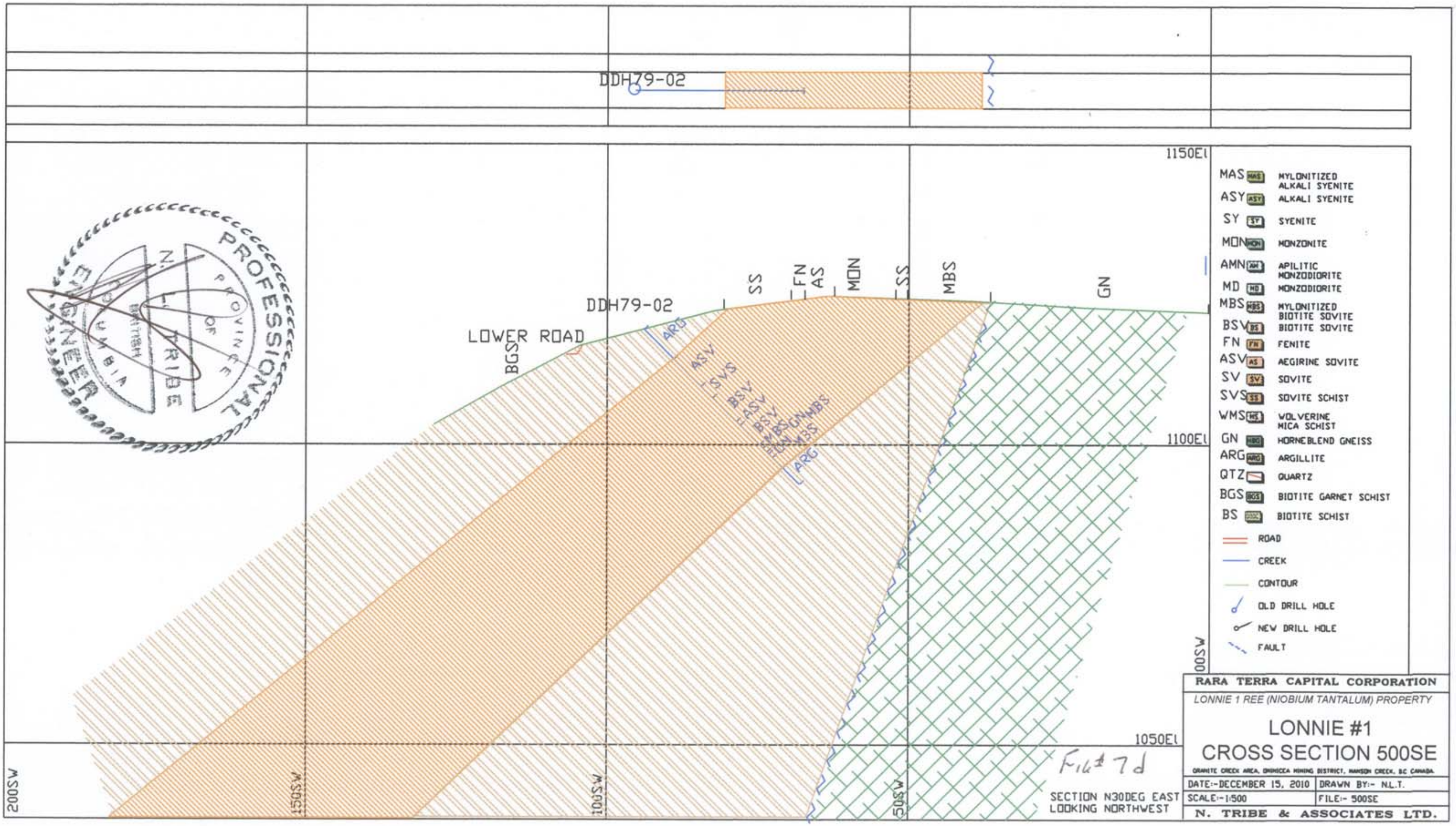
LONNIE #1
CROSS SECTION 530SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- 530SE

N. TRIBE & ASSOCIATES LTD.

N. L. TRIBE



Fil# 7d

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
N. L. TRIBE

RARA TERRA CAPITAL CORPORATION

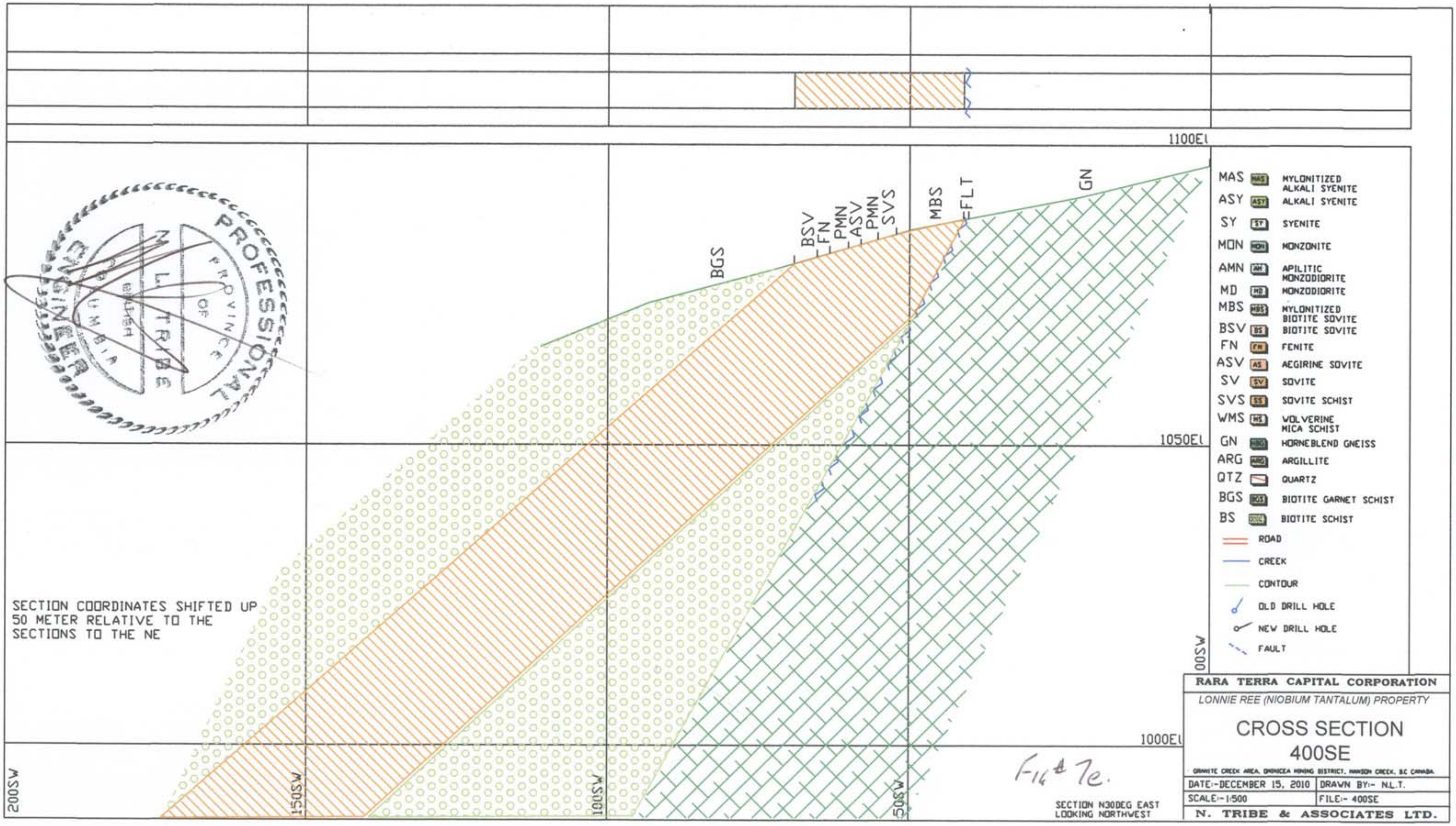
LONNIE 1 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #1
CROSS SECTION 500SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, HANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010
DRAWN BY:- N.L.T.
SCALE:-1:500
FILE:- 500SE

N. TRIBE & ASSOCIATES LTD.



SECTION COORDINATES SHIFTED UP 50 METER RELATIVE TO THE SECTIONS TO THE NE

Fig # 7e.

SECTION N30DEG EAST
LOOKING NORTHWEST

RARA TERRA CAPITAL CORPORATION

LONNIE REE (NIOBIUM TANTALUM) PROPERTY

CROSS SECTION
400SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, MANSON CREEK, B.C CANADA

DATE:-DECEMBER 15, 2010 | DRAWN BY:- N.L.T.
SCALE:-1:500 | FILE:- 400SE

N. TRIBE & ASSOCIATES LTD.

RARA TERRA CAPITAL CORPORATION

LONNIE #2

CROSS SECTIONS

SECTION N30DEG EAST LOOKING NORTHWEST

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
N. L. TRIBE

LONNIE #2 SHOWINGS. COLLECTING THE SAMPLES ALONG THE UPPER ROAD.

GRANITE CREEK, MANSON CREEK AREA, OMINICA MINING DISTRICT, B.C.

MAS	MAS	MYLONITIZED ALKALI SYENITE
ASY	ASY	ALKALI SYENITE
SY	SY	SYENITE
MON	MON	MONZONITE
AMN	AM	APILITIC MONZODIORITE
MD	MD	MONZODIORITE
MBS	MBS	MYLONITIZED BIOTITE SOVITE
BSV	BS	BIOTITE SOVITE
FN	FN	FENITE
ASV	AS	AEGIRINE SOVITE
SV	SV	SOVITE
SVS	SS	SOVITE SCHIST
WMS	WS	WOLVERINE MICA SCHIST
GN	HBG	HORNEBLEND GNEISS
ARG	ARG	ARGILLITE
QTZ	▨	QUARTZ
BGS	BGS	BIOTITE GARNET SCHIST
BS	[illegible]	BIOTITE SCHIST
	═	ROAD
	—	CREEK
	—	CONTOUR
	⊸	OLD DRILL HOLE
	⊸	NEW DRILL HOLE
	╌	FAULT

RARA TERRA CAPITAL CORPORATION

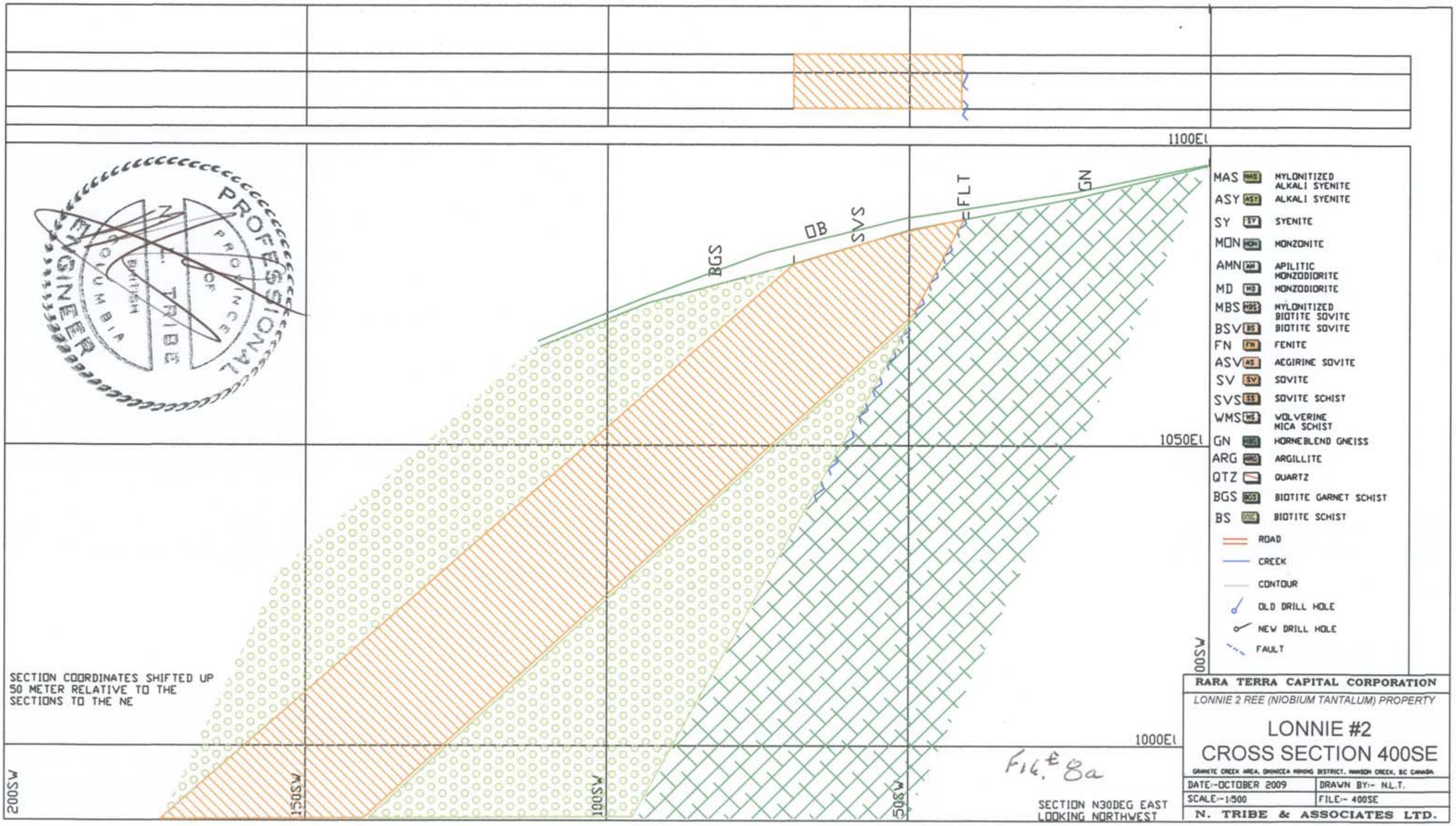
LONNIE #2 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #2
CROSS SECTION COVER

GRANITE CREEK AREA, OMINICEA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- LONNIE #2 COVER

N. TRIBE & ASSOCIATES LTD.



SECTION COORDINATES SHIFTED UP
50 METER RELATIVE TO THE
SECTIONS TO THE NE

N. L. TRIBE

Fig.# 8a

SECTION N30DEG EAST
LOOKING NORTHWEST

RARA TERRA CAPITAL CORPORATION

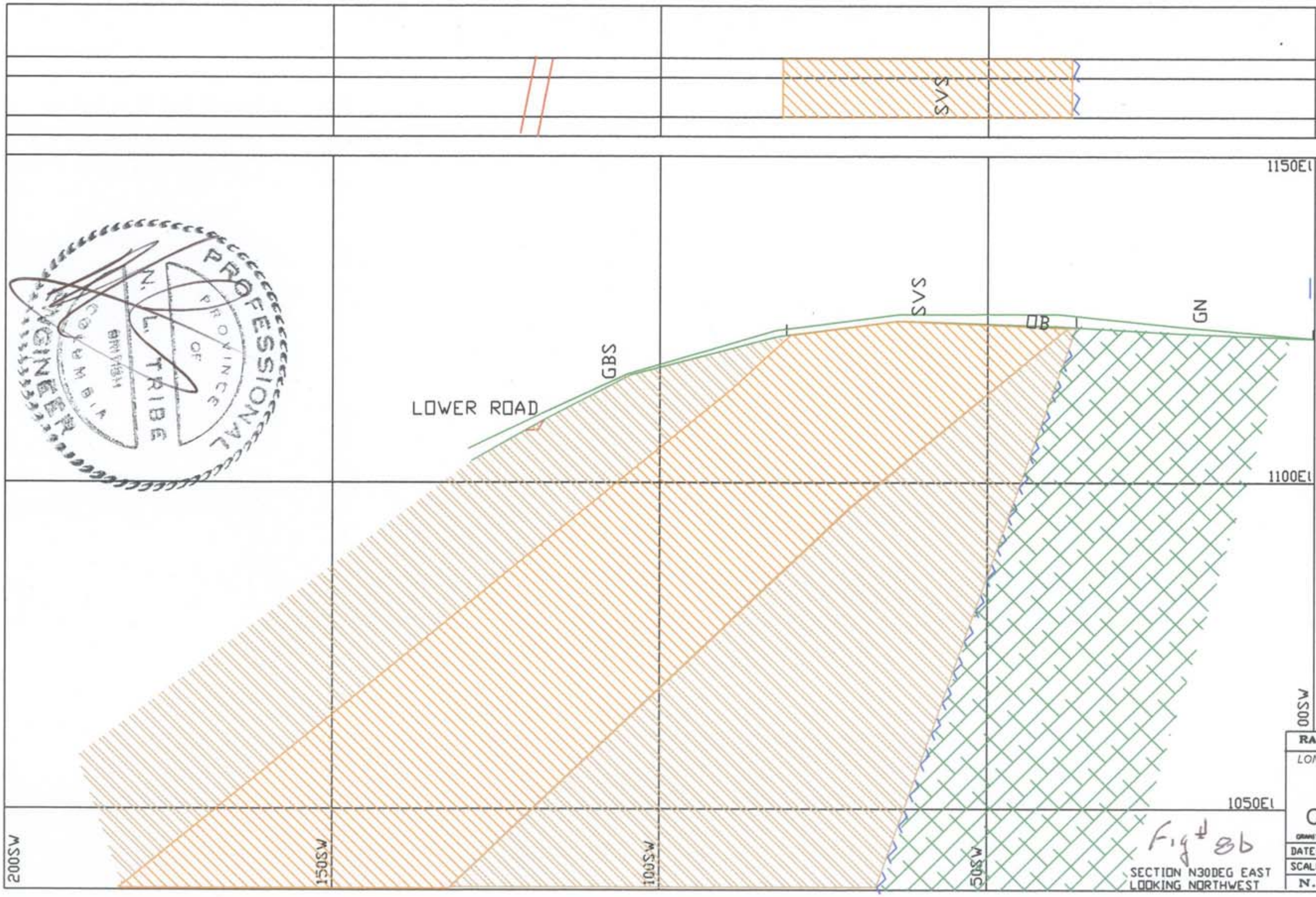
LONNIE 2 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #2
CROSS SECTION 400SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, HANSON CREEK, BC CANADA

DATE:-OCTOBER 2009	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- 400SE

N. TRIBE & ASSOCIATES LTD.



SECTION N30DEG EAST
LOOKING NORTHWEST

Fig # 8b

MAS	MAS	MYLONITIZED ALKALI SYENITE
ASY	ASY	ALKALI SYENITE
SY	SY	SYENITE
MON	MON	MONZONITE
AMN	AM	APILITIC MONZODIORITE
MD	MD	MONZODIORITE
MBS	MBS	MYLONITIZED BIOTITE SOVITE
BSV	BS	BIOTITE SOVITE
FN	FN	FENITE
ASV	AS	AEGIRINE SOVITE
SV	SV	SOVITE
SVS	SS	SOVITE SCHIST
WMS	MS	WOLVERINE MICA SCHIST
GN	HBG	HORNEBLEND GNEISS
ARG	ARG	ARGILLITE
QTZ	▨	QUARTZ
BGS	BGS	BIOTITE GARNET SCHIST
BS	▨	BIOTITE SCHIST
	═	ROAD
	—	CREEK
	—	CONTOUR
	↙	OLD DRILL HOLE
	↙	NEW DRILL HOLE
	⋯	FAULT

RARA TERRA CAPITAL CORPORATION

LONNIE 2 REE (NIOBIUM TANTALUM) PROPERTY

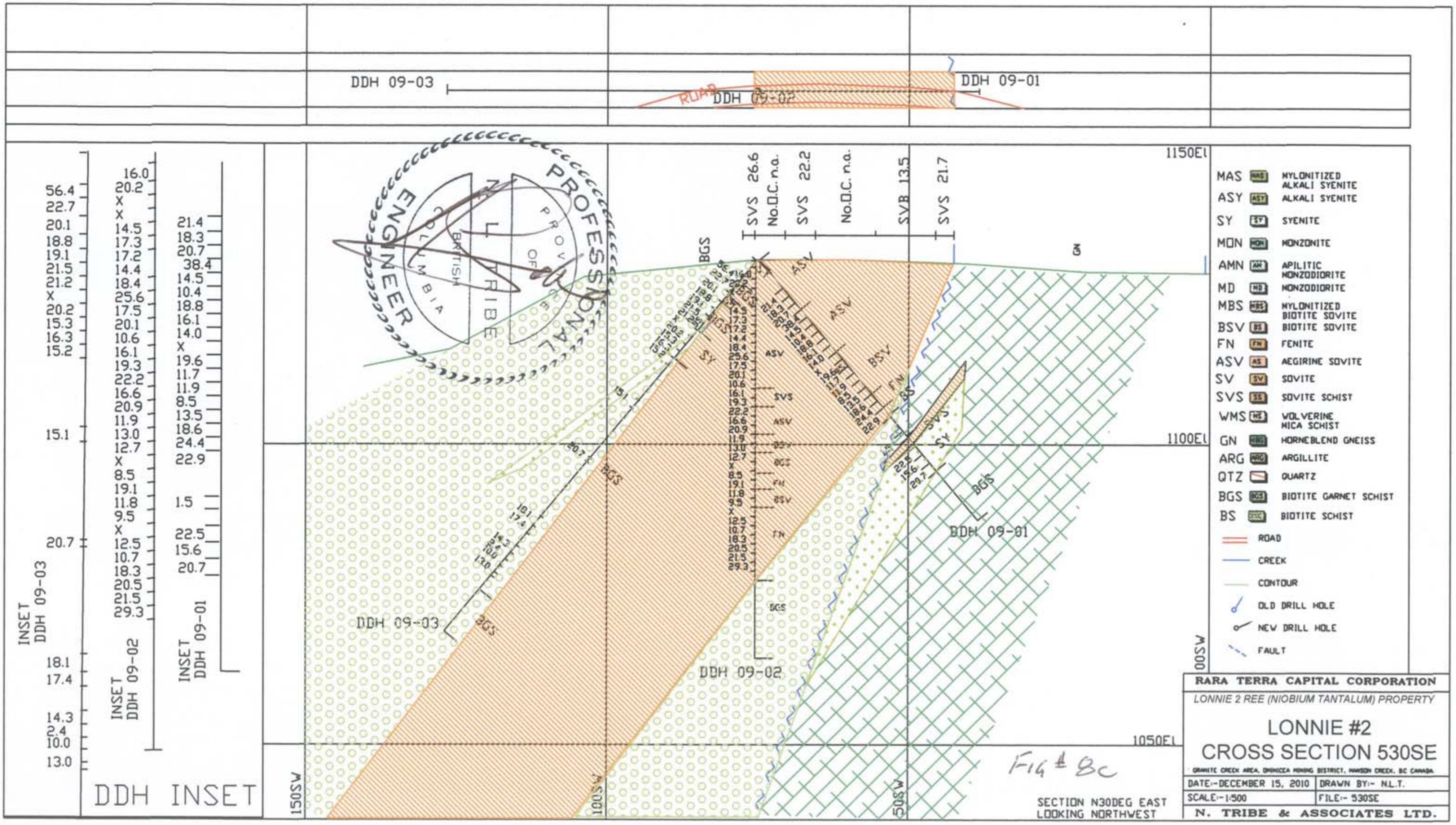
LONNIE #2
CROSS SECTION 500SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:- DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:- 1:500	FILE:- 500SE

N. TRIBE & ASSOCIATES LTD.

N. L. TRIBE



SECTION N30DEG EAST
LOOKING NORTHWEST

FIG # 8c

RARA TERRA CAPITAL CORPORATION

LONNIE 2 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #2
CROSS SECTION 530SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, MANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:-1:500	FILE:- 530SE

N. TRIBE & ASSOCIATES LTD.

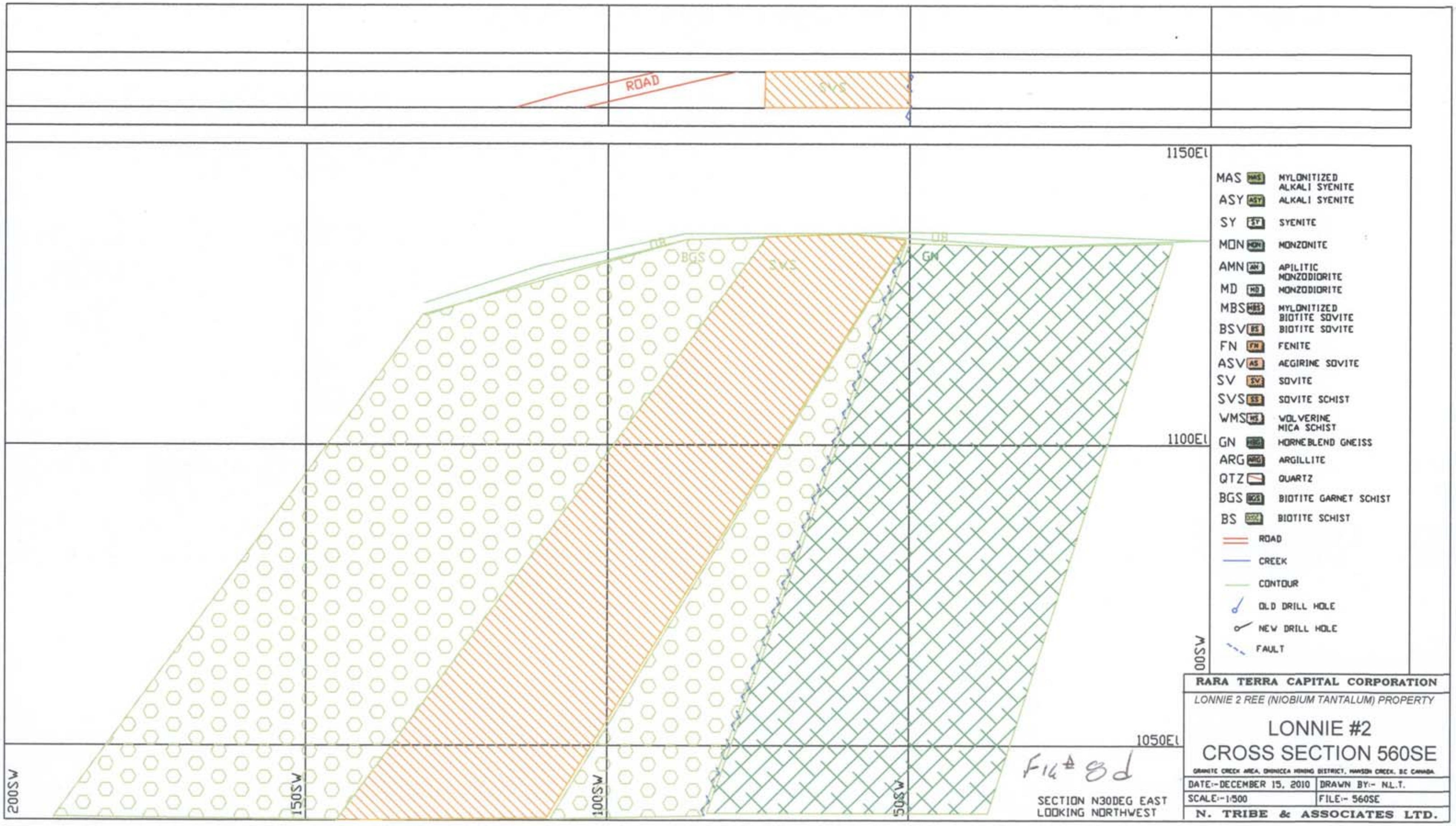


Fig # 8d

SECTION N30DEG EAST
LOOKING NORTHWEST

RARA TERRA CAPITAL CORPORATION

LONNIE 2 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #2
CROSS SECTION 560SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, HANSON CREEK, BC CANADA

DATE:-DECEMBER 15, 2010 | DRAWN BY:- N.L.T.

SCALE:-1:500 | FILE:- 560SE

N. TRIBE & ASSOCIATES LTD.

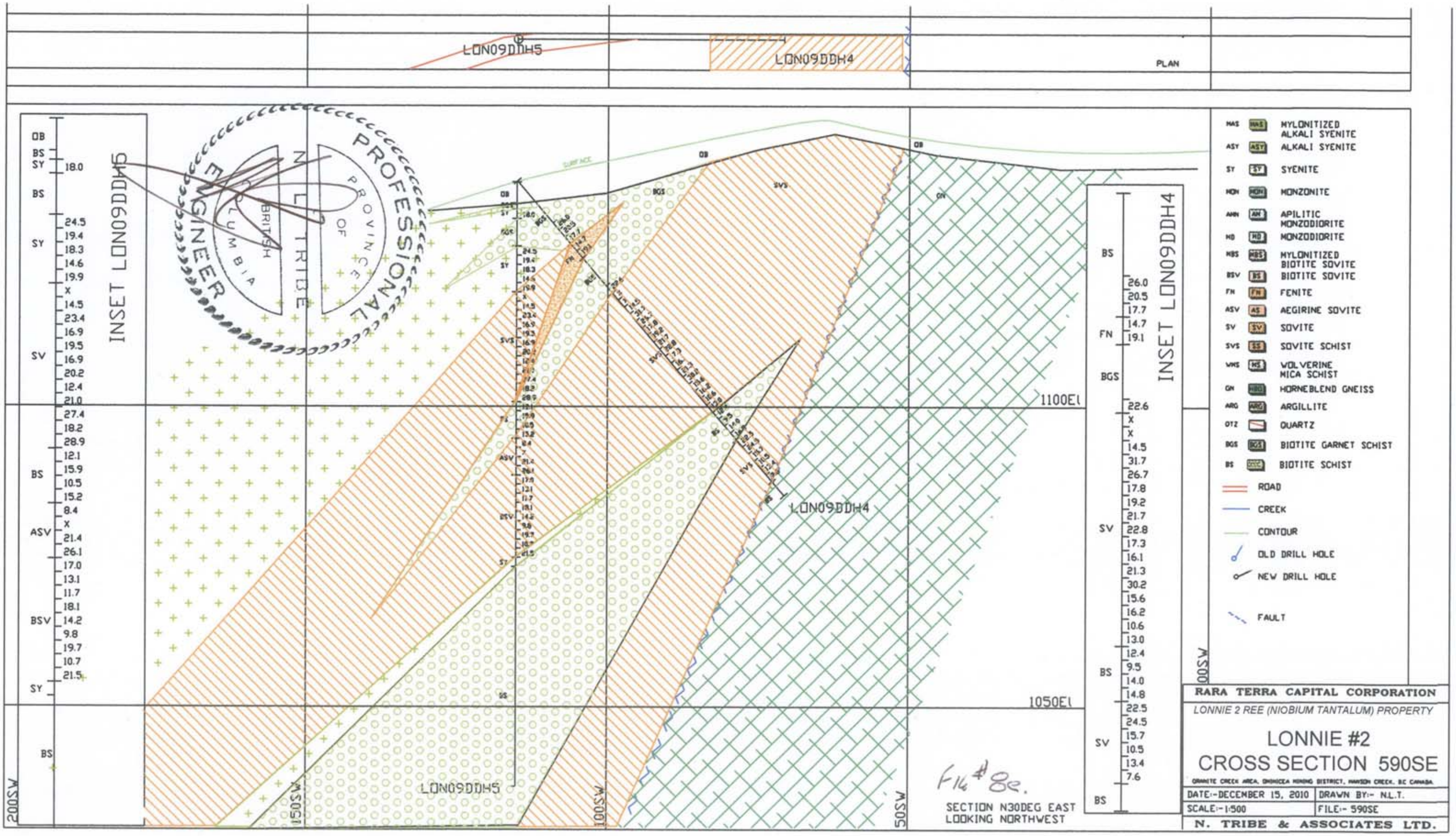


Fig #8e.

N. L. TRIBE

RARA TERRA CAPITAL CORPORATION

LONNIE 2 REE (NIOBIUM TANTALUM) PROPERTY

LONNIE #2
CROSS SECTION 590SE

GRANITE CREEK AREA, OMINECA MINING DISTRICT, HANSON CREEK, BC CANADA

DATE:- DECEMBER 15, 2010	DRAWN BY:- N.L.T.
SCALE:- 1:500	FILE:- 590SE

N. TRIBE & ASSOCIATES LTD.

MINERAL RESOURCE ESTIMATE

Data Analysis

In order to understand the spatial relationships between all the samples it was necessary to develop a series of cross sections covering the full extend of the deposits. Two sets of cross sections spaced at 30 meter intervals were drawn up on the known carbonatites so that the sampling could be plotted, and analyzed. Each drill hole was plotted on the sections at a scale of 1:500 (1 cm to 5 meters) and each of the assay result was plotted at its location in the hole. In addition, the geology logged by the field geologist was plotted next to the hole so that geological interpretation could be made of the deposit to assist in interpretation of the assaying and to avoid projecting values into unfavorable geological environments.

Geological parameters recorded on the sections include a generalization of the rock types as logged by the geologist in 1979 and by the geologist who logged the core in 2009. Rock types interpreted from the old data and reconciled with the new data were the carbonatites, (aegirine sovite, biotite sovite, and fenite), the igneous intrusive rocks (syenites and monzonites) and the wall rocks (biotite garnet schist, argillite and gneiss). Several alteration types were noted by the field geologists such as mylonitized versions of the sovites.

Resource estimates were not calculated as the commercial value of the mineralization measured to date by the drilling is considered uneconomic.

Mineralization Controls

Generally speaking, the mineralization at both Lonnie showings and the Virgil showing are considered to be carbonatite intrusive sills. The sills appear to have been injected along strong regional faults. These faults may be offshoots of the Manson Creek Fault. The mineralization is syngenetic with respect to the carbonatite having been introduced along with the carbonatite or perhaps the syenite. The sill is epigenetic having been introduced during, a phase of regional metamorphism and structural deformation. The mineralization consists of fine grained columbite as disseminations within the carbonatite at or near the contact between the syenite sovite and the biotite sovite. The columbite ($(Fe,Mn)(Nb,Ta)_2O_6$) is a fine black grainy accessory mineral with associated apatite, ilmenorutile, ilmenite and pyrochlore,

($(Ca,Na,Y,Ce, Th,U,Ti)(Nb,Ta)_2O_6(O,F,OH)$). Pure columbium columbite, Nb_2O_5, is 70% niobium but there is often considerable tantalum substituted into the columbite lattice. The element niobium was once called columbium and the mineral form of niobium oxide is still called columbite.

Resource Calculation Parameters

No resource calculations were applied to this property.

Statistical Analyses

Fifteen check analyses were done by the ALS Chemex Laboratory in North Vancouver. Arithmetic averages were calculated and a regression analysis was done. The arithmetic average shows a 15% higher value from the ALS lab. The slope of the regression line which should read 1.0 for an exact correlation showed a slope 0.833 or 16.7% bias on the high side for ALS.

Results

The results of the historical work on the Lonnie #1 showings indicate values on the order of 0.25% niobium (Not compliant with NI 43-101 standards). These values have not been verified by this writer. The values reported in the Minfiles, although sub economic, indicate the presence of rare earth elements in the carbonatites.

Results to date in the drilling on the Lonnie #2 showings returned values averaging 22 ppm Nb. These are not considered to be economic.

The results of the soil survey proved to be much more interesting with five areas showing anomalous results in several multi element rare earth analyses.

The complexities of the 25 element ICP scan are difficult to understand without some further work. In order to understand the significance of these numbers a statistical analysis was performed on the assay analyses of each of the elements. The arithmetic mean and the standard deviation from the mean were defined. Two standard deviation above the mean is considered to be anomalous.

The table below shows the assay certificate with the anomalous values highlighted in yellow. Some samples were anomalous in numerous of the rare earth elements. Some of the anomalous results were clustered into discreet areas which have been designated Anomalies. In all five areas were define as multi-element Anomalies. These are listed below:

- Anomaly #1 is associated with the Virgil carbonatite with nine samples showing high values in niobium and three samples showing anomalous values in other rare earth elements (Ce,Er,Eu,Gd,La,Nd,Pr,Nb,Sr,Ta,Zr.).
- Anomaly #2 is associated with the SEM showings. The SEM prospect is listed in the MinFile as a gold silver showing but the REE analyses show three samples giving anomalous values in the multi-element analyses. (Ce,Dy,Er,Eu,Gd,Ho,La,Nd,Pr,Sm,Tb,Y,Yb.). It should be noted than the niobium (Nb) values were very low at this location.
- Anomaly #3 is associated with the Lonnie #2 carbonatite where it extends down into Granite Creek. This site shows four separate adjoining samples with anomalous multi- element assays, (Dy,Er,Eu,Gd,Ho,Lu,Nd,Pr,Sc,Sm,Tb,Y,Yb.). The niobium values are low at this location. The low niobium values co-relate favorably with the drilling further up slope, 200 meters to the east.
- Anomaly #4 is located near the edge of the road 550 meters north east of the Lonnie #1 showing (413250E, 6171750N). This is a one sample anomaly with multi-element anomalous values in several REE elements.(Ce,La,Nd,Pr.). This sample shows a particularly strong response to Cerium and Lanthanum.
- Anomaly #5 is located 580 meters northeast of Lonnie #1 at 413400E, 6171600N at the southeastern corner of the sampling pattern. This is a one sample anomaly with several multi-element anomalous values. (Dy,Er,Eu,Gd,Ho,Nd,Sm,Tb,Y,Yb.) The niobium values are low at this location.

PIONEER LABORATORIES INC. #103-2691 VISCOUNT WAY, RICHMOND, BC CANADA V6V 2R5 TELEPHONE (604) 231-8165

GEOCHEMICAL ANALYSIS CERTIFICATE

AMERICAN MANAGANESE INC.
Project: Lonnie-Virgil
Sample Type: Soils/Rocks

HNO$_3$-HClO$_4$-HF-HCl digestion, ICP/MS finish.

Analyst ____________
Report N No: 2012680
Date: September 22, 201

ELEMENT SAMPLE		Ce ppm ppm Ce	Dy ppm ppm Dy	Er ppm ppm Er	Eu ppm ppm Eu	Gd ppm ppm Gd	Ho ppm ppm Ho	La ppm ppm La	Lu ppm ppm Lu	Nd ppm ppm Nd	Pr ppm ppm Pr	Sc ppm ppm Sc	Sm ppm ppm Sm	Tb ppm ppm Tb	Th ppm ppm Th	Tm ppm ppm Tm	U ppm ppm U	Y ppm ppm Y	Yb ppm ppm Yb	Ba ppm ppm Ba	Nb ppm ppm Nb	Rb ppm ppm Rb	Sr ppm ppm Sr	Ta ppm ppm Ta	Zr ppm ppm Zr	Ti % ppm Ti
L410650E-6174850N	1	202.7	3.6	1.8	1.8	8.3	.6	123.6	.2	66.3	19.9	11.4	8.2	.8	37.0	.2	5.3	16.0	1.4	552.0	562.2	65.3	217.0	10.5	52.0	.299
L410650E-6174875N	2	603.1	8.8	3.9	5.5	23.3	1.4	334.7	.4	152.7	52.5	11.8	23.4	2.2	53.9	.4	11.8	28.9	2.6	824.0	1040.0	85.3	336.0	14.0	116.2	.392
L410650E-6174900N	3	311.5	4.9	2.0	3.0	11.8	.7	156.5	.2	79.0	26.9	11.9	12.1	1.1	20.8	.2	6.5	15.0	1.4	677.0	355.2	88.4	245.0	5.0	43.6	.364
L410650E-6174925N	4	198.1	3.9	1.9	2.2	8.8	.7	117.6	.2	66.7	20.0	14.5	9.1	.9	37.2	.2	3.7	16.8	1.4	535.0	413.1	102.0	171.0	7.2	90.9	.384
L410650E-6174950N	5	157.8	3.4	1.6	1.7	7.9	.6	90.9	.2	58.2	16.6	13.1	8.2	.8	28.4	.2	3.8	12.2	1.3	491.0	251.1	107.6	174.0	5.8	46.1	.447
L410650E-6174975N	6	163.9	3.3	1.5	1.7	8.4	.5	94.2	.2	57.8	16.8	15.5	8.8	.8	24.6	.2	2.5	14.0	1.2	596.0	142.6	97.5	162.0	2.2	54.7	.355
L410650E-6175000N	7	122.5	2.9	1.3	1.4	6.7	.4	70.4	.2	51.7	12.7	15.8	6.9	.7	15.0	.2	1.9	10.3	1.1	610.0	42.9	86.6	189.0	0.4	32.8	.385
L410675E-6174850N	8	237.8	5.6	3.0	2.3	10.6	1.0	141.6	.4	78.8	23.7	13.6	10.6	1.1	60.4	.4	4.5	23.2	2.7	539.0	312.5	65.1	201.0	5.5	113.0	.395
L410675E-6174875N	9	363.9	5.1	2.2	2.9	14.1	.8	192.8	.2	90.0	31.4	12.3	13.5	1.2	23.2	.2	5.7	16.8	1.4	716.0	394.6	108.6	324.0	7.0	50.3	.483
L410675E-6174900N	10	557.5	5.8	2.4	3.6	18.1	.9	356.3	.2	122.1	46.0	11.5	17.0	1.5	25.9	.3	7.9	18.9	1.6	670.0	412.0	102.4	307.0	6.1	40.3	.380
L410675E-6174925N	11	161.3	3.3	1.6	1.7	7.8	.6	96.7	.2	55.8	16.2	16.5	7.8	.7	16.7	.2	2.6	13.3	1.3	673.0	125.6	97.4	259.0	1.7	53.7	.493
L410675E-6174950N	12	106.9	2.9	1.4	1.4	6.5	.5	57.7	.2	41.2	11.5	15.7	6.6	.7	15.0	.2	2.2	11.1	1.2	494.0	46.0	86.5	132.0	0.4	23.7	.336
L410675E-6174975N	13	116.2	3.2	1.8	1.6	6.1	.6	69.8	.2	39.2	11.7	14.4	6.1	.7	14.9	.2	2.1	12.9	1.4	640.0	106.4	94.1	164.0	1.2	28.1	.295
L410675E-6175000N	14	144.2	3.0	1.4	1.5	7.3	.5	84.2	.2	51.8	14.8	11.3	7.7	.7	18.1	.2	2.4	10.8	1.1	595.0	92.9	84.9	186.0	1.2	30.2	.265
L410700E-6174850N	15	258.9	3.1	1.4	2.0	9.8	.5	163.0	.2	83.0	24.7	16.9	9.9	.8	18.8	.2	1.8	10.2	1.1	830.0	102.2	140.2	289.0	1.9	24.0	.411
L410700E-6174875N	16	115.2	3.5	1.6	1.6	6.9	.6	61.2	.2	45.6	12.4	15.6	7.5	.7	20.3	.2	2.0	12.5	1.3	1042.0	50.7	146.1	173.0	0.7	41.5	.455
L410700E-6174900N	17	314.8	4.5	2.0	4.1	12.2	.7	158.0	.2	82.9	28.1	15.4	12.9	1.1	33.2	.2	1.8	15.3	1.5	778.0	50.3	67.1	182.0	0.3	31.1	.349
L410700E-6174925N	18	136.7	3.9	1.8	2.0	8.2	.6	74.6	.2	53.4	14.7	19.4	8.5	.9	24.0	.2	2.1	16.6	1.4	821.0	44.2	154.0	167.0	1.2	23.8	.524
L410700E-6174950N	19	205.3	3.5	1.4	2.3	9.7	.5	118.2	.2	75.0	21.1	14.2	10.5	.9	25.7	.2	1.8	12.4	1.1	1140.0	58.8	112.5	184.0	0.5	16.0	.315
L410700E-6174975N	20	245.7	5.4	2.5	2.6	11.8	.9	144.8	.3	84.4	24.6	13.0	11.4	1.2	23.1	.3	5.9	20.3	1.8	796.0	205.2	109.9	512.0	5.7	85.7	.355
L410700E-6175000N	21	147.0	3.8	1.9	1.7	8.1	.6	81.4	.2	53.6	15.4	21.1	8.6	.8	17.3	.3	2.3	14.5	1.5	752.0	62.0	166.2	159.0	1.3	32.8	.459
L410725E-6174850N	22	300.9	4.6	2.1	2.4	11.5	.7	167.8	.2	75.9	26.2	15.3	11.3	1.1	25.8	.3	3.5	16.8	1.6	701.0	164.0	91.0	213.0	2.4	17.4	.351
L410725E-6174875N	23	310.0	5.8	2.8	3.0	14.9	.9	161.2	.3	91.7	34.2	16.9	14.7	1.4	33.2	.3	5.2	21.7	2.0	697.0	305.7	111.0	231.0	3.9	24.3	.374
L410725E-6174900N	24	384.3	6.4	3.1	3.0	15.0	1.1	203.5	.4	87.3	32.7	18.1	14.2	1.5	28.2	.4	2.5	24.9	2.5	853.0	67.2	153.9	178.0	1.5	38.4	.376
L410725E-6174925N	25	263.9	3.8	1.7	2.2	11.2	.6	162.6	.2	85.5	26.1	14.6	11.4	1.0	22.6	.2	2.6	12.9	1.3	736.0	121.7	115.1	207.0	1.7	31.1	.390
L410725E-6174950N	26	135.0	3.4	1.7	1.4	7.4	.6	75.8	.2	49.6	14.2	16.4	7.8	.8	15.5	.2	2.2	13.1	1.4	646.0	47.5	138.2	187.0	0.9	28.5	.489
L412400E-6172900N	27	169.7	6.8	2.5	2.4	13.7	1.0	87.5	.2	74.1	20.2	10.0	13.9	1.6	32.1	.3	9.9	23.8	1.7	362.0	19.6	80.5	168.0	0.5	7.2	.278
L412400E-6172950N	28	179.8	6.2	2.3	1.6	13.4	.9	94.4	.2	76.0	20.5	9.2	13.6	1.5	35.8	.3	7.3	21.2	1.5	421.0	39.9	103.2	192.0	0.4	6.3	.300
L412400E-6173000N	29	131.6	3.8	1.4	1.2	9.0	.5	70.8	.1	51.7	14.4	8.8	9.2	.9	25.1	.1	3.1	12.5	0.9	419.0	36.0	73.2	168.0	0.4	9.1	.311
L412400E-6173050N	30	116.8	3.3	1.7	1.2	6.3	.6	59.4	.2	43.6	12.4	8.1	6.4	.7	13.6	.2	4.6	14.0	1.4	405.0	68.8	72.1	141.0	0.7	19.7	.285
L412500E-6172950N	31	092.5	3.4	1.4	1.3	6.9	.5	49.9	.2	39.3	10.7	12.3	7.0	.8	13.3	.2	7.1	13.5	1.0	481.0	33.5	95.9	164.0	0.5	11.8	.300
L412500E-6173000N	32	522.1	14.8	4.7	3.6	34.3	2.0	223.5	.4	169.9	52.9	7.9	36.3	3.7	89.0	.5	14.6	44.8	2.6	331.0	18.3	75.1	169.0	0.2	6.8	.273
L412500E-6173050N	33	324.7	9.0	3.0	2.1	20.9	1.3	142.0	.3	99.6	31.8	8.6	21.2	2.2	57.7	.3	9.0	28.4	1.9	323.0	28.0	86.5	161.0	0.6	10.1	.287
L412500E-6173100N	34	116.7	3.6	1.5	1.3	7.6	.6	64.0	.2	45.4	12.6	11.8	7.6	.8	17.0	.2	5.0	13.2	1.1	408.0	44.9	99.9	159.0	0.5	9.0	.289
L412550E-6172400N	35	125.0	4.0	1.5	1.5	8.5	.6	67.9	.2	50.2	14.2	11.3	8.8	.9	18.6	.2	5.2	14.0	1.1	415.0	40.0	86.3	134.0	0.3	11.7	.294
L412550E-6172450N	36	099.7	3.0	1.3	1.2	6.0	.5	54.0	.2	36.6	10.3	10.1	6.0	.7	12.8	.2	1.7	11.3	1.0	472.0	54.4	68.4	171.0	0.4	11.2	.350
L412550E-6172500N	37	224.9	7.0	2.8	2.2	15.6	1.1	121.7	.3	90.3	25.3	11.6	15.6	1.7	36.2	.3	9.1	25.4	2.0	335.0	79.6	58.3	155.0	0.7	10.0	.332
L412550E-6172550N	38	148.3	4.6	1.9	1.7	9.1	.7	80.4	.2	53.7	15.1	13.8	8.8	1.0	18.8	.2	7.4	16.8	1.3	553.0	58.8	96.7	190.0	2.0	27.0	.567
L412550E-6172600N	39	123.6	4.7	2.0	1.7	8.9	.8	64.4	.3	49.9	13.6	13.7	8.8	1.0	16.6	.2	15.9	19.1	1.5	466.0	56.2	91.4	168.0	0.8	13.4	.315
L412600E-6172100N	40	389.6	11.7	3.8	4.5	25.9	1.6	170.8	.4	121.3	39.0	8.4	27.0	2.9	70.7	.4	10.8	37.4	2.4	268.0	31.2	57.9	164.0	0.1	6.1	.251
L412600E-6172150N	41	185.2	6.9	2.5	1.8	14.0	1.0	95.8	.2	80.1	21.2	7.8	14.4	1.6	33.3	.3	6.5	23.0	1.6	337.0	22.9	77.2	181.0	0.4	8.1	.245
L412600E-6172200N	42	139.0	7.3	3.3	2.7	12.5	1.2	81.9	.4	64.4	17.6	14.0	11.8	1.5	20.7	.4	13.8	31.9	2.5	480.0	38.5	83.9	204.0	0.3	18.2	.336
L412600E-6172250N	43	117.6	3.2	1.3	1.4	7.2	.5	64.8	.1	45.0	12.6	12.8	7.5	.8	15.6	.1	2.4	11.1	0.9	534.0	39.6	85.8	175.0	0.2	12.6	.337
L412600E-6172300N	44	157.3	4.0	1.7	1.6	8.7	.6	84.8	.2	55.1	15.6	12.7	8.6	.9	17.9	.2	3.5	14.1	1.3	542.0	81.1	88.3	184.0	0.7	24.0	.394
L412600E-6172350N	45	117.9	3.6	1.5	1.5	7.5	.6	63.4	.2	43.3	12.3	12.0	7.4	.8	14.3	.2	3.5	13.6	1.2	583.0	53.9	89.0	179.0	0.6	18.6	.359
L412600E-6172400N	46	122.1	4.0	1.6	1.3	8.2	.6	57.2	.2	46.1	12.3	11.6	8.2	.9	18.0	.2	4.3	14.2	1.2	544.0	32.9	101.6	179.0	0.4	13.2	.328
L412600E-6172450N	47	202.6	5.1	2.4	1.6	9.5	.9	53.5	.3	47.2	11.7	15.1	8.1	1.1	15.5	.3	8.6	20.0	1.8	589.0	41.0	97.7	172.0	1.2	19.9	.332
L412600E-6172500N	48	138.6	3.9	1.8	1.3	7.3	.6	55.4	.2	40.4	10.8	13.0	6.7	.8	12.3	.2	6.6	16.4	1.3	526.0	41.7	91.3	162.0	0.7	18.2	.339
L412600E-6172550N	49	109.8	3.4	1.5	1.3	6.7	.5	57.6	.2	40.2	11.0	11.4	6.6	.7	14.3	.2	6.4	13.1	1.1	530.0	102.0	88.3	189.0	6.5	20.5	.401
L412600E-6172600N	50	098.7	5.4	2.3	1.8	8.6	.9	58.0	.2	45.4	12.2	16.0	8.2	1.1	14.3	.3	30.9	24.5	1.7	556.0	44.8	98.5	170.0	15.1	32.0	.381
L412600E-6172650N	51	091.3	2.4	1.0	1.0	5.3	.4	48.4	.1	30.3	9.2	12.4	5.4	.5	10.0	.1	4.0	9.1	0.8	598.0	117.8	101.6	180.0	2.0	26.2	.418
L412600E-6172700N	52	140.8	4.2	1.9	1.5	8.2	.7	62.8	.2	46.0	12.7	13.6	7.9	.9	16.1	.2	11.1	16.0	1.4	554.0	74.3	106.2	183.0	16.1	23.8	.404
L412600E-6172750N	53	136.0	6.8	3.1	2.3	11.6	1.2	73.4	.4	60.8	16.2	21.8	11.3	1.4	22.4	.4	20.3	30.1	2.4	559.0	44.7	143.2	196.0	1.3	35.8	.448
L412600E-6172800N	54	096.6	5.1	2.4	1.6	8.6	.9	50.1	.3	43.4	11.1	15.7	8.1	1.0	10.7	.3	16.3	23.2	2.0	589.0	47.9	134.9	203.0	1.6	14.9	.580
L412600E-6172850N	55	077.7	2.5	1.0	0.9	5.3	.4	41.9	.1	32.1	8.7	10.3	5.6	.6	11.4	.1	3.9	9.3	0.8	494.0	30.8	120.4	155.0	0.4	10.9	.343
L412600E-6172900N	56	075.4	2.8	1.1	1.0	5.5	.4	39.2	.1	32.4	8.7	10.7	5.8	.6	12.0	.1	3.9	10.4	0.9	418.0	22.3	107.9	130.0	0.3	28.0	.283
L412600E-6172950N	57	082.6	3.0	1.2	1.0	5.6	.5	43.7	.1	32.8	8.9	11.3	5.7	.7	11.8	.2	7.1	11.4	0.9	407.0	32.1	103.2	127.0	0.7	11.5	.300
L412600E-6173000N	58	146.2	5.4	2.1	1.7	10.6	.8	76.5	.2	60.2	16.2	10.1	10.8	1.2	22.6	.3	8.4	18.7	1.5	412.0	43.8	82.9	154.0	0.7	13.3	.339
L412600E-6173050N	59	343.6	10.2	3.3	2.4	23.1	1.4	149.6	.3	112.7	34.7	9.3	23.9	2.5	59.6	.3	10.3	32.8	2.1	320.0	22.9	68.1	157.0	0.2	11.0	.300
L412600E-6173100N	60	183.2	6.1	2.1	1.8	13.6	.9	95.2	.2	78.4	21.4	8.6	14.2	1.5	32.5	.2	9.2	20.5	1.3	469.0	27.9	114.3	215.0	0.3	7.4	.337
L412650E-6172050N	61	144.3	3.2	1.3	1.5	7.7	.5	83.9	.1	49.4	14.2	11.0	7.5	.7	14.6	.2	1.9	11.3	1.0	594.0	63.0	81.3	184.0	0.4	17.8	.379
L412650E-6172100N	62	283.3	8.9	3.2	2.1	19.0	1.3	129.1	.3	91.8	28.4	8.8	39.6	2.2	49.7	.3	8.3	30.4	2.1	408.0	41.3	94.2	166.0	[illegible]	7.5	.316

ELEMENT SAMPLE		Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sc ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
		ppm Ce	ppm Dy	ppm Er	ppm Eu	ppm Gd	ppm Ho	ppm La	ppm Lu	ppm Nd	ppm Pr	ppm Sc	ppm Sm	ppm Tb	ppm Th	ppm Tm	ppm U	ppm Y	ppm Yb	ppm Ba	ppm Nb	ppm Rb	ppm Sr	ppm Ta	ppm Zr	ppm Ti
L410650E-6174850N	1	202.7	3.6	1.8	1.8	8.3	.6	123.6	.2	66.3	19.9	11.4	8.2	.8	37.0	.2	5.3	16.0	1.4	552.0	562.2	65.3	217.0	10.5	52.0	.299
L412650E-6172150N	63	130.7	13.9	6.8	3.8	20.5	2.6	91.1	.9	83.6	21.1	14.3	17.9	2.7	20.4	.9	46.9	77.5	5.6	374.0	61.5	76.1	193.0	0.3	15.0	.291
L412650E-6172200N	64	128.9	9.5	4.5	2.6	14.5	1.7	71.8	.6	65.9	16.9	17.5	13.2	1.9	19.4	.6	17.4	45.9	3.7	513.0	35.3	99.5	196.0	0.5	17.4	.377
L412650E-6172250N	65	181.1	8.2	3.9	2.5	13.3	1.4	84.8	.5	67.8	18.2	19.5	12.2	1.6	21.6	.5	8.9	33.4	3.3	546.0	45.7	107.7	222.0	0.6	27.6	.439
L412650E-6172300N	66	108.9	3.1	1.3	1.3	6.5	.5	56.6	.2	39.2	10.7	11.9	6.5	.7	13.9	.2	3.3	11.6	1.0	538.0	41.4	80.4	162.0	0.2	15.2	.371
L412650E-6172350N	67	130.0	3.7	1.7	1.6	8.0	.6	74.8	.2	48.2	13.8	12.3	7.7	.9	14.3	.2	3.1	14.7	1.2	558.0	83.3	75.7	174.0	0.6	28.6	.347
L412650E-6172400N	68	132.4	4.8	2.0	1.6	9.1	.8	67.8	.2	52.9	14.1	13.3	9.2	1.0	18.9	.3	5.5	18.1	1.6	446.0	79.5	71.6	185.0	0.6	17.5	.371
L412650E-6172450N	69	106.2	4.8	2.0	1.6	8.5	.8	56.0	.2	43.9	12.2	13.5	8.4	1.0	14.0	.2	12.1	21.2	1.5	493.0	33.9	109.0	192.0	0.4	27.8	.366
L412650E-6172500N	70	105.2	4.4	1.8	1.5	8.0	.7	57.9	.2	43.6	12.0	13.5	7.9	.9	14.5	.2	10.6	19.1	1.4	487.0	54.7	108.7	190.0	1.4	23.7	.388
L412650E-6172550N	71	094.7	2.9	1.3	1.1	5.9	.5	53.0	.2	36.2	10.3	13.6	6.0	.6	12.6	.2	9.7	11.7	1.0	566.0	63.3	95.2	184.0	2.4	27.1	.431
L412560E-6172600N	72	103.6	2.7	1.2	1.2	6.1	.4	58.3	.1	38.8	11.0	13.5	6.2	.6	12.1	.1	3.4	10.2	0.9	598.0	63.9	113.2	174.0	1.1	21.1	.417
L412700E-6172050N	73	139.5	4.6	1.9	1.5	9.7	.7	71.5	.2	55.8	15.2	9.6	9.8	1.1	21.1	.2	4.5	16.9	1.5	403.0	38.9	80.0	201.0	0.4	13.7	.346
L412700E-6172100N	74	083.4	3.5	1.5	1.0	6.5	.6	42.6	.2	34.2	9.1	8.5	6.6	.8	14.8	.2	2.7	13.6	1.2	319.0	29.3	79.2	153.0	0.1	13.9	.248
L412700E-6172150N	75	112.4	3.7	1.4	1.3	7.6	.6	59.3	.2	45.6	12.5	12.4	8.0	.8	16.9	.2	3.3	13.3	1.1	491.0	29.7	107.7	185.0	0.9	13.2	.378
L412700E-6172200N	76	122.7	8.2	3.6	2.6	12.9	1.4	69.7	.4	63.7	16.7	18.5	12.6	1.7	16.4	.4	11.5	34.3	2.7	597.0	32.1	150.0	297.0	0.4	24.0	.414
L412700E-6172250N	77	156.4	6.0	2.3	2.1	12.0	.9	82.6	.2	65.7	17.9	15.1	11.9	1.4	19.7	.3	11.3	21.5	1.5	538.0	40.7	131.8	163.0	0.2	29.5	.384
L412700E-6172300N	78	136.9	5.0	2.0	1.7	9.4	.8	62.2	.2	51.4	13.8	19.1	9.4	1.1	17.6	.2	8.4	17.6	1.4	531.0	25:8	143.8	158.0	0.4	29.7	.439
L412850E-6171900N	79	110.7	3.2	1.4	1.4	6.9	.5	60.6	.2	43.8	12.2	18.7	7.5	.7	12.2	.2	2.1	11.5	1.1	615.0	33.6	115.2	155.0	31.4	31.1	.395
L412850E-6171950N	80	083.2	2.5	1.1	1.0	5.6	.4	44.0	.2	34.3	9.4	13.2	5.9	.6	10.3	.1	1.8	9.9	1.0	585.0	20.4	91.0	198.0	0.3	20.3	.367
L412850E-6172000N	81	093.1	6.5	1.2	1.2	6.1	.4	51.1	.1	36.5	10.1	14.1	6.3	.7	11.6	.1	1.9	10.8	1.0	606.0	29.9	93.3	172.0	0.2	19.0	.379
L412850E-6172050N	82	096.9	3.0	1.2	1.1	6.8	.5	51.7	.1	39.9	10.8	11.1	7.1	.7	14.8	.1	2.3	10.7	0.9	520.0	39.1	100.3	170.0	2.2	14.3	.342
L412850E-6172100N	83	125.2	4.0	1.7	1.5	8.2	.7	66.9	.2	45.5	13.4	12.2	8.4	.9	14.4	.2	3.7	15.3	1.3	542.0	41.8	102.7	197.0	0.5	23.1	.376
L412900E-6171900N	84	102.1	3.3	1.4	1.4	6.8	.5	53.7	.2	40.2	11.1	14.6	7.1	.7	12.9	.2	1.8	12.6	1.2	630.0	30.4	93.5	178.0	0.1	19.5	.390
L412900E-6171950N	85	088.0	2.6	1.1	1.1	5.5	.4	43.9	.2	32.0	9.3	13.3	5.8	.6	10.8	.1	1.9	10.0	1.0	510.0	20.0	79.9	171.0	0.1	34.1	.354
L412900E-6172000N	86	115.5	3.3	1.4	1.4	7.1	.5	58.9	.2	41.9	11.8	17.7	7.3	.8	14.4	.2	2.9	11.8	1.1	521.0	23.9	115.2	169.0	0.1	23.2	.359
L412900E-6172050N	87	119.8	3.9	1.6	1.5	8.5	.6	62.8	.2	51.1	13.7	14.4	8.9	.9	18.7	.2	3.2	14.6	1.3	461.0	23.0	110.1	213.0	0.9	12.6	.328
L412900E-6172100N	88	150.5	4.3	1.6	1.6	10.2	.6	83.3	.2	61.0	16.5	13.8	10.4	1.1	23.1	.2	4.8	14.2	1.1	490.0	34.4	135.1	148.0	0.6	7.1	.337
L412950E-6171900N	89	112.1	3.2	1.2	1.7	7.3	.5	61.6	.2	44.8	12.4	11.7	7.9	.8	15.6	.1	2.1	11.2	0.9	374.0	28.5	63.8	99.0	1.2	10.7	.282
L412950E-6171950N	90	151.7	4.9	2.2	1.9	10.0	.8	90.4	.3	59.7	16.8	15.3	10.2	1.1	19.9	.3	5.2	20.0	1.7	436.0	31.3	81.1	108.0	0.8	10.2	.263
L412950E-6172000N	91	097.8	2.5	1.1	1.1	6.0	.4	53.6	.1	38.8	10.7	10.3	6.5	.6	11.0	.1	1.7	9.5	0.9	355.0	21.6	61.2	135.0	0.2	11.9	.296
L412950E-6172050N	92	157.5	3.5	1.3	1.7	10.7	.5	82.2	.2	68.1	18.4	17.5	11.8	1.0	27.1	.1	4.2	11.1	0.9	454.0	15.9	201.2	60.0	0.4	5.2	.437
L412950E-6172100N	93	114.7	3.5	1.5	1.3	7.7	.5	59.6	.2	44.8	12.8	11.4	8.1	.8	17.0	.2	3.4	13.0	1.1	471.0	18.9	103.0	158.0	0.4	15.6	.334
L413000E-6171900N	94	085.5	2.3	1.0	1.1	5.4	.4	45.5	.1	32.8	9.4	12.5	5.7	.6	10.4	.1	1.3	8.7	0.8	384.0	16.6	72.2	105.0	0.2	14.5	.346
L413000E-6171950N	95	093.4	4.5	2.2	1.6	7.9	.8	50.4	.3	41.0	11.0	17.7	7.8	1.0	15.8	.3	4.1	20.1	1.8	414.0	16.4	77.9	125.0	0.1	17.5	.338
L413000E-6172000N	96	072.4	2.2	1.0	1.0	4.9	.4	36.9	.1	29.4	8.2	15.6	5.4	.5	9.3	.1	1.7	8.6	0.9	495.0	15.7	113.5	132.0	0.2	22.4	.311
L413000E-6172050N	97	088.5	3.1	1.3	1.1	6.2	.5	45.3	.2	36.2	9.8	14.4	6.6	.7	12.9	.2	3.4	11.9	1.1	444.0	18.9	133.1	126.0	0.5	19.2	.408
L413000E-6172100N	98	100.0	3.8	1.8	1.3	7.0	.7	51.8	.3	39.2	11.1	14.8	7.3	.8	13.8	.3	2.4	16.5	1.7	498.0	24.0	153.5	145.0	0.5	10.7	.423
L413250E-6171650N	99	099.3	5.5	2.4	2.0	10.0	1.0	70.1	.3	54.3	14.9	16.4	10.1	1.2	15.2	.3	6.3	25.3	1.9	405.0	19.2	84.2	138.0	0.1	17.0	.296
L413250E-6171700N	100	095.5	3.0	1.3	1.1	6.3	.5	51.8	.2	38.0	10.6	11.9	6.6	.7	12.6	.2	2.1	11.7	1.1	371.0	22.2	78.9	127.0	0.2	11.3	.291
L413250E-6171750N	101	450.4	7.0	3.0	3.2	17.5	1.1	319.4	.4	131.2	40.8	18.2	15.7	1.7	25.8	.4	3.7	27.0	2.3	553.0	51.0	94.9	212.0	0.4	10.5	.343
L413250E-6171800N	102	116.3	4.0	1.6	1.5	8.7	.6	58.5	.2	48.9	13.2	13.8	9.1	1.0	18.2	.2	3.3	14.8	1.1	390.0	17.2	89.5	115.0	0.4	8.1	.279
L413300E-6171600N	103	092.9	3.4	1.5	1.3	6.8	.6	52.3	.2	40.4	11.2	14.1	7.1	.8	11.4	.2	4.2	14.6	1.2	405.0	26.4	86.4	138.0	0.2	20.3	.348
L413300E-6171650N	104	090.2	2.7	1.2	1.1	6.0	.4	48.8	.2	36.1	9.9	12.9	6.3	.6	12.0	.1	2.4	10.6	0.9	400.0	15.4	89.2	120.0	0.2	12.3	.296
L413300E-6171700N	105	079.4	3.0	1.3	1.2	6.0	.5	45.3	.2	35.9	9.7	13.5	6.4	.7	10.9	.2	2.8	12.0	1.1	460.0	18.8	77.7	156.0	0.1	15.6	.296
L413300E-6171750N	106	118.9	4.2	1.7	1.6	9.0	.7	62.8	.2	51.0	13.5	13.5	9.4	1.0	17.9	.2	4.8	16.2	1.2	387.0	13.8	65.2	127.0	0.1	9.8	.250
L413300E-6171800N	107	121.0	4.6	2.0	1.5	9.1	.7	61.6	.2	49.9	13.6	13.7	9.5	1.1	19.7	.2	4.2	18.6	1.6	381.0	12.0	72.9	118.0	0.1	9.3	.259
L413350E-6171600N	108	085.8	2.7	1.2	1.1	5.9	.4	42.8	.2	35.5	9.7	12.7	6.3	.6	11.1	.2	2.0	11.0	1.1	367.0	32.6	72.5	126.0	0.3	24.4	.368
L413350E-6171650N	109	113.3	4.2	1.8	1.5	8.3	.7	64.3	.2	47.8	13.3	12.4	8.6	.9	15.0	.2	3.7	16.2	1.4	349.0	22.8	76.8	130.0	0.2	10.9	.289
L413350E-6171700N	110	088.9	3.4	1.5	1.3	6.6	.6	47.5	.2	38.2	10.4	14.4	7.0	.8	11.3	.2	3.0	14.2	1.2	424.0	18.5	100.4	128.0	1.3	12.0	.251
L413350E-6171750N	111	108.2	3.2	1.3	1.2	7.6	.5	56.9	.1	45.5	12.4	7.4	8.0	.8	17.2	.1	2.8	11.4	0.9	342.0	16.5	57.4	170.0	0.2	9.5	.272
L413350E-6171800N	112	085.8	3.3	1.5	1.2	6.5	.5	44.9	.2	36.7	9.9	11.9	6.7	.8	12.6	.2	2.9	13.4	1.1	378.0	15.6	68.3	120.0	0.1	27.2	.221
L413350E-6171850N	113	085.8	3.3	1.4	1.2	6.6	.5	45.0	.2	35.9	9.8	11.0	6.6	.7	13.1	.2	2.9	13.2	1.1	376.0	13.3	79.9	122.0	0.2	8.5	.262
L413400E-6171600N	114	132.2	11.4	4.3	4.1	20.3	1.8	110.9	.4	109.8	28.2	16.9	20.5	2.6	13.6	.5	14.1	44.5	2.9	361.0	12.2	69.2	146.0	<0.1	22.6	.281
L413400E-6171650N	115	078.5	6.6	3.1	2.1	10.8	1.2	59.7	.3	52.6	13.8	15.0	10.2	1.4	12.3	.4	16.1	34.1	2.2	404.0	26.7	71.3	158.0	0.1	21.1	.220
L413400E-6171700N	116	088.8	3.1	1.4	1.2	6.1	.5	47.2	.2	36.1	9.8	11.5	6.2	.7	11.1	.2	2.2	12.9	1.2	404.0	31.4	70.0	148.0	0.2	22.7	.298
L413400E-6171750N	117	092.9	3.1	1.4	1.3	6.5	.5	53.4	.2	38.7	10.7	13.0	6.8	.7	11.9	.2	2.9	12.7	1.1	520.0	20.3	98.3	143.0	0.7	17.3	.282
L413400E-6171800N	118	118.8	4.8	2.2	1.4	9.1	.8	61.3	.3	49.5	13.5	11.6	9.0	1.1	18.1	.3	3.5	20.5	1.8	396.0	15.2	82.2	171.0	0.5	10.1	.299
L413400E-6171850N	119	120.5	4.3	1.7	1.5	9.4	.6	63.1	.2	51.9	14.0	10.7	9.6	1.0	19.4	.2	3.4	16.2	1.3	471.0	26.1	113.0	164.0	0.6	9.5	.378
SUM		18814.9	554.6	233.5	212.8	1159.2	087.9	10157.8	027.3	6819.7	1973.1	1588.7	1169.4	125.8	2460.3	028.2	710.3	2115.6	175.9	61453.0	8963.5	11506.7	20888.0	206.6	2720.2	041.6
AVERAGE		316.2	009.3	003.9	003.6	019.5	001.5	170.7	000.5	114.6	033.2	026.7	019.7	002.1	041.3	000.5	011.9	035.6	003.0	1032.8	150.6	193.4	351.1	003.5	045.7	000.7

ELEMENT SAMPLE		Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sc ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
		ppm Ce	ppm Dy	ppm Er	ppm Eu	ppm Gd	ppm Ho	ppm La	ppm Lu	ppm Nd	ppm Pr	ppm Sc	ppm Sm	ppm Tb	ppm Th	ppm Tm	ppm U	ppm Y	ppm Yb	ppm Ba	ppm Nb	ppm Rb	ppm Sr	ppm Ta	ppm Zr	ppm Ti
L410650E-6174850N	1	202.7	3.6	1.8	1.8	8.3	.6	123.6	.2	66.3	19.9	11.4	8.2	.8	37.0	.2	5.3	16.0	1.4	552.0	562.2	65.3	217.0	10.5	52.0	.299
LON10-AR-1		001.1	<0.1	<0.1	<0.1	0.1	<0.1	.7	<0.1	.4	0.1	.8	.1	<0.1	.1	<0.1	0.1	0.2	<0.1	16.0	1.1	10.7	4.0	<0.1	1.1	.024
LON10-AR-2		002.9	0.1	0.1	<0.1	0.2	<0.1	1.5	<0.1	1.2	0.3	1.0	.2	<0.1	.5	<0.1	0.3	0.6	0.1	31.0	.6	8.7	4.0	<0.1	0.6	.023
LON10-AR-3		032.1	1.9	1.1	0.4	2.9	.4	14.5	.1	12.8	3.4	4.1	2.6	.4	4.6	.2	5.4	10.7	1.0	75.0	14.0	109.3	605.0	9.3	6.7	.098
LON10-AR-4		000.5	0.1	0.1	<0.1	0.1	<0.1	.6	<0.1	.3	0.1	9.2	.1	<0.1	.1	<0.1	0.4	1.4	0.1	11.0	.4	0.6	378.0	<0.1	0.7	.016
LON10-AR-5		000.7	0.1	0.1	<0.1	0.1	<0.1	.5	<0.1	.3	0.1	4.1	.1	<0.1	.1	<0.1	0.4	0.9	0.1	8.0	.3	1.0	97.0	<0.1	0.6	.010
LON10-AR-6		068.3	3.4	1.8	1.0	5.7	.6	34.0	.2	29.0	7.8	7.2	5.4	.7	8.3	.2	4.7	17.4	1.5	376.0	5.5	182.0	33.0	<0.1	7.5	.132
VIRG10-AR-1		022.1	1.2	0.7	0.3	1.8	.2	11.1	.1	9.0	2.4	2.8	1.7	.2	4.7	.1	0.7	6.3	0.5	205.0	5.8	34.2	49.0	<0.1	2.7	.066
VIRG10-AR-2		376.0	4.1	2.0	2.4	11.9	.7	253.2	.2	79.5	30.4	7.9	11.2	1.0	23.8	.2	1.4	15.8	1.6	490.0	69.0	26.0	72.0	1.2	5.7	.150

ADJACENT PROPERTIES

There are a number of active properties in the Manson Creek area. These are alluvial placer operations and the associated bedrock areas around them.

These properties have no significant influence on the Lonnie Claims.

OTHER RELEVANT INFORMATION

The Lonnie property is located in a remote part of north central British Columbia. Road access is available and, although gravel, the road is well maintained and in good condition.

The First Nations People are active in the Fort St. James area and have claims on much of this portion of the province.

Environmental concerns are no more urgent than they are in other parts of the province. There are no current environmental liabilities connected with the property. The area around Manson Creek is an active placer mining area with many operations in and around the village of Manson Creek. The populous of Manson Creek are tolerant of miners and mining operations and are not expected to make problems with respect to any mining developments.

Permitting with respect to the anticipated work on the property will be the standard for the industry with the standard Notice of Work application and notification will be required and the appropriate bonding put in place.

Testing for rare earth elements has come a long way in the past 20 years. ICP and AAS methods are more definitive than colorometric tests generally used in the 1970s.

Recent discoveries of the effectiveness of niobium in stabilizing the lithium hydride batteries used in battery powered automobiles has created a window of opportunity to develop a large market for niobium.

INTERPRETATION AND CONCLUSIONS

The Lonnie #1 deposit is reported to contain niobium in the order of 0.25% Nb (non compliant with NI 43-101 standards). Although this is low grade it does warrant further work to test for higher grade material along this structure. Five drill holes are recommended.

The Lonnie #2 deposit does not appear to contain sufficient niobium to develop an economically interesting deposit. The grades are well below the economic requirements for resource production. The western extension of this zone near Granite Creek has a strong geochemical anomaly which warrants further work. Trenching followed by drilling is recommended.

The Virgil deposit has received the least amount of attention possibly due to its lack of vehicular access. The soils survey indicates that the rare earth minerals are present and well enough defined to locate several drill holes to test the carbonatite. Three drill holes are recommended.

The five anomalous areas defined in the multi-element geochemistry warrant further investigation. A soils geochemistry surveys along strike is recommended followed by trenching and drilling.

The magnetic survey defined the regional shear structure which is thought to control the placement of the carbonatites. The definition of this shear structure has provided a locus for further work, which should be concentrated along this regional shear structure and more exactly along the eastern edge of this structure.

The two magnetic lows located on the western edge of the regional shear are believed to be mineralization of base metal minerals similar to the SEM showings rather than the carbonatite of the Lonnie and Virgil showings. Three trenches are recommended to further explore these magnetic lows.

Risk Analysis

The Lonnie #1 deposit and the Virgil deposit warrant further work to confirm the values reported in Open File 1990-32 and Bulletin 88. The work recommended for the property is early exploration work and should be considered high risk. A certain level of confidence with respect to the structure and the grades has been achieved based on the earlier results by others.

Site Inspection

The writer completed a site inspection of the property October 16th to October 18th, 2009. The writer reviewed the conditions at the site, together with his field geologist, outlined a soils survey to confirm the presence of the rare earth mineralization . A reconnaissance soils geochemistry survey was completed July 2010 by the field geologist. The details of this survey are included in this report. The property is in an early stage of development and the soils survey did not change the material facts with respect to the property. Beneficial information would not have been gained with another site visit.

Communications with American Manganese Inc. (Rocher Deboule Minerals Corp.) has confirmed that no further work has been done on the property.

The writer again visited the site on February 26th, 2011, in the company of the geophysicists during their airborne magnetic survey. The writer reviewed the conditions at the site, and noted no changes from the earlier visit.

RARE EARTH ELEMENTS

PRICES AS OF SEPTEMBER
2010

Element	Form	Price	Kilogram	Price	Gram
LANTHANUM	La^20^3	$ 37.00	/Kg	$ 0.037	/gm
CERIUM	Ce^20^3	$ 36.00	/Kg	$ 0.036	/gm
PRASEODYNIUM	Pr^2O^3	$ 55.75	/Kg	$ 0.056	/gm
NEODYNIUM	Nd^20^3	$ 59.75	/Kg	$ 0.060	/gm
SAMARIUM	Sm^20^3	$ 33.25	/Kg	$ 0.033	/gm
EUROPIUM	Eu^20^3	$ 595.00	/Kg	$ 0.595	/gm
GADOLINIUM	Gd^20^3	$ 40.00	/Kg	$ 0.040	/gm
TERBIUM	Tb^20^3	$ 595.00	/Kg	$ 0.595	/gm
DYSPROSIUM	Dy^20^3	$ 288.00	/Kg	$ 0.288	/gm
HOLMIUM	Ho^20^3	N/a	/Kg	n/a	/gm
ERBIUM	Er^20^3	N/a	/Kg	n/a	/gm
THULIUM	Tm^20^3	$3,000.00	/Kg	$ 3.000	/gm
YTTERBIUM	Yb^20^3	N/a	/Kg	n/a	/gm
LUTETIUM	Lu^20^3	$2,000.00	/Kg	$ 2.000	/gm
YTTRIUM	Y^20^3	$ 34.50	/Kg	$ 0.035	/gm
NIOBIUM/COLUMBIUM	Nb	$ 115.83	/Kg	$ 0.116	/gm

Prices taken from:

http://www.metalprices.com/FreeSite/metals/cb/cb.asp

RECOMMENDATIONS

Phase I

A program consisting of cleaning out the old trenches and drilling 5 new drill holes on the Lonnie #1 showings is recommended.

A program consisting of cleaning out the old trenches and drilling 3 drill holes on the Virgil showings is recommended.

A soils geochemistry survey is recommended to fill-in that area between the known showings. A pattern of sampling 1400 meters wide on 50 meter spacing and a length of 5600 meters on 100 meter spacing covering a corridor over the full width of the carbonatites for the full length of the property is recommended. This would involve 1568 samples. A sampling crew should be able to collect 100 samples per day making this a 16 day program. The geochemistry is to be plotted up and the anomalies analyzed.

The geochemical anomalies should be followed up with surface trenching using a small backhoe to expose the bedrock. A total of 10 trenches of 200 meters each requiring 10 samples per trench or 100 samples is projected depending on the results of the geochemistry survey. These are marked up on Figure #6 (see Map Packet).

- Trench #1 -- 410737E, 6174832N. 180 meters at Az.42deg.
- Trench #2 – 410703E, 6174868N. 180 meters at Az.42deg.
- Trench #3 -- 410669E, 6174906N. 180 meters at Az.42deg.
- Trench #4 – 410638E, 6174943N. 180 meters at Az.42deg.
- Trench #5 -- 410604e, 6174980N. 180 meters at Az.42deg.
- Trench #6 -- 412425E, 6172987N. 180 meters at Az.42deg.
- Trench #7 -- 412565E, 6172078N. 180 meters at Az.42deg.
- Trench #8 -- 412555E, 6172132N. 180 meters at Az.42deg.
- Trench #9 -- 413194E, 6171706N. 180 meters at Az.42deg.
- Trench #10 -- 413297E, 6171501N. 180 meters at Az.42deg.

Five holes are laid out for the Lonnie #1 showing.

These are a follows:

- 412953E, 6171120N. 200 meters at Az. 42 deg., dip –60 deg.
- 412892E, 6171134N. 200 meters at Az. 42 deg., dip –60 deg.
- 412853E, 6171165N. 200 meters at Az. 42 deg., dip –60 deg.
- 412818E, 6171198N. 200 meters at Az. 42 deg., dip –60 deg.
- 412785E, 6171241N. 200 meters at Az. 42 deg., dip –60 deg.

Phase II

Phase II will be contingent on the positive results from Phase I

Three holes are laid out for the Virgil showings.

These are as follows

- 410703E, 6174868N. 200 meters at Az. 42 deg., dip –60 deg.
- 410669E, 6174906N. 200 meters at Az. 42 deg., dip –60 deg.
- 410638E, 6174943N. 200 meters at Az. 42 deg., dip –60 deg.

Three trenches are recommended for the “Blue Spot” magnetic anomalies .

- Trench #11 – 411275E, 6173314N. 200 meters at Az.60deg.
- Trench #12 – 411340E, 6173230N. 200 meters at Az.60deg.
- Trench #13 – 411420E, 6173080N. 150 meters at Az.60deg.

Depending on the results of the trench sampling, each significant showing should be drilled. Assuming 5 anomalous areas in the trenching and one, 150 meter hole on each would require 5 drill holes or 750 meters of drilling.

Budget

Phase I

Clean out trenches		
Mobilization of men and equipment	$	2,500
Trench clean up four days at $1000/day		
2 men and one supervisor	$	4,000
Geological work on trenches 2 days	$	1,600
Assays 100 samples at $25	$	2,500
Soils geochemistry survey		
2 men 16 days or 32 man days		
@ $400 per man per day all in.	$	12,800
Sample assaying @ $25 /sample		
for 1600 samples	$	40,000
Plotting and drafting soils results	$	5,000
Trenching at 15 days $1000/day	$	15,000
Sampling/Geological –		
2 men for 8 days @$400/manday	$	6,400
Assaying 150 samples @ $25	$	3,750
Drilling mobilization and demobilization	$	20,000
Lonnie #1 Drilling 5 holes to 200 meters = 1000 meters		
@ $100 meter	$	100,000
Assaying 100 at $25	$	2,500
Geological supervision - 8 days at $600	$	4,800
	==================	
	$	220,850
	==================	

Phase II

Virgil Drilling	3 holes to 200 meters = 600 meters		
	At $100 meter	$	60,000
Assaying	60 at $25	$	1,500
Geological	4 days at $600	$	2,400
Drilling the Geochem/Trenching anomalies			
	5 holes at 150 meters each		
	750 meters or 6 days @$100/meter	$	75,000
Supervision 20 days at $800/day		$	16,000
Assaying 300 samples @$25		$	7,450
Reporting NI43-101		$	30,000
	Total Phase II	$	192,350
	Total	$	413,200
	Contingencies at 15%	$	61,980
	Grand Total	$	475,180

REFERENCES

Armstrong, J, E. Lang, A.H. and Thurber, J.B. (1946) G.S.C. Map 876, Manson Creek, Scale 1:253,340.

Armstrong J. E. (1946) Fort St. James Area, Cassiar and Coast District, B.C. G.S.C. Memoir 252.

Belik, G. D. (2002) Geochemical and Geological Report on the Floyd Mineral Claims.

Dawson K. R. Niobium (Columbium) and Tantalum in Canada G.S.C. Economic Geology Report No 29.

Sookochoff, L. (1982) Geological Report on the Wolverine Claim Group. Private Report for Golden Slipper Resources, Inc.

Stokes R. B. (1978) Report on the Lonnie/Pitch Claims Manson Creek Area Private report for Molymite Mines Inc.

DATE AND SIGNATURE PAGE

Respectfully submitted this 10th day of March 2011, at Kelowna, B.C..

N. L. TRIBE

N.L.Tribe, P.Eng.

CERTIFICATE

I, NORMAN LLOYD TRIBE, P. Eng., of 2611 Springfield Rd. in the City of Kelowna, Province of British Columbia, hereby certify as follows:

I am a Consulting Professional Geological Engineer registered (#11,330) with the Association of Professional Engineers and Geoscientists of British Columbia since 1978.

I am a Consulting Geologist with an office at 2611 Springfield Road, Kelowna, B.C., V1X 1B9.

I am independent of Rara Terra Capital Corp. and American Manganese Inc. as defined in Section 1.4 of NI 43-101. I have no interest, past or present either company or in the Lonnie property nor do I have any intention of having any interest in the future. I have not had prior involvement with the property that is the subject of the Technical Report.

I am a registered Professional Engineer of the Province of British Columbia.
I graduated with a degree of Bachelor of Applied Science in geological Engineering, from the University of British Columbia in 1964.

I have worked as a geological engineer for a total of 45 years since my graduation from the University of B.C. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

Although I have no experience in Rare Earth Element mineralization or carbonatites in particular I have wide ranging experience in the type of sill like structures noted a hosting the carbonatites of the Lonnie property. My experience in property evaluation has covered more than 50 countries and hundreds of properties throughout the world. I have extensive knowledge of sampling and assay techniques more than adequate to evaluate a property at its preliminary stage of development.

I am responsible for the technical report entitled "MINERAL RESOURCE EVALUATION REPORT ON THE LONNIE NIOBIUM PROPERTY" dated March 10, 2011 relating to the Lonnie Property in North Central British Columbia Canada. I visited the Lonnie property on October 16th, 17th and 18th of October, 2009, for three days and on February 25th and 26th, 2011. I am responsible for all the items in the report including supervising the geochem survey and geophysical survey and a review of the information published in the B.C. Minefiles.

I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

This report dated March 10th, 2011 is based on data collected from published sources, from the files of Rocher Deboule Minerals Corp., and Rara Terra Capital Corporation and by the writer during visits to the property October 16th to October 18th inclusive 2009 and February 25th and 26th 2011.

Dated at Kelowna, Province of British Columbia this 10th day of March, 2011.

Signed and sealed: *"Norman Lloyd Tribe"*

Norman Lloyd Tribe, P. Eng. Consulting Geologist.
Email: nta@shaw.ca
Tel: (250) 860 7661

CONSENT of AUTHOR

TO: B.C. Securities Commission, and the TSX Venture Exchange.

I, Norman Tribe, P. Eng., do hereby consent to the filing of the written disclosure of the technical report titled "MINERAL RESOURCE EVALUATION REPORT ON THE LONNIE NIOBIUM PROPERTY" and dated March 10th, 2011 and any extracts from or a summary of the Technical Report in any Statement of Material Facts and news releases of Rara Terra Capital Corp., and to the filing of the Technical Report with the securities regulatory authorities referred to above.

I also certify that I have read the written disclosure being filed and I do not have any reason to believe that there are any misrepresentations in the information derived from the Technical Report or that the written disclosure in the filings with SEDAR made for the purpose of continuous disclosure of the activities of Rara Terra Capital Corp., contains any misrepresentation of the information contained in the Technical Report.

Dated this 10th day of March, 2011.

Norman Tribe, P. Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
N. L. TRIBE

Appendix I

Title Documents.

Tenure Detail

Tenure Number ID	**559717**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2007/jun/02
Termination Comments	
Termination Date	
Tag Number	
Claim Name	VERGIL PROSPECT
Old Tenure Code	
Area In Hectares	18.22

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:

Submitter	Event	Effective Date
146571 FUNK, KELLY BRENT	CEXT(4151364)	2007/JUN/01
146571 FUNK, KELLY BRENT	BSLI(4171414)	2007/SEP/25
119404 ROCHER DEBOULE MINERALS CORP.	BSLC(4171419)	2007/SEP/25
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4218796)	2008/JUN/02
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4284741)	2009/MAY/27
119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**563966**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2007/aug/01
Termination Comments	
Termination Date	
Tag Number	
Claim Name	RARE
Old Tenure Code	
Area In Hectares	91.13

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:

Submitter	Event	Effective Date
119404 ROCHER DEBOULE MINERALS CORP.	CEXT(4162013)	2007/AUG/01
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4229460)	2008/JUL/30
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4307479)	2009/JUL/31
119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**564009**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	·
Good To Date	2015/jul/31
Issue Date	2007/aug/01
Termination Comments	
Termination Date	
Tag Number	
Claim Name	RARE1
Old Tenure Code	
Area In Hectares	164.05

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:

Submitter	Event	Effective Date
119404 ROCHER DEBOULE MINERALS CORP.	CEXT(4162096)	2007/AUG/01
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4229460)	2008/JUL/30
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4307479)	2009/JUL/31
119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**639286**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2009/sep/23
Termination Comments	
Termination Date	
Tag Number	
Claim Name	RDLON
Old Tenure Code	
Area In Hectares	364.61

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:	Submitter	Event	Effective Date
	119404 ROCHER DEBOULE MINERALS CORP.	CEXT(4352936)	2009/SEP/23
	119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**595332**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2008/dec/02
Termination Comments	
Termination Date	
Tag Number	
Claim Name	RD_NIOBIUM
Old Tenure Code	
Area In Hectares	328.23

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:	Submitter	Event	Effective Date
	119404 ROCHER DEBOULE MINERALS CORP.	CEXT(4249799)	2008/DEC/02
	119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**639283**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	.
Good To Date	2015/jul/31
Issue Date	2009/sep/23
Termination Comments	
Termination Date	
Tag Number	
Claim Name	RDVIR
Old Tenure Code	
Area In Hectares	328.26

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:

Submitter	Event	Effective Date
119404 ROCHER DEBOULE MINERALS CORP.	CEXT(4352928)	2009/SEP/23
119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**564093**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2007/aug/03
Termination Comments	
Termination Date	
Tag Number	
Claim Name	LONNIE
Old Tenure Code	
Area In Hectares	127.69

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:

Submitter	Event	Effective Date
146911 KRESS, DWAYNE EDWARD	AMAL(4162902)	2007/AUG/03
146911 KRESS, DWAYNE EDWARD	CIL(4162903)	2007/AUG/03
146911 KRESS, DWAYNE EDWARD	BSLI(4172736)	2007/OCT/02
119404 ROCHER DEBOULE MINERALS CORP.	BSLC(4172740)	2007/OCT/02
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4233564)	2008/AUG/28
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4247742)	2008/NOV/21
119404 ROCHER DEBOULE MINERALS CORP.	CIL(4284741)	2009/MAY/27
119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Tenure Detail

Tenure Number ID	**565354**
Termination Type	
Title Type	MCX
Tenure Sub Type	C
Tenure Type	M
Mining Division	
Good To Date	2015/jul/31
Issue Date	2007/aug/29
Termination Comments	
Termination Date	
Tag Number	
Claim Name	GAM
Old Tenure Code	
Area In Hectares	182.43

Map Numbers:

093N

Owners:

119404 ROCHER DEBOULE MINERALS CORP. 100.0%

Tenure Events:	Submitter	Event	Effective Date
	146911 KRESS, DWAYNE EDWARD	CEXT(4167248)	2007/AUG/29
	146911 KRESS, DWAYNE EDWARD	BSLI(4172736)	2007/OCT/02
	119404 ROCHER DEBOULE MINERALS CORP.	BSLC(4172740)	2007/OCT/02
	119404 ROCHER DEBOULE MINERALS CORP.	CIL(4231565)	2008/AUG/13
	119404 ROCHER DEBOULE MINERALS CORP.	CIL(4247742)	2008/NOV/21
	119404 ROCHER DEBOULE MINERALS CORP.	CIL(4284741)	2009/MAY/27
	119404 ROCHER DEBOULE MINERALS CORP.	SOW(4411111)	2009/NOV/25

Appendix II

Assay Certificates

PIONEER LABORATORIES I

#103-2691 VISCOUNT WAY RICHMOND, BC CANADA V6V 2R5

TELEPHONE (604) 231-81

GEOCHEMICAL ANALYSIS CERTIFICATE

ROCHER DEBOULE MINERALS INC.
Project: Loonie
Sample Type: Soils/Cores/Rocks

Analysis by LiBO2 fusions, ICP/MS finished.

Analyst
Report No. 2092474
Date: December 14 2009

LEMENT AMPLE	Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
2600E 2100N	189.6	9.7	5.4	2.2	14.1	1.9	99.1	.7	80.1	21.6	13.7	1.8	28.6	.8	7.5 55	54.6	4.8	484.1	41.5	86.5	187.9	1.8	360.6	.401
2600E 2125N	138.8	5.3	3.0	1.5	8.1	1.0	66.0	.4	46.5	13.4	7.9	1.0	14.6	.4	4.4 29	29.3	2.7	532.0	43.6	102.1	179.1	1.7	296.1	.381
2600E 2150N	101.4	5.6	3.1	1.5	7.7	1.1	52.6	.4	41.2	11.2	7.4	1.0	13.8	.4	5.8 31	31.2	2.7	573.5	29.6	91.5	176.2	1.6	223.5	.345
2600E 2175N	356.3	16.8	7.8	2.8	28.9	2.9	174.1	.9	160.7	42.3	28.9	3.5	84.1	1.0	19.5 81	81.1	6.2	382.7	105.8	90.6	170.5	2.4	571.7	.341
2600E 2200N	46.1	4.0	2.4	.8	4.2	.8	22.6	.3	19.5	5.3	4.1	.7	9.5	.3	2.4 24	23.7	2.1	408.0	20.8	77.3	125.2	1.7	91.2	.154
2600E 2225N	102.7	8.0	4.2	2.3	11.1	1.5	68.9	.5	56.8	15.4	10.6	1.5	12.7	.5	10.1 45	44.7	3.4	515.7	33.5	90.4	196.4	1.4	258.1	.349
2600E 2250N	107.7	7.8	4.0	2.3	10.4	1.5	61.9	.5	50.1	13.9	9.9	1.4	11.6	.5	10.5 41	41.1	3.4	542.5	38.0	79.6	196.2	1.5	247.6	.354
2600E 2275N	107.2	5.5	3.1	1.5	7.1	1.1	55.1	.4	39.6	11.2	6.9	1.0	13.8	.4	3.3 31	31.2	2.8	631.7	42.9	92.4	175.5	2.1	299.3	.384
2600E 2300N	126.3	4.9	3.0	1.5	7.1	1.0	63.6	.4	43.9	12.5	7.1	.9	13.3	.4	3.4 29	28.7	2.8	567.4	53.6	90.8	174.5	1.8	293.8	.430
2700E 2100N	115.6	5.5	2.9	1.4	8.3	1.0	54.3	.4	45.0	12.5	8.3	1.1	17.1	.4	6.2 29	29.4	2.6	490.2	21.7	129.1	170.8	1.9	233.6	.327
2700E 2125N	121.3	5.0	2.9	1.4	7.5	1.0	56.3	.4	44.9	12.2	7.4	.9	13.9	.4	3.8 28	27.6	2.5	581.6	37.0	107.6	178.6	2.0	238.0	.396
2700E 2150N	138.1	6.5	3.6	1.5	9.1	1.2	66.4	.5	53.0	14.8	9.5	1.2	20.8	.5	5.1 36	35.9	3.2	471.4	24.9	111.5	161.3	1.8	281.6	.319
2700E 2175N	135.4	24.1	12.2	6.5	31.1	4.5	110.0	1.7	116.4	28.8	26.9	4.3	20.1	1.6	23.1 ##	150.4	10.5	540.8	28.1	122.3	200.9	1.8	174.9	.361
2700E 2200N	118.1	5.1	2.9	1.4	7.3	1.0	60.7	.4	42.5	12.4	7.3	.9	13.8	.4	4.5 29	28.8	2.7	491.9	33.8	110.0	307.3	2.0	280.5	.418
2700E 2225N	160.0	12.9	5.9	3.5	18.5	2.3	73.6	.7	82.8	19.8	16.5	2.4	17.7	.8	24.5 63	63.3	4.7	510.8	37.4	119.0	196.8	1.5	216.6	.431
2700E 2250N	112.7	4.2	2.3	1.2	6.6	.8	49.6	.3	36.8	10.6	6.5	.8	13.0	.3	4.2 22	22.4	2.1	630.2	33.6	117.3	177.2	1.7	266.2	.422
2800E 2050N	119.1	5.1	3.2	1.3	6.7	1.0	61.9	.5	39.4	11.3	6.4	.9	11.5	.5	3.1 31	31.0	3.2	647.1	60.5	96.1	186.0	1.8	307.4	.422
2800E 2075N	116.9	5.4	3.1	1.4	7.8	1.1	54.5	.4	46.4	12.5	7.9	1.0	14.0	.4	3.6 30	30.4	2.8	550.7	32.3	99.0	188.6	2.1	270.8	.365
800E 2100N	124.0	7.9	4.6	2.2	10.9	1.6	66.0	.7	52.4	14.3	10.2	1.4	15.7	.7	7.1 52	51.7	4.6	515.4	30.3	90.9	207.2	1.8	339.4	.395
800E 2125N	101.3	6.5	3.4	1.7	8.8	1.2	50.2	.4	42.8	11.6	8.3	1.2	13.5	.5	9.0 34	34.2	2.9	534.0	35.2	125.7	261.3	2.2	224.5	.430
800E 2150N	123.1	5.9	3.0	1.7	8.7	1.1	64.8	.4	46.4	13.3	8.4	1.1	12.5	.4	8.2 30	30.1	2.5	582.1	45.2	125.1	199.9	1.8	259.3	.456
800E 2175N	118.0	6.1	3.5	1.7	8.6	1.2	61.0	.5	44.3	12.7	7.9	1.1	12.8	.5	6.4 35	34.8	3.1	567.0	43.1	108.3	208.9	1.9	315.3	.419
800E 2200N	204.9	7.0	3.9	1.8	13.4	1.4	82.5	.6	81.4	19.4	13.3	1.5	28.0	.6	7.0 40	39.5	3.5	620.1	36.1	199.1	217.0	1.8	500.0	.515
900E 2000N	128.3	7.0	3.9	1.6	9.9	1.4	66.1	.5	56.8	15.4	9.7	1.4	22.7	.6	5.5 40	39.7	3.3	506.9	31.6	107.0	210.5	1.6	299.8	.342
900E 2025N	109.2	5.2	2.8	1.6	7.9	1.1	59.3	.4	45.5	13.0	7.9	1.1	15.2	.4	6.5 28	28.1	2.5	549.6	37.3	106.0	232.6	1.9	310.1	.369
900E 2050N	144.5	6.8	3.7	1.8	10.3	1.4	72.4	.5	62.6	17.1	10.5	1.4	21.6	.5	7.3 37	37.0	3.2	559.4	26.7	183.9	177.4	1.7	259.5	.442
900E 2075N	148.3	5.5	2.9	1.5	9.1	1.1	82.8	.4	59.7	16.7	9.0	1.2	20.6	.4	4.8 29	29.3	2.6	547.5	45.4	114.9	246.1	1.7	350.1	.375
900E 2100N	132.4	6.2	3.5	1.5	9.4	1.3	69.2	.5	55.8	15.4	8.9	1.3	19.4	.5	5.1 35	35.4	3.1	508.8	35.1	136.4	197.2	1.8	289.1	.375
900E 2125N	143.3	6.3	3.2	1.6	10.5	1.2	72.4	.5	61.1	17.3	11.0	1.4	24.3	.5	6.4 34	33.5	2.8	495.7	26.4	137.1	177.8	1.8	326.9	.368
900E 2150N	119.6	5.5	3.2	1.5	7.9	1.2	67.3	.5	48.9	13.8	7.5	1.1	14.6	.5	6.5 31	31.2	2.8	531.9	41.2	127.7	234.8	1.6	299.2	.391

ELEMENT SAMPLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	pp	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	ppn	Ti %
ELEMENT SAMPLE	Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
L2900E 2175N	17.7	1.1	.5	.3	1.4	.2	9.8	.1	8.5	2.5	1.7	.2	2.4	.1	3.4 6	5.6	.4	188.0	3.7	29.6	93.5	.2	44.8	.075
L2900E 2200N	114.9	4.6	2.7	1.4	6.8	1.0	60.3	.4	43.7	12.7	6.9	.9	14.0	.4	3.4 26	26.4	2.6	618.0	57.4	103.9	234.3	3.0	365.1	.404
L2900E 2225N	112.9	4.2	2.3	1.3	7.2	.8	60.2	.4	48.1	13.4	7.6	.9	12.4	.3	4.7 22	22.3	2.1	520.3	34.6	143.6	191.7	1.6	246.5	.352
L2900E 2250N	151.1	5.9	3.2	1.7	9.5	1.2	75.2	.5	60.6	17.1	9.9	1.3	18.8	.5	7.3 31	31.4	2.9	525.2	44.1	102.6	210.3	1.8	342.8	.365
L2900E 2275N	141.5	5.7	3.1	1.6	9.4	1.1	73.1	.5	59.6	16.4	9.6	1.2	20.2	.5	5.9 30	29.9	2.8	592.8	40.7	113.5	222.0	2.3	411.6	.404
L2900E 2300N	128.4	5.4	3.1	1.4	8.7	1.1	61.7	.5	52.4	14.4	8.7	1.1	19.4	.5	6.2 29	29.4	2.8	515.2	56.1	130.0	232.4	2.6	348.2	.484
L3000E 2200N	121.3	4.7	2.6	1.4	7.8	1.0	68.0	.4	50.7	14.1	7.6	1.0	18.6	.4	4.5 25	24.5	2.3	626.8	39.6	106.1	184.2	1.7	306.9	.420
L3000E 2225N	208.8	7.8	3.9	2.0	14.4	1.5	94.7	.6	85.5	23.8	14.3	1.8	42.7	.6	7.8 38	38.1	3.2	618.7	48.2	158.1	186.8	2.2	454.7	.568
.3000E 2250N	130.2	5.2	2.7	1.5	8.7	1.0	57.4	.4	50.6	13.6	8.7	1.1	18.2	.4	5.4 26	25.5	2.4	486.4	36.3	132.6	260.6	1.8	234.1	.593
.3000E 2275N	84.9	3.9	2.3	1.2	5.8	.8	45.5	.4	35.6	10.0	5.6	.8	11.4	.4	3.3 22	21.6	2.3	538.5	51.3	83.0	223.8	1.6	279.5	.435
.3000E 2300N	127.8	5.3	3.2	1.4	8.5	1.1	68.5	.5	52.0	14.8	8.0	1.1	17.3	.5	5.1 29	29.0	2.8	557.4	42.9	154.8	202.3	2.2	308.7	.423
.3100E 2200N	94.3	5.6	3.3	1.4	7.3	1.2	50.4	.5	40.2	11.2	6.6	1.1	13.2	.5	4.1 31	31.4	2.9	598.5	37.4	106.5	226.0	1.7	297.1	.409
.3100E 2225N	125.5	5.2	3.2	1.4	7.7	1.1	68.2	.5	47.1	13.7	7.4	1.0	16.1	.5	4.8 30	30.0	3.1	544.3	49.8	157.6	193.4	2.5	351.7	.468
.3100E 2250N	101.9	5.4	3.1	1.4	7.5	1.1	53.7	.5	43.2	11.8	7.2	1.1	14.7	.5	4.0 29	29.3	2.8	492.9	30.6	119.2	210.3	1.6	296.1	.502
.3100E 2275N	100.7	5.3	3.1	1.4	8.1	1.0	63.6	.4	46.9	12.9	7.5	1.0	14.6	.4	3.9 28	26.4	2.8	538.4	29.1	138.4	262.2	1.7	314.4	.610
3100E 2300N	113.7	5.3	2.7	1.6	9.1	1.0	67.3	.4	52.1	14.5	8.7	1.0	18.2	.4	5.8 27	27.2	2.6	557.7	58.4	187.6	•241.1	2.6	381.1	.515
57951	76.2	4.6	2.5	1.2	6.9	.9	42.2	.3	36.6	10.1	6.4	.9	12.5	.3	2.7 26	25.5	2.3	353.1	21.4	152.8	1057.3	1.6	123.1	.308
57952	69.7	4.2	2.3	1.1	6.2	.8	40.8	.3	33.9	9.4	6.2	.8	12.3	.3	2.9 23	23.0	2.1	324.1	16.3	132.1	1531.7	1.7	112.4	.282
57953	81.3	4.8	2.6	1.3	6.8	.9	44.1	.4	35.9	10.2	6.7	.9	13.3	.4	3.4 26	26.0	2.4	312.0	20.7	128.2	1047.8	1.6	126.0	.314
57954	79.9	5.3	3.0	1.4	7.4	1.0	44.5	.4	38.8	10.7	7.1	1.0	13.5	.4	5.6 29	29.3	2.6	232.2	38.4	131.9	921.3	4.7	137.5	.325
57955	10.3	1.4	.6	.1	1.2	.2	5.5	.1	4.8	1.4	1.1	.2	1.9	.1	4.5 8	8.1	.7	50.7	14.5	152.5	274.5	5.7	29.5	.046
57956	12.1	1.5	.7	.1	1.3	.3	6.8	.1	5.7	1.7	1.3	.2	2.3	.1	3.6 9	9.4	1.0	59.7	10.4	197.6	301.2	4.5	44.0	.043
57957	74.8	4.4	2.3	1.3	6.6	.8	39.6	.3	34.7	9.4	6.4	.8	12.0	.3	4.2 23	23.3	2.2	330.5	18.8	142.5	913.5	2.1	117.6	.319
57958	78.5	4.4	2.6	1.2	6.5	.9	42.1	.4	36.8	9.8	6.5	.8	15.0	.4	3.3 24	24.2	2.4	358.7	16.1	173.8	191.5	1.3	205.2	.363
57959	38.9	2.5	1.4	.5	3.1	.5	18.6	.2	15.7	4.4	3.0	.4	8.2	.2	2.3 14	14.1	1.3	151.4	14.0	255.2	85.0	4.7	132.2	.175
57961	10.2	1.4	.7	.2	1.4	.2	6.8	.1	6.6	1.7	1.3	.2	2.6	.1	3.5 8	7.6	.7	61.0	19.6	237.0	384.5	6.2	39.4	.057
57962	53.0	3.4	2.0	1.0	4.8	.7	28.4	.3	26.3	6.8	4.8	.6	9.3	.3	3.4 18	18.1	1.8	367.5	11.7	106.4	763.8	1.3	126.6	.264
57963	69.1	4.2	2.3	1.2	5.7	.8	36.8	.3	29.9	8.5	5.6	.7	13.2	.3	3.4 21	21.0	2.1	439.4	11.9	134.7	102.9	1.1	188.4	.357
57964	51.9	3.2	1.9	.9	4.7	.6	27.6	.3	24.4	6.5	4.5	.6	11.5	.3	3.6 17	17.0	1.8	398.3	8.5	115.6	104.0	1.0	204.0	.296
57965	47.0	3.1	1.8	.9	4.3	.6	24.7	.3	21.2	5.9	4.1	.6	9.4	.3	3.9 16	16.4	1.7	372.5	13.5	193.6	97.7	2.8	150.6	.266
57966	73.0	4.7	2.6	1.2	6.5	.9	39.6	.4	34.3	9.2	6.4	.8	13.0	.4	3.7 23	23.2	2.5	202.2	18.6	75.4	834.2	1.4	144.0	.332
57967	91.6	5.6	3.1	1.4	8.0	1.1	48.1	.4	43.1	11.6	7.6	1.0	15.6	.4	3.5 28	27.6	2.9	21.1	24.4	12.8	932.8	1.7	157.0	.325
57968	65.0	3.9	2.2	1.0	5.6	.8	36.3	.3	30.4	8.4	5.7	.7	11.4	.3	3.0 20	19.7	2.1	96.4	22.9	99.5	751.6	2.7	110.2	.243
57969	21.6	1.7	1.0	.3	2.0	.4	11.0	.1	10.8	2.8	1.9	.3	4.7	.1	1.2 9	9.1	.9	124.8	1.5	44.5	23.0	.3	53.2	.100
7970	11.2	1.5	.6	.2	1.3	.2	5.4	.1	4.9	1.4	1.2	.2	2.1	.1	16.0 7	7.2	.6	81.2	22.5	301.3	35.8	7.4	36.6	.046
7971	24.7	2.2	1.1	.5	2.6	.4	13.7	.2	12.1	3.2	2.4	.4	5.3	.2	19.3 13	12.7	1.1	244.8	15.6	259.1	62.9	3.5	103.3	.137
7972	34.3	2.1	1.2	.6	2.8	.4	18.0	.2	15.0	4.1	2.8	.4	6.6	.2	8.7 12	12.0	1.2	312.8	20.7	242.4	87.2	6.2	131.2	.188
7975	53.9	3.0	1.7	.8	4.3	.6	28.3	.2	23.4	6.3	4.1	.5	6.9	.2	2.7 16	16.2	1.6	222.2	16.0	57.2	706.3	1.4	74.2	.200
7976	84.4	4.8	2.7	1.3	7.2	.9	45.8	.4	39.6	10.4	6.7	.9	12.0	.4	2.8 26	25.6	2.5	275.5	20.2	105.2	1066.5	1.8	122.0	.286

EMENT MPLE EMENT MPLE	ppm	Dy ppm Dy ppm	Er ppm Er ppm	Eu ppm Eu ppm	Gd ppm Gd ppm	Ho ppm Ho ppm	La ppm La ppm	Lu ppm Lu ppm	Nd ppm Nd ppm	Pr ppm Pr ppm	Sm ppm Sm ppm	Tb ppm Tb ppm	Th ppm	Tm m n ppm	U ppm U ppm	Y ppm Y ppm	Yb ppm Yb ppm	Ba ppm Ba ppm	Nb ppm Nb ppm	Rb ppm Rb ppm	Sr ppm Sr ppm	Ta ppm Ta ppm	Zr ppr Zr ppm	Ti % Ti %
7977	56.7	3.4	2.0	1.0	5.2	.7	33.1	.3	28.4	7.5	5.0	.7	9.4	.3	2.2 18	18.3	1.8	278.4	14.5	96.3	1459.8	1.4	97.7	.228
7978	79.8	4.8	2.7	1.3	6.9	.9	48.7	.4	39.3	10.5	7.1	.9	13.7	.4	2.7 25	24.9	2.5	320.0	17.3	135.1	1366.0	1.3	108.7	.298
7979	83.5	4.7	2.7	1.3	7.0	.9	49.9	.4	38.7	10.7	7.0	.9	13.9	.4	2.6 25	24.9	2.4	309.9	17.2	127.8	1533.8	1.3	111.0	.290
7980	87.5	3.9	2.2	1.0	5.8	.7	39.4	.3	31.5	8.6	5.5	.7	10.5	.3	3.9 21	20.5	2.0	274.0	14.4	193.5	1222.5	2.4	94.1	.218
7981	91.1	5.4	3.1	1.4	7.6	1.0	55.9	.4	43.8	11.5	7.7	1.0	15.7	.4	3.1 28	27.7	2.9	387.6	18.4	130.0	1223.1	1.4	142.9	.314
7982	77.1	4.4	2.4	1.2	6.4	.8	45.2	.3	34.1	9.6	6.2	.8	12.2	.3	3.6 23	22.8	2.2	290.4	25.6	157.3	848.3	4.9	110.1	.265
7983	82.3	4.5	2.5	1.3	6.6	.9	43.7	.3	35.1	9.8	6.4	.8	12.1	.4	2.8 23	23.2	2.3	328.8	17.5	126.0	1219.5	1.4	121.9	.288
7984	79.0	5.1	2.8	1.3	6.8	1.0	46.1	.4	36.6	10.1	6.8	.9	12.8	.4	4.2 26	26.2	2.7	366.0	20.1	157.8	1063.6	4.1	108.3	.273
7985	48.1	3.2	1.8	.9	4.2	.6	25.9	.2	21.2	5.7	4.1	.6	6.8	.3	2.2 16	16.1	1.6	228.8	10.6	121.9	1180.2	1.8	75.7	.374
7986	64.3	3.9	2.2	1.2	5.6	.8	33.8	.3	28.5	7.6	5.4	.7	9.3	.3	2.6 19	19.2	1.9	273.1	16.1	138.5	1413.7	3.0	88.9	.310
7987	83.8	4.9	2.7	1.4	7.3	.9	44.8	.4	38.0	10.3	6.9	.9	12.5	.4	2.8 25	24.9	2.5	340.9	19.3	199.4	896.5	1.6	121.4	389
7988	70.3	4.0	2.3	1.1	5.7	.8	36.9	.3	30.2	8.3	5.4	.7	10.1	.3	3.3 21	20.6	2.1	341.6	22.2	160.3	1185.2	4.6	102.6	.247
7989	52.6	3.4	1.8	1.2	4.9	.6	28.5	.2	25.0	6.5	4.7	.6	8.2	.3	3.3 17	16.6	1.7	292.4	16.6	127.4	1129.6	2.5	83.1	.197
7990	78.8	4.3	2.4	1.7	6.6	.8	43.5	.3	36.5	9.8	6.7	.8	11.8	.3	3.1 21	21.2	2.1	377.2	20.9	136.2	734.3	2.0	106.0	.310
991	54.1	2.9	1.6	1.7	4.2	.5	27.1	.2	22.4	6.0	4.0	.5	8.8	.2	5.4 14	14.2	1.5	235.7	11.9	224.1	229.3	2.6	138.3	210
992	76.1	4.0	2.1	1.2	6.2	.7	44.1	.3	36.0	9.6	6.3	.8	13.2	.3	2.6 19	19.1	2.0	356.7	13.0	138.8	324.7	1.1	151.0	.295
993	70.7	3.5	2.0	1.1	5.8	.7	34.2	.3	31.1	8.0	5.4	.7	12.6	.3	3.2 20	20	1.9	368.1	12.7	134.7	288.4	1.0	132.1	.322
995	1.9	1.2	.5	.1	1.1	.2	7.0	.1	3.2	.9	.8	.2	3.0	.1	1.8 7	7.4	.5	71.0	8.5	211.0	317.5	2.6	24.0	.010
996	32.8	2.2	1.2	.6	3.2	.4	17.2	.2	15.4	4.1	2.9	.4	5.4	.2	2.8 13	12.7	1.1	153.7	19.1	125.7	989.8	3.8	73.7	.156
997	40.8	2.4	1.4	1.0	3.8	.5	22.0	.2	19.3	5.0	3.4	.5	7.3	.2	2.6 14	13.9	1.2	323.8	11.8	77.7	453.3	2.6	80.2	.224
998	41.4	2.2	1.2	.6	3.7	.4	21.7	.2	18.8	4.9	3.3	.4	8.6	.2	8.1 12	12.4	1.1	417.8	9.5	217.4	106.6	3.0	110.3	.210
000	26.9	1.7	.9	.4	2.5	.3	11.2	.1	10.2	2.6	2.0	.3	4.2	.1	10.6 9	9.4	.8	312.2	12.5	248.6	112.3	6.1	68.2	.110
001	49.9	3.1	1.8	.9	5.0	.6	26.9	.3	24.5	6.4	4.5	.6	9.7	.3	5.9 18	17.8	1.7	345.8	10.7	110.5	983.5	1.2	116.0	.270
002	71.1	4.0	2.4	1.0	6.1	.8	35.1	.4	31.2	8.3	5.5	.8	11.0	.4	2.8 22	22.3	2.2	36.4	18.3	32.2	944.8	1.4	139.0	.312
003	76.4	4.6	2.7	1.2	7.1	.9	41.8	.4	36.5	9.7	6.3	.9	13.0	.4	3.2 25	25.1	2.4	38.0	20.5	15.5	1022.1	1.4	150.7	.352
004	71.8	4.2	2.4	1.1	6.8	.8	39.7	.4	34.1	9.0	5.9	.8	12.3	.4	4.4 23	22.8	2.2	113.8	21.5	23.7	932.6	3.0	121.2	.305
005	77.9	4.9	2.8	1.3	7.6	1.0	43.5	.4	37.4	9.9	6.7	.9	13.7	.4	4.4 26	26.4	2.7	73.2	29.3	73.2	697.3	2.3	187.4	.351
006	4.7	.8	.4	.1	1.0	.1	4.8	.1	4.3	1.0	.8	.1	1.9	.1	2.0 4	4.3	.4	82.9	56.4	447.1	57.6	48.0	28.1	.044
007	77.5	3.7	2.1	1.1	6.2	.7	34.5	.3	30.9	8.4	5.5	.7	11.3	.3	5.0 19	18.8	1.9	349.0	22.7	367.0	70.9	4.1	141.1	.394
008	8.6	1.2	.6	.1	1.2	.2	5.8	.1	4.6	1.3	1.0	.2	1.9	.1	3.4 7	7.1	.8	46.2	20.1	304.5	16.2	6.5	40.6	.042
009	100.2	5.6	3.3	1.6	8.7	1.2	45.4	.5	42.4	11.4	7.6	1.0	13.1	.5	3.7 31	30.8	3.0	310.0	18.8	285.5	120.3	1.4	163.4	.510
010	82.4	4.2	2.3	1.4	7.3	.8	43.3	.3	36.4	10.2	6.6	.8	12.1	.3	4.8 22	21.6	2.1	341.2	19.1	219.0	82.7	2.5	154.6	435
011	89.8	4.1	2.2	1.4	7.5	.8	49.5	.3	38.9	10.7	6.9	.8	12.8	.3	3.9 21	20.5	1.9	395.1	21.5	229.7	72.3	3.5	145.0	.430
012	32.7	2.0	1.0	.5	2.9	.4	16.3	.1	13.8	3.8	2.6	.4	4.9	.1	2.2 10	10.3	.9	155.0	21.2	308.4	30.3	5.1	65.0	.155
014	1.3	1.0	.4	<0.1	.6	.2	1.8	.1	1.5	.4	.4	.1	1.0	.1	3.0 6	5.5	.4	4.2	20.0	386.1	8.1	6.3	22.1	.006
015	11.3	1.2	.5	.1	1.1	.2	5.1	.1	5.0	1.3	1.0	.2	2.1	.1	5.3 7	6.9	.5	49.3	15.3	339.2	18.7	5.9	38.8	.047
016	6.8	1.2	.5	.1	1.1	.2	5.4	.1	4.0	1.2	.9	.2	1.7	.1	3.5 7	7.4	.5	51.5	16.3	369.9	25.4	4.7	31.9	.024
017	25.3	1.9	.9	.3	2.4	.3	12.0	.1	10.2	3.0	2.2	.3	3.7	.1	5.4 11	10.5	.8	154.7	15.2	329.0	49.3	7.4	57.9	.099
018	35.5	2.1	1.1	.7	3.1	.4	18.6	.2	16.8	4.4	3.0	.4	5.5	.2	2.8 11	11.3	1.0	160.1	15.1	234.3	75.7	5.0	91.6	.236
019	90.1	7.7	4.1	2.2	10.9	1.5	46.5	.6	45.7	11.8	9.5	1.4	13.4	.6	4.4 43	43.2	3.6	185.4	20.7	136.7	123.8	2.1	199.1	.679

ELEMENT SAMPLE		Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	pp	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	pp.	Ti %
ELEMENT SAMPLE	Ce ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Pr ppm	Sm ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Y ppm	Yb ppm	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Ta ppm	Zr ppm	Ti %
258020	16.8	1.1	.5	.2	1.4	.2	6.2	.1	6.2	1.5	1.2	.2	2.1	.1	5.0 6	6.0	.6	46.5	18.1	286.1	25.4	6.9	30.7	.063
258021	92.9	5.4	3.0	1.6	8.5	1.0	44.7	.4	41.8	11.1	7.5	1.0	13.4	.4	4.1 26	28.0	2.7	343.7	17.4	213.8	105.6	1.5	177.8	.551
258022	50.6	3.7	1.8	.9	5.0	.7	26.7	.3	24.0	6.5	4.6	.7	7.7	.3	8.3 19	18.7	1.6	212.4	14.3	154.5	160.5	3.2	91.2	.239
258023	9.0	.7	.3	<0.1	.6	.1	1.4	<0.1	2.0	.5	.5	.1	.6	.1	1.9 4	4.0	.3	57.4	2.4	168.5	89.1	1.2	15.1	.006
258024	16.5	1.0	.4	<0.1	.9	.2	2.7	.1	2.9	.7	.6	.2	1.2	.1	4.1 5	5.4	.4	27.6	10.0	331.7	21.4	4.4	25.9	.010
58025	5.0	.8	.3	.1	.6	.1	2.0	<0.1	1.7	.5	.5	.1	1.3	.1	28.1 5	4.6	.3	28.0	13.0	133.5	19.8	5.9	20.4	.013
58026	106.2	5.4	2.7	1.6	8.9	1.0	54.5	.4	50.2	13.1	8.8	1.1	16.6	.4	6.1 24	24.2	2.4	370.0	26.0	283.2	91.7	7.1	168.2	.498
58027	111.9	5.4	2.8	1.8	9.4	1.0	60.2	.4	52.0	14.0	8.9	1.1	17.4	.4	6.3 24	24.0	2.3	359.6	20.5	178.6	76.6	2.1	234.2	.613
58028	100.6	5.3	2.7	1.8	8.8	1.0	51.9	.4	47.5	12.4	8.5	1.1	15.5	.4	10.7 23	23.4	2.3	394.9	17.7	149.3	93.6	1.4	165.7	.538
58029	68.7	3.8	1.9	1.3	5.9	.7	34.4	.3	31.2	8.3	5.9	.7	10.5	.3	4.8 17	17.3	1.7	486.7	14.7	139.6	377.5	1.2	133.2	.339
58030	42.2	2.0	1.0	.4	2.3	.4	11.4	.1	11.9	2.9	2.1	.3	4.2	.2	13.9 10	10.0	1.0	91.9	19.1	252.1	32.8	6.5	56.6	.151
58031	97.6	4.7	2.4	1.4	8.0	.8	47.7	.3	42.6	11.5	7.5	.9	14.4	.3	10.2 21	21.1	2.0	370.9	22.6	331.4	86.3	4.5	110.7	.364
58034	5.6	.7	.4	.1	.6	.1	3.0	.1	2.6	.6	.6	.1	.7	.1	9.4 4	4.4	.4	46.8	14.5	131.8	414.2	8.3	11.2	.032
58035	85.9	4.6	2.5	1.2	6.9	.9	43.2	.4	36.1	10.0	6.6	.9	13.8	.4	6.1 21	20.7	2.2	283.6	31.7	272.4	413.4	6.0	116.3	.282
58036	86.0	5.2	3.0	1.4	7.7	1.0	45.3	.5	39.7	10.5	6.9	.9	13.8	.5	6.9 25	25.1	2.9	268.5	26.7	152.4	756.1	3.3	112.2	.292
58037	58.1	3.9	2.3	1.0	5.2	.8	35.6	.3	28.4	8.0	5.2	.7	10.5	.3	6.7 23	22.8	2.1	180.6	17.8	76.6	1251.2	2.9	94.3	.254
58038	77.0	4.3	2.4	1.1	5.9	.9	42.8	.4	34.2	9.4	6.0	.9	12.5	.4	3.0 24	23.5	2.1	288.5	19.2	94.4	1618.4	2.1	116.6	.271
58039	116.6	4.9	2.8	1.4	7.3	1.0	50.9	.4	43.9	11.1	7.0	1.0	13.9	.4	2.7 28	27.5	2.4	311.1	21.7	140.7	1539.4	2.0	172.4	.321
58040	99.9	4.3	2.5	1.0	6.1	.9	40.2	.4	36.1	9.1	5.8	.8	11.5	.4	6.4 24	24.4	2.2	244.6	22.6	150.3	1327.3	3.5	148.6	.280
58041	73.1	4.3	2.5	1.1	6.0	.9	38.6	.4	34.1	9.0	5.7	.8	12.1	.4	3.6 24	24.4	2.3	259.9	17.3	121.0	1266.1	2.1	122.9	.292
58042	78.8	4.8	2.7	1.3	6.7	1.0	43.6	.4	37.8	9.9	6.5	.9	14.4	.4	2.7 28	27.7	2.5	264.8	16.1	113.2	1205.3	2.0	138.0	.308
58043	73.9	4.6	2.7	1.2	6.2	1.0	40.7	.4	34.7	9.2	6.2	.9	13.0	.4	3.4 27	26.5	2.5	266.9	21.3	119.4	1260.6	2.1	117.8	.309
58044	92.5	4.9	2.7	1.2	7.0	1.0	48.7	.4	39.5	10.4	6.7	1.0	15.8	.4	3.2 27	26.9	2.6	331.8	30.2	227.3	1090.2	3.0	136.7	.330
58045	68.6	3.9	2.2	1.0	5.6	.8	36.1	.3	29.3	8.4	5.4	.8	10.5	.3	2.7 20	20.2	1.9	215.8	15.6	142.6	1197.4	1.3	96.5	.309
58046	78.4	4.8	2.6	1.2	7.0	1.0	44.7	.4	39.3	10.1	6.4	.9	14.5	.4	2.9 26	25.8	2.3	367.9	16.2	140.8	1745.9	1.2	127.0	.294
8047	51.4	3.3	1.9	.8	4.4	.7	23.9	.3	19.5	5.4	4.0	.6	7.8	.3	1.5 20	19.5	1.7	254.2	10.6	124.7	1466.6	.8	89.2	.419
8048	77.4	4.4	2.3	1.4	6.3	.9	42.5	.3	37.2	9.8	6.4	.9	11.1	.3	3.0 22	22.0	1.9	405.0	13.0	143.6	377.1	1.1	113.1	.384
8049	86.6	4.0	2.2	1.1	6.3	.8	41.4	.3	39.3	9.5	6.2	.8	13.0	.3	3.3 20	20.4	2.0	354.5	12.4	122.3	291.7	1.0	163.9	.361
8050	62.6	3.7	2.2	.9	5.2	.8	32.6	.3	30.9	7.6	4.9	.7	12.0	.3	2.7 20	19.8	1.9	311.8	9.5	108.2	146.5	.8	190.7	.335
8051	105.1	3.6	2.0	.9	5.7	.7	36.8	.3	34.8	8.2	5.2	.7	12.8	.3	5.8 19	18.5	1.7	343.1	14.0	184.6	90.4	2.2	177.8	.346
8052	72.5	4.2	2.2	1.1	6.1	.9	41.0	.4	37.2	9.5	6.1	.8	12.5	.3	4.1 21	21.2	2.0	480.6	14.8	185.0	377.6	1.7	143.6	.381
8053	81.1	4.8	2.7	1.2	6.8	1.0	46.2	.4	41.5	10.5	6.7	.9	14.4	.4	3.0 24	24.3	2.4	342.1	22.5	153.6	1535.2	2.2	142.6	.367
8054	88.9	5.4	3.1	1.3	7.8	1.1	47.4	.5	43.9	11.1	7.3	1.1	15.1	.5	4.1 29	28.9	2.8	340.9	24.8	170.8	1309.0	4.2	164.7	.364
8055	64.7	3.6	2.1	1.0	5.2	.8	29.8	.3	27.4	7.0	4.8	.7	8.7	.3	3.4 20	19.7	1.9	329.5	15.7	110.0	1301.2	1.7	110.7	.265
8056	48.8	2.8	1.6	.7	4.0	.6	25.0	.2	21.9	5.8	3.9	.6	7.8	.2	5.2 15	15.2	1.5	291.2	10.5	116.6	1274.5	1.6	106.0	.228
8057	32.3	2.4	1.2	.4	2.8	.5	16.5	.2	11.7	3.3	2.5	.5	5.5	.2	12.0 12	11.7	1.0	137.8	13.4	74.9	418.9	4.1	84.0	.126
8058	55.2	3.1	1.8	.9	4.5	.7	26.9	.3	22.0	6.2	4.2	.6	10.3	.3	4.9 16	16.3	1.6	408.8	7.6	103.2	157.5	.8	181.3	.298
8059	53.8	3.2	1.7	.9	4.6	.6	26.7	.3	24.0	6.9	4.5	.7	9.9	.3	5.0 15	14.8	1.6	249.5	18.0	202.9	43.8	4.6	107.7	.275
8060	66.1	4.9	2.7	1.3	6.5	1.0	39.2	.4	35.8	9.8	6.3	.9	12.3	.4	11.9 27	26.6	2.4	253.3	24.5	222.6	66.2	4.0	176.0	.524
8061	66.0	4.0	2.2	1.1	6.0	.8	33.2	.3	32.4	8.6	5.4	.8	10.7	.3	11.5 22	21.7	1.9	226.8	19.4	269.8	64.0	4.1	121.3	.349

ELEMENT SAMPLE ELEMENT SAMPLE	ppm	Dy ppm Dy ppm	Er ppm Er ppm	Eu ppm Eu ppm	Gd ppm Gd ppm	Ho ppm Ho ppm	La ppm La ppm	Lu ppm Lu ppm	Nd ppm Nd ppm	Pr ppm Pr ppm	Sm ppm Sm ppm	Tb ppm Tb ppm	Th ppm	Tm ppm Tm ppm	U ppm U ppm	Y ppm Y ppm	Yb ppm Yb ppm	Ba ppm Ba ppm	Nb ppm Nb ppm	Rb ppm Rb ppm	Sr ppm Sr ppm	Ta ppm Ta ppm	ppm Zr ppm	Ti % Ti %
58062	54.2	1.0	.4	<0.1	1.2	.2	3.2	.1	3.1	.7	.6	.2	1.8	.1	2.6 6	6.0	.4	24.2	18.3	317.7	34.8	5.2	31.6	.012
58063	33.9	.9	.4	<0.1	.8	.2	3.3	.1	1.4	.6	.5	.2	1.5	.1	6.3 6	5.6	.4	60.5	14.6	239.5	134.6	4.4	32.9	.008
58064	59.3	1.4	.7	.2	1.9	3	7.7	.1	7.9	2.1	1.4	.3	3.5	.1	6.4 8	7.7	.6	93.7	19.9	291.0	49.7	4.0	48.9	.073
58066	58.5	2.6	1.4	.7	4.0	6	25.5	.2	21.9	6.5	3.9	.5	8.8	.2	3.5 13	13.4	1.3	206.5	14.5	90.3	555.9	1.7	90.4	.199
58067	96.8	4.5	2.6	1.1	6.8	1.0	36.1	.4	35.5	9.4	5.8	.9	12.7	.4	5.5 24	23.5	2.4	161.4	23.4	131.8	1137.7	4.8	118.3	.280
58068	77.8	4.3	2.4	1.1	6.3	.9	36.6	.4	35.3	9.1	5.8	.8	12.7	.4	4.3 22	22.3	2.2	255.5	16.9	130.6	1328.3	2.3	106.1	.249
58069	39.0	2.5	1.3	.5	3.4	.5	19.5	.2	17.0	4.8	3.1	.5	7.4	.2	5.2 13	13.0	1.2	93.4	19.5	198.6	400.2	5.3	74.5	.125
58070	83.7	4.1	2.3	1.1	6.0	.9	37.2	.3	34.8	9.1	5.8	.8	13.3	.3	3.5 21	21.4	2.1	271.1	16.9	130.2	1324.3	1.7	108.3	.278
58071	51.7	3.5	1.9	1.0	4.7	.7	28.2	.3	24.3	7.0	4.7	.7	9.6	.3	3.3 17	17.2	1.7	258.3	20.2	173.6	1170.4	3.3	89.2	.298
58072	84.4	4.2	2.2	1.3	6.4	.8	40.7	.3	37.5	10.4	6.5	.8	14.3	.3	4.9 20	20.0	2.0	360.9	12.4	210.1	271.1	1.6	128.7	.304
58073	108.1	4.7	2.5	1.2	7.0	.9	40.6	.4	37.9	10.0	6.4	.9	14.4	.4	4.3 22	22.3	2.3	386.2	21.0	212.3	1209.2	2.4	134.1	.279
58074	64.6	4.3	2.4	1.1	6.0	.9	36.8	.4	34.4	9.1	5.8	.8	12.9	.4	4.1 22	21.5	2.2	301.3	27.4	173.9	1012.9	4.7	143.1	.258
8075	68.1	3.7	2.2	1.0	5.4	.8	29.6	.3	29.3	7.5	5.0	.7	10.4	.3	4.0 18	18.0	1.9	333.0	18.2	137.3	1073.1	4.7	140.9	.250
8076	51.1	3.1	1.6	.7	4.1	.6	25.5	.2	21.0	6.2	3.9	.6	8.8	.3	6.1 15	15.1	1.5	178.2	28.9	128.9	555.3	4.8	77.4	.166
8077	150.7	4.7	2.5	1.5	8.2	.9	48.5	.4	44.5	11.5	7.2	1.0	17.7	.4	3.9 22	21.6	2.2	664.6	12.1	162.3	124.8	1.1	179.5	.365
8078	62.4	3.9	2.2	1.1	5.8	.8	35.5	.3	32.9	9.0	5.7	.8	15.9	.3	4.7 19	18.5	2.1	442.5	15.9	155.8	119.3	2.7	191.7	.319
8079	54.7	3.3	1.9	.9	4.7	.7	27.6	.3	25.1	7.0	4.7	.7	12.5	.3	3.7 16	15.7	1.8	501.1	10.5	152.2	122.1	1.2	219.8	.336
8080	64.7	3.4	1.9	.9	5.2	.7	27.5	.3	24.3	7.0	4.6	.7	12.5	.3	6.0 16	16.3	1.7	487.0	15.2	192.3	134.2	2.7	195.6	.294
8081	6.2	.9	.4	.1	.7	.2	3.5	.1	2.8	.9	.8	.2	1.5	.1	13.0 6	5.5	.4	113.7	8.4	107.2	339.5	4.4	25.3	.030
8083	63.4	3.4	1.9	.8	4.4	.7	28.3	.3	24.2	6.6	4.5	.7	9.6	.3	8.3 19	18.7	1.7	42.3	21.4	103.0	557.9	6.3	103.4	.192
8084	82.2	4.5	2.7	1.1	6.0	1.0	40.2	.4	32.9	9.1	6.0	.9	12.9	.4	8.1 26	26.2	2.6	113.5	26.1	152.6	771.3	5.2	127.1	.255
8085	71.3	3.5	1.9	1.0	5.1	.7	33.5	.3	28.4	7.8	5.3	.7	12.7	.3	5.9 20	19.6	1.8	393.8	17.0	194.6	222.9	3.2	161.1	.295
8086	76.1	4.4	2.8	1.0	5.5	1.0	35.2	.4	30.5	8.1	5.6	.8	12.5	.4	3.6 26	25.5	2.7	405.4	13.1	137.1	71.5	1.7	170.4	.346
8087	81.5	3.7	2.1	1.0	5.8	.9	41.4	.3	31.6	9.0	6.0	.8	17.0	.3	5.3 20	19.9	2.0	316.0	11.7	134.2	71.6	2.2	176.3	.255
8088	20.2	1.4	.7	.1	1.1	[illegible]	5.2	.1	3.7	1.0	.9	.2	2.1	.1	25.[illegible] 9	8.8	.9	94.6	18.1	140.1	32.2	6.7	32.7	.039
3089	65.5	3.3	1.7	.9	4.7	.7	32.7	.3	26.1	7.2	5.1	.7	12.7	.3	8.9 17	16.9	1.5	769.5	14.2	147.3	121.1	2.5	142.2	.282
3090	72.5	3.4	2.0	1.0	5.0	.7	33.1	.3	27.1	7.5	5.1	.7	13.1	.3	3.0 18	17.8	1.8	436.9	9.8	122.0	93.5	.9	180.0	.300
091	6.4	1.0	.4	<0.1	.6	.2	2.7	.1	1.5	.5	.5	.2	1.6	.1	31.9 6	5.7	.4	36.5	19.7	308.5	37.1	6.3	24.2	.012
092	44.5	2.4	1.4	.8	3.4	.5	22.5	.2	18.7	5.1	3.7	.5	8.4	.2	2.5 13	12.7	1.4	1130.1	10.7	127.9	151.3	1.7	107.6	.202
093	2.8	.9	.4	.1	.6	.2	4.1	.1	2.3	.7	.6	.2	1.5	.1	16.6 5	5.3	.4	55.7	21.5	299.2	38.9	8.8	14.8	.017
09 AR-1	65.1	3.2	1.8	.9	4.6	.7	33.0	.3	24.5	6.9	4.5	.7	11.1	.3	2.2 18	17.6	1.7	243.7	11.4	70.6	1597.7	1.0	65.9	.194
09 AR-3	81.6	4.7	2.8	1.1	6.0	1.0	38.9	.4	32.0	8.9	6.1	.9	13.0	.4	3.4 26	25.6	2.6	296.2	19.6	90.4	1443.1	1.3	129.7	.271
09 AR-4	5.1	1.6	.9	<0.1	.7	.3	3.7	.2	1.8	.6	.7	.2	1.3	.2	3.7 10	10.4	1.5	36.2	13.4	293.9	32.8	3.4	45.8	.006
09 AR-5	6.1	.7	.3	.3	1.1	.1	6.8	<0.1	4.6	1.2	1.1	.1	.3	<0.1	1.0 4	4.1	.2	17.3	1.1	3.7	817.0	<0.1	3.4	.051
09 AR-6	2.2	.5	.3	.2	.5	.1	8.4	<0.1	2.3	.6	.5	.1	.3	<0.1	.5 4	3.6	.2	15.7	.9	3.0	728.3	<0.1	2.5	.048
09 AR-7	15.7	1.1	.6	.5	1.4	.2	7.7	.1	4.9	1.2	1.3	.2	.4	.1	1.1 7	6.7	.6	22.7	1.4	18.3	280.6	.1	7.1	.057
09 AR-8	24.3	1.5	.9	.3	1.9	.3	13.2	.1	10.8	2.9	2.1	.3	4.0	.1	2.2 8	7.8	.8	109.6	5.4	30.5	2270.5	.4	51.2	.110
09 AR-9	55.0	2.4	1.4	.7	3.4	.5	20.8	.2	18.0	5.1	3.5	.5	7.8	.2	4.7 12	11.5	1.3	20.4	8.2	3.2	948.0	.7	150.0	.145
09 AR-10	87.7	5.7	3.2	1.1	7.1	1.1	43.0	.4	34.6	9.6	6.3	1.0	13.3	.4	2.4 33	32.6	2.9	169.7	16.2	25.3	583.5	2.0	113.7	.318
09 AR-11	64.2	3.8	2.2	.9	5.1	.7	33.0	.3	25.9	7.4	5.0	.7	9.8	.3	2.8 22	21.5	1.9	429.1	14.2	83.4	1194.9	3.6	110.6	.261
09 AR-12	68.1	3.7	2.1	.8	5.3	.7	31.1	.3	27.7	7.4	5.1	.7	9.4	.3	1.8 21	20.5	1.9	144.2	18.0	32.5	1314.9	1.4	93.1	.346
09 AR-13	93.4	5.1	2.9	1.2	7.2	1.0	49.2	.4	42.3	11.0	7.3	.9	15.2	.4	3.1 28	27.9	2.5	394.9	20.6	142.7	1316.3	1.5	130.3	.327

Sample #	DDH No	From (ft)	To (ft)	Interval (ft)	From (m)	To (m)	Interval (m	ppm Nb	Lb Nb	% Nb
257951	LON09DDH-1	13	20	7	3.96	6.10	2.13	21.4	0.05	0.0021
257952	LON09DDH-1	20	25	5	6.10	7.62	1.52	18.3	0.04	0.0018
257953	LON09DDH-1	25	30	5	7.62	9.14	1.52	20.7	0.05	0.0021
257954	LON09DDH-1	30	35	5	9.14	10.67	1.52	38.4	0.08	0.0038
257955	LON09DDH-1	35	40	5	10.67	12.19	1.52	14.5	0.03	0.0015
257956	LON09DDH-1	40	45	5	12.19	13.72	1.52	10.4	0.02	0.0010
257957	LON09DDH-1	45	50	5	13.72	15.24	1.52	18.8	0.04	0.0019
257958	LON09DDH-1	50	55	5	15.24	16.76	1.52	16.1	0.04	0.0016
257959	LON09DDH-1	55	60	5	16.76	18.29	1.52	14.0	0.03	0.0014
257960	LON09DDH-1	60	65	5	18.29	19.81	1.52	na		
257961	LON09DDH-1	65	70	5	19.81	21.34	1.52	19.6	0.04	0.0020
257962	LON09DDH-1	70	75	5	21.34	22.86	1.52	11.7	0.03	0.0012
257963	LON09DDH-1	75	80	5	22.86	24.38	1.52	11.9	0.03	0.0012
257964	LON09DDH-1	80	85	5	24.38	25.91	1.52	8.5	0.02	0.0009
257965	LON09DDH-1	85	90	5	25.91	27.43	1.52	13.5	0.03	0.0014
257966	LON09DDH-1	90	95	5	27.43	28.96	1.52	18.6	0.04	0.0019
257967	LON09DDH-1	95	100	5	28.96	30.48	1.52	24.4	0.05	0.0024
257968	LON09DDH-1	100	107.5	7.5	30.48	32.77	2.29	22.9	0.05	0.0023
257969	LON09DDH-1	121.5	126	4.5	37.03	38.40	1.37	1.50	0.00	0.0002
257970	LON09DDH-1	132	138	6	40.23	42.06	1.83	22.5	0.05	0.0023
257971	LON09DDH-1	138	144	6	42.06	43.89	1.83	15.6	0.03	0.0016
257972	LON09DDH-1	144	150	6	43.89	45.72	1.83	20.7	0.05	0.0021
257973	LON09DDH-2	7	15	8	2.13	4.57	2.44	16.0	0.04	0.0016
257974	LON09DDH-2	15	20	5	4.57	6.10	1.52	20.2	0.04	0.0020
257975	LON09DDH-2	20	25	5	6.10	7.62	1.52	na		
257976	LON09DDH-2	25	30	5	7.62	9.14	1.52	na		
257977	LON09DDH-2	30	35	5	9.14	10.67	1.52	14.5	0.03	0.0015
257978	LON09DDH-2	35	40	5	10.67	12.19	1.52	17.3	0.04	0.0017
257979	LON09DDH-2	40	45	5	12.19	13.72	1.52	17.2	0.04	0.0017
257980	LON09DDH-2	45	50	5	13.72	15.24	1.52	14.4	0.03	0.0014
257981	LON09DDH-2	50	55	5	15.24	16.76	1.52	18.4	0.04	0.0018
257982	LON09DDH-2	55	60	5	16.76	18.29	1.52	25.6	0.06	0.0026
257983	LON09DDH-2	60	65	5	18.29	19.81	1.52	17.5	0.04	0.0018
257984	LON09DDH-2	65	70	5	19.81	21.34	1.52	20.1	0.04	0.0020
257985	LON09DDH-2	70	75	5	21.34	22.86	1.52	10.6	0.02	0.0011
257986	LON09DDH-2	75	80	5	22.86	24.38	1.52	16.1	0.04	0.0016

Sample #	DDH No	From (ft)	To (ft)	Interval (ft)	From (m)	To (m)	Interval (m	ppm Nb	Lb Nb	% Nb
257987	LON09DDH-2	80	85	5	24.38	25.91	1.52	19.3	0.04	0.0019
257988	LON09DDH-2	85	90	5	25.91	27.43	1.52	22.2	0.05	0.0022
257989	LON09DDH-2	90	95	5	27.43	28.96	1.52	16.6	0.04	0.0017
257990	LON09DDH-2	95	100	5	28.96	30.48	1.52	20.9	0.05	0.0021
257991	LON09DDH-2	100	105	5	30.48	32.00	1.52	11.9	0.03	0.0012
257992	LON09DDH-2	105	110	5	32.00	33.53	1.52	13.0	0.03	0.0013
257993	LON09DDH-2	110	115	5	33.53	35.05	1.52	12.7	0.03	0.0013
257994	LON09DDH-2	115	120	5	35.05	36.58	1.52	na		
257995	LON09DDH-2	120	125	5	36.58	38.10	1.52	8.5	0.02	0.0009
257996	LON09DDH-2	125	130	5	38.10	39.62	1.52	19.1	0.04	0.0019
257997	LON09DDH-2	130	135	5	39.62	41.15	1.52	11.8	0.03	0.0012
257998	LON09DDH-2	135	140	5	41.15	42.67	1.52	9.5	0.02	0.0010
257999	LON09DDH-2	140	145	5	42.67	44.20	1.52	na		
258000	LON09DDH-2	145	150	5	44.20	45.72	1.52	12.5	0.03	0.0013
258001	LON09DDH-2	150	155	5	45.72	47.24	1.52	10.7	0.02	0.0011
258002	LON09DDH-2	155	160	5	47.24	48.77	1.52	18.3	0.04	0.0018
258003	LON09DDH-2	160	165	5	48.77	50.29	1.52	20.5	0.05	0.0021
258004	LON09DDH-2	165	170	5	50.29	51.82	1.52	21.5	0.05	0.0022
258005	LON09DDH-2	170	175	5	51.82	53.34	1.52	29.3	0.06	0.0029
258006	LON09DDH-3	11.5	16.3	4.8	3.51	4.97	1.46	56.4	0.12	0.0056
258007	LON09DDH-3	16.3	23	6.7	4.97	7.01	2.04	22.7	0.05	0.0023
258008	LON09DDH-3	23	30	7	7.01	9.14	2.13	20.1	0.04	0.0020
258009	LON09DDH-3	30	35	5	9.14	10.67	1.52	18.8	0.04	0.0019
258010	LON09DDH-3	35	40	5	10.67	12.19	1.52	19.1	0.04	0.0019
258011	LON09DDH-3	40	45	5	12.19	13.72	1.52	21.5	0.05	0.0022
258012	LON09DDH-3	45	50	5	13.72	15.24	1.52	21.2	0.05	0.0021
258013	LON09DDH-3	50	55	5	15.24	16.76	1.52	na		
258014	LON09DDH-3	55	60	5	16.76	18.29	1.52	20.0	0.04	0.0020
258015	LON09DDH-3	60	65	5	18.29	19.81	1.52	15.3	0.03	0.0015
258016	LON09DDH-3	65	70	5	19.81	21.34	1.52	16.3	0.04	0.0016
258017	LON09DDH-3	70	75	5	21.34	22.86	1.52	15.2	0.03	0.0015
258018	LON09DDH-3	100	105.4	5.4	30.48	32.13	1.65	15.1	0.03	0.0015
258019	LON09DDH-3	141	143.5	2.5	42.98	43.74	0.76	20.7	0.05	0.0021
258020	LON09DDH-3	185.6	189	3.4	56.57	57.61	1.04	18.1	0.04	0.0018
258021	LON09DDH-3	189	194	5	57.61	59.13	1.52	17.4	0.04	0.0017
258022	LON09DDH-3	203	208	5	61.87	63.40	1.52	14.3	0.03	0.0014

Sample #	DDH No	From (ft)	To (ft)	Interval (ft)	From (m)	To (m)	Interval (m	ppm Nb	Lb Nb	% Nb
258023	LON09DDH-3	208	213	5	63.40	64.92	1.52	2.4	0.01	0.0002
258024	LON09DDH-3	213	217	4	64.92	66.14	1.22	10.0	0.02	0.0010
258025	LON09DDH-3	222	224.5	2.5	67.67	68.43	0.76	13.0	0.03	0.0013
258026	LON09DDH-4	30	35	5	9.14	10.67	1.52	26.0	0.06	0.0026
258027	LON09DDH-4	35	40	5	10.67	12.19	1.52	20.5	0.05	0.0021
258028	LON09DDH-4	40	45	5	12.19	13.72	1.52	17.7	0.04	0.0018
258029	LON09DDH-4	45	50	5	13.72	15.24	1.52	14.7	0.03	0.0015
258030	LON09DDH-4	50	55	5	15.24	16.76	1.52	19.1	0.04	0.0019
258031	LON09DDH-4	75	80	5	22.86	24.38	1.52	22.6	0.05	0.0023
258032	LON09DDH-4	80	85	5	24.38	25.91	1.52	na		
258033	LON09DDH-4	85	90	5	25.91	27.43	1.52	na		
258034	LON09DDH-4	90	95	5	27.43	28.96	1.52	14.5	0.03	0.0015
258035	LON09DDH-4	95	100	5	28.96	30.48	1.52	31.7	0.07	0.0032
258036	LON09DDH-4	100	105	5	30.48	32.00	1.52	26.7	0.06	0.0027
258037	LON09DDH-4	105	110	5	32.00	33.53	1.52	17.8	0.04	0.0018
258038	LON09DDH-4	110	115	5	33.53	35.05	1.52	19.2	0.04	0.0019
258039	LON09DDH-4	115	120	5	35.05	36.58	1.52	21.7	0.05	0.0022
258040	LON09DDH-4	120	125	5	36.58	38.10	1.52	22.8	0.05	0.0023
258041	LON09DDH-4	125	130	5	38.10	39.62	1.52	17.3	0.04	0.0017
258042	LON09DDH-4	130	135	5	39.62	41.15	1.52	16.1	0.04	0.0016
258043	LON09DDH-4	135	140	5	41.15	42.67	1.52	21.3	0.05	0.0021
258044	LON09DDH-4	140	145	5	42.67	44.20	1.52	30.2	0.07	0.0030
258045	LON09DDH-4	145	150	5	44.20	45.72	1.52	15.6	0.03	0.0016
258046	LON09DDH-4	150	155	5	45.72	47.24	1.52	16.2	0.04	0.0016
258047	LON09DDH-4	155	160	5	47.24	48.77	1.52	10.6	0.02	0.0011
258048	LON09DDH-4	160	165	5	48.77	50.29	1.52	13.0	0.03	0.0013
258049	LON09DDH-4	165	170	5	50.29	51.82	1.52	12.4	0.03	0.0012
258050	LON09DDH-4	170	175	5	51.82	53.34	1.52	9.5	0.02	0.0010
258051	LON09DDH-4	175	180	5	53.34	54.86	1.52	14.0	0.03	0.0014
258052	LON09DDH-4	180	185	5	54.86	56.39	1.52	14.8	0.03	0.0015
258053	LON09DDH-4	185	190	5	56.39	57.91	1.52	22.5	0.05	0.0023
258054	LON09DDH-4	190	195	5	57.91	59.44	1.52	24.8	0.05	0.0025
258055	LON09DDH-4	195	200	5	59.44	60.96	1.52	15.7	0.03	0.0016
258056	LON09DDH-4	200	205	5	60.96	62.48	1.52	10.5	0.02	0.0011
258057	LON09DDH-4	205	210	5	62.48	64.01	1.52	13.4	0.03	0.0013
258058	LON09DDH-4	210	215	5	64.01	65.53	1.52	7.6	0.02	0.0008

Sample #	DDH No	From (ft)	To (ft)	Interval (ft)	From (m)	To (m)	Interval (m	ppm Nb	Lb Nb	% Nb
258059	LON09DDH-5	14.5	20.5	6	4.42	6.25	1.83	18.0	0.04	0.0018
258060	LON09DDH-5	35	40	5	10.67	12.19	1.52	24.5	0.05	0.0025
258061	LON09DDH-5	40	45	5	12.19	13.72	1.52	19.4	0.04	0.0019
258062	LON09DDH-5	45	50	5	13.72	15.24	1.52	18.3	0.04	0.0018
258063	LON09DDH-5	50	55	5	15.24	16.76	1.52	14.6	0.03	0.0015
258064	LON09DDH-5	55	60	5	16.76	18.29	1.52	19.9	0.04	0.0020
258065	LON09DDH-5	60	65	5	18.29	19.81	1.52	na		
258066	LON09DDH-5	65	70	5	19.81	21.34	1.52	14.5	0.03	0.0015
258067	LON09DDH-5	70	75	5	21.34	22.86	1.52	23.4	0.05	0.0023
258068	LON09DDH-5	75	80	5	22.86	24.38	1.52	16.9	0.04	0.0017
258069	LON09DDH-5	80	85	5	24.38	25.91	1.52	19.5	0.04	0.0020
258070	LON09DDH-5	85	90	5	25.91	27.43	1.52	16.9	0.04	0.0017
258071	LON09DDH-5	90	95	5	27.43	28.96	1.52	20.2	0.04	0.0020
258072	LON09DDH-5	95	100	5	28.96	30.48	1.52	12.4	0.03	0.0012
258073	LON09DDH-5	100	105	5	30.48	32.00	1.52	21.0	0.05	0.0021
258074	LON09DDH-5	105	110	5	32.00	33.53	1.52	27.4	0.06	0.0027
258075	LON09DDH-5	110	115	5	33.53	35.05	1.52	18.2	0.04	0.0018
258076	LON09DDH-5	115	120	5	35.05	36.58	1.52	28.9	0.06	0.0029
258077	LON09DDH-5	120	125	5	36.58	38.10	1.52	12.1	0.03	0.0012
258078	LON09DDH-5	125	130	5	38.10	39.62	1.52	15.9	0.03	0.0016
258079	LON09DDH-5	130	135	5	39.62	41.15	1.52	10.5	0.02	0.0011
258080	LON09DDH-5	135	140	5	41.15	42.67	1.52	15.2	0.03	0.0015
258081	LON09DDH-5	140	145	5	42.67	44.20	1.52	8.4	0.02	0.0008
258082	LON09DDH-5	145	150	5	44.20	45.72	1.52	na		
258083	LON09DDH-5	150	155	5	45.72	47.24	1.52	21.4	0.05	0.0021
258084	LON09DDH-5	155	160	5	47.24	48.77	1.52	26.1	0.06	0.0026
258085	LON09DDH-5	160	165	5	48.77	50.29	1.52	17.0	0.04	0.0017
258086	LON09DDH-5	165	170	5	50.29	51.82	1.52	13.1	0.03	0.0013
258087	LON09DDH-5	170	175	5	51.82	53.34	1.52	11.7	0.03	0.0012
258088	LON09DDH-5	175	180	5	53.34	54.86	1.52	18.1	0.04	0.0018
258089	LON09DDH-5	180	185	5	54.86	56.39	1.52	14.2	0.03	0.0014
258090	LON09DDH-5	185	190	5	56.39	57.91	1.52	9.8	0.02	0.0010
258091	LON09DDH-5	205	210	5	62.48	64.01	1.52	19.7	0.04	0.0020
258092	LON09DDH-5	240	244	4	73.15	74.37	1.22	10.7	0.02	0.0011
258093	LON09DDH-5	248	254	6	75.59	77.42	1.83	21.5	0.05	0.0022
							Average		0.0016	0.2348

Sample #	DDH No	From (ft)	To (ft)	Interval (ft)	From (m)	To (m)	Interval (m	ppm Nb	Lb Nb	% Nb
	LON 09 AR-1							11.4	0.03	0.0011
	LON 09 AR-3							19.6	0.04	0.0020
	LON 09 AR-4							13.4	0.03	0.0013
	LON 09 AR-5							1.1	0.00	0.0001
	LON 09 AR-6							.9	0.00	0.0001
									0.00	0.0000
	LON 09 AR-7							1.4	0.00	0.0001
	LON 09 AR-8							5.4	0.01	0.0005
	LON 09 AR-9							8.2	0.02	0.0008
	LON 09 AR-10							16.2	0.04	0.0016
	LON 09 AR-11							14.2	0.03	0.0014
									0.00	0.0000
									0.00	0.0000
									0.00	0.0000
									0.00	0.0000
									0.00	0.0000
									0.00	0.0000
	LON 09 AR-12							18.0	0.04	0.0018
	LON 09 AR-13							20.6	0.05	0.0021

Appendix III

Drill logs by Andris Kikauka P. Geol.

Appendix III

Drill logs by Andris Kikauka P. Geol.

DDH #	FROM m	TO m	WIDTH m	FROM ft	TO ft	WIDTH ft	Rock Type	Alteration
LON09DDH1	3.9624	4.572	0.6096	13	15	2	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	4.572	6.096	1.524	15	20	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	6.096	7.62	1.524	20	25	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	7.62	9.144	1.524	25	30	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	9.144	10.67	1.524	30	35	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	10.668	12.19	1.524	35	40	5	carbonatite/sovite, syenite/pegmatite	aegirine, calcite, apatite
LON09DDH1	12.192	13.72	1.524	40	45	5	carbonatite/sovite, syenite/pegmatite	aegirine, calcite, apatite
LON09DDH1	13.716	15.24	1.524	45	50	5	syenite/fenite, sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	15.24	16.76	1.524	50	55	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	16.764	18.29	1.524	55	60	5	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH1	18.288	19.81	1.524	60	65	5	carbonatite/sovite, granite/pegmatite	aegirine, calcite, apatite
LON09DDH1	19.812	21.34	1.524	65	70	5	syenite/fenite, biotite sovite	aegirine, calcite, apatite
LON09DDH1	21.336	22.86	1.524	70	75	5	biotite sovite	aegirine, calcite, apatite
LON09DDH1	22.86	24.38	1.524	75	80	5	biotite sovite	aegirine, calcite, apatite
LON09DDH1	24.384	25.91	1.524	80	85	5	biotite sovite	aegirine, calcite, apatite
LON09DDH1	25.908	27.43	1.524	85	90	5	biotite sovite	aegirine, calcite, apatite
LON09DDH1	27.432	28.96	1.524	90	95	5	biotite sovite, carbonatite/sovite	aegirine, calcite, apatite
LON09DDH1	28.956	30.48	1.524	95	100	5	fenite/syenite	aegirine, calcite, apatite
LON09DDH1	30.48	32	1.524	100	105	5	fenite/syenite	aegirine, calcite, apatite
LON09DDH1	32.004	33.53	1.524	105	110	5	sovite/carbonatite, biotite schist	aegirine, calcite, apatite
LON09DDH1	33.528	35.05	1.524	110	115	5	biotite schist	muscovite, microcline
LON09DDH1	35.052	36.58	1.524	115	120	5	biotite schist	muscovite, microcline
LON09DDH1	36.576	38.1	1.524	120	125	5	biotite schist, quartz vein	
LON09DDH1	38.1	39.62	1.524	125	130	5	biotite sovite, quartz vein	muscovite, microcline
LON09DDH1	39.624	41.15	1.524	130	135	5	granitic pegmatite, syenite	muscovite, microcline
LON09DDH1	41.148	42.67	1.524	135	140	5	syenite	muscovite, microcline
LON09DDH1	42.672	44.2	1.524	140	145	5	syenite, biotite schist	
LON09DDH1	44.196	45.72	1.524	145	150	5	syenite, biotite schist	muscovite, microcline
LON09DDH1	45.72	47.24	1.524	150	155	5	biotite schist	
LON09DDH1	47.244	48.77	1.524	155	160	5	biotite schist	
LON09DDH1	48.768	50.29	1.524	160	165	5	biotite schist, granite	muscovite, microcline
LON09DDH1	50.292	51.82	1.524	165	170	5	biotite schist	
LON09DDH1	51.816	53.34	1.524	170	175	5	biotite schist	
LON09DDH1	53.34	54.86	1.524	175	180	5	biotite schist	
LON09DDH1	54.864	56.39	1.524	180	185	5	biotite schist	

Mineralization	Comments	%Carbonate	Foliation	RQD % > 10 cm
limonite, pyrite, zircon	13'-35.3' sovite (calcite,aegirine,apatite,zircon)	45	60-88	20
limonite, pyrite, zircon	15'-17', 19.6'-19.7' broken ground	40	60-80	22
pyrite, zircon, ilmenite		40	60-85	24
pyrite, zircon, ilmenite		35	60-86	28
pyrite, zircon, ilmenite	30'-30.2', 35.9'-37' broken ground	40	60-87	30
pyrite, zircon, ilmenite	35.3'-44.8' syenite/pegmatite sill 12 cm qtz vein @ 35.3'-35.6'	25	55-80	18
pyrite, zircon, ilmenite	44.8'-47.5' sovite (calcite,aegirine,apatite,zircon)	10	55-80	39
pyrite, zircon, ilmenite	47.5'-49' syenite/fenite (apatite, zircon)	10	55-85	74
pyrite, zircon, ilmenite	51.5'-52.6', 55.2'-56.2', 57.2-57.3', 58.6'-58.8' broken ground	30	55-86	33
pyrite, zircon, ilmenite	49'-61.3' sovite (calcite,aegirine,apatite,zircon)	35	60-75	38
pyrite, zircon, ilmenite		40	60-75	35
pyrite, zircon, ilmenite	61.3'-62' granite/pegmatite sill	5	60-75	22
pyrite, zircon, ilmenite	62'-69' fenite/syenite, Mn oxide coatings, broken ground	35	60-75	38
pyrite, zircon, ilmenite	69'-92' Biotite sovite,	5	60-75	18
pyrite, zircon, ilmenite		25	60-75	25
pyrite, zircon, ilmenite		25	60-75	22
pyrite, zircon, ilmenite	92'-94' carbonatite/sovite	35	60-75	23
pyrite, zircon, ilmenite	94'-107.5' fenite/syenite, Mn oxide coatings	40	60-75	52
pyrite, zircon, ilmenite		35	60-75	65
pyrite, zircon, ilmenite	107.5'-121.5' biotite schist, 0.2% red garnet, 0.3% epidote	25	70-85	90
zircon, pyrite		0	70-80	80
zircon, pyrite		0	70-80	85
	121.5'-126' quartz vein parallel to foliation	0	55-65	75
zircon, pyrite	126'-131.2' Biotite sovite,	12	65-75	70
zircon, pyrite	131.2'-132' Granitic pegmatite, sharp contacts @ 65 degrees	5	65	77
zircon, pyrite	132'-142.8' Syenite,2% zircon,sharp contacts @ 85 degrees	0	85	70
	142.8'-148.3' Biotite schist,	0	75-85	15
zircon, pyrite	148.3'-150' Syenite, 1% zircon	0	75-80	20
	150'-162.7' Biotite schist	0	60-75	42
		0	60-70	50
zircon, pyrite	162.7'-163.4' granite sill, 15% grey-milky quartz,	0	65-70	50
	163.4'-185' Biotite schist,	0	70-75	72
		0	65-80	85
		0	70-75	80
		0	65-70	84

DDH #	FROM ft	TO ft	WIDTH ft	FROM m	TO m	WIDTH m	Rock Type	Alteration
LON09DDH2	7	10	3	2.13	3.05	0.91	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	10	15	5	3.05	4.57	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	15	20	5	4.57	6.10	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	20	25	5	6.10	7.62	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	25	30	5	7.62	9.14	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	30	35	5	9.14	10.67	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	35	40	5	10.67	12.19	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	40	45	5	12.19	13.72	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	45	50	5	13.72	15.24	1.52	carbonatite/sovite, granite/pegmatite	aegirine, calcite, apatite
LON09DDH2	50	55	5	15.24	16.76	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	55	60	5	16.76	18.29	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	60	65	5	18.29	19.81	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	65	70	5	19.81	21.34	1.52	sovite/carbonatite, fenite/syenite	aegirine, calcite, apatite
LON09DDH2	70	75	5	21.34	22.86	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	75	80	5	22.86	24.38	1.52	sovite/carbonatite, fenite/syenite	aegirine, calcite, apatite
LON09DDH2	80	85	5	24.38	25.91	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	85	90	5	25.91	27.43	1.52	sovite/carbonatite, fenite/syenite	aegirine, calcite, apatite
LON09DDH2	90	95	5	27.43	28.96	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH2	95	100	5	28.96	30.48	1.52	sovite/carbonatite, biotite schist	aegirine, calcite, apatite
LON09DDH2	100	105	5	30.48	32.00	1.52	sovite/carbonatite, biotite schist	aegirine, calcite, apatite
LON09DDH2	105	110	5	32.00	33.53	1.52	biotite schist	aegirine, calcite, apatite
LON09DDH2	110	115	5	33.53	35.05	1.52	biotite schist	aegirine, calcite, apatite
LON09DDH2	115	120	5	35.05	36.58	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	120	125	5	36.58	38.10	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	125	130	5	38.10	39.62	1.52	sovite/carbonatite, fenite/syenite	aegirine, calcite, apatite
LON09DDH2	130	135	5	39.62	41.15	1.52	sovite/carbonatite, biotite schist	muscovite, microcline
LON09DDH2	135	140	5	41.15	42.67	1.52	fenite/syenite, biotite schist	muscovite, microcline
LON09DDH2	140	145	5	42.67	44.20	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	145	150	5	44.20	45.72	1.52	fenite/syenite, biotite schist	aegirine, calcite, apatite
LON09DDH2	150	155	5	45.72	47.24	1.52	fenite/syenite, biotite schist	aegirine, calcite, apatite
LON09DDH2	155	160	5	47.24	48.77	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	160	165	5	48.77	50.29	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	165	170	5	50.29	51.82	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	170	175	5	51.82	53.34	1.52	fenite/syenite	aegirine, calcite, apatite
LON09DDH2	175	180	5	53.34	54.86	1.52	biotite schist	garnet, muscovite

Mineralization	Comments	%Carbonate	Foliation (degrees to core axis)	RQD % > 10 cm
limonite, pyrite, zircon	7'-67.3' sovite (calcite,aegirine,apatite,zircon)	40	40-65	22
limonite, pyrite, zircon	10'-13' fault zone, minor clay 80% recovery	40	40-70	23
limonite, pyrite, zircon	7'-86' 0.1% limonite fracture filling	40	35-65	25
limonite, pyrite, zircon		40	45-65	38
limonite, pyrite, zircon		35	45-65	80
limonite, pyrite, zircon	31.5'-32.8' fault zone, minor clay, 90% recovery	40	45-65	70
limonite, pyrite, zircon		25	45-65	88
limonite, pyrite, zircon		30	45-60	100
limonite, pyrite, zircon	47.4'-47.6' granite sill,15% quartz,sharp contacts	15	45-65	82
limonite, pyrite, zircon		30	45-55	88
limonite, pyrite, zircon		30	40-55	84
limonite, pyrite, zircon		30	40-75	80
limonite, pyrite, zircon	67.3'-76' fenite/syenite,	5	35-55	85
limonite, pyrite, zircon	68.6'-68.9' quartz vn @ 65-70 degrees to core axis	0	35-55	88
limonite, pyrite, zircon	76'-86.8' sovite (calcite,aegirine,apatite,zircon)	30	35-55	90
limonite, pyrite, zircon		25	35-55	77
pyrite, zircon, ilmenite	86.8'-88.4' syenite sill, 1% diss zircon, sharp cont	15	35-55	80
pyrite, zircon, ilmenite	88.4'-98.3' sovite (calcite,aegirine,apatite,zircon)	25	40-70	90
pyrite, zircon, ilmenite	98.3'-101.2' biotite schist, garnet, minor zircon	5	40-70	92
pyrite, zircon, ilmenite	101.2-103' fenite/syenite sill	0	30-60	100
zircon, pyrite	103'-115' biotite schist, sharp contacts @ 30-60	0	30-60	20
zircon, pyrite	108'-108.7' fault zone	0	30-60	15
zircon, pyrite	115'-129' fenite/syenite sill, disseminated zircon	0	35-55	50
pyrite, zircon, ilmenite	119'-125' fault zone, 90% recovery	0	35-55	0
pyrite, zircon, ilmenite	129'-133' sovite (calcite,aegirine,apatite,zircon)	0	35-60	25
pyrite, zircon, ilmenite	133'-137.6' biotite schist	5	35-60	35
pyrite, zircon, ilmenite	137.6'-148.3' fenite/syenite	15	35-60	82
pyrite, zircon, ilmenite		10	35-60	90
pyrite, zircon, ilmenite	148.3'-152' biotite schist, garnet, minor zircon	0	35-60	66
pyrite, zircon, ilmenite	148.3'-149' fault zone, clay, 90% recovery	0	35-55	90
pyrite, zircon, ilmenite	152'-175' fenite/syenite	0	35-55	100
pyrite, zircon, ilmenite	152.6'-153' fault zone, 90% recovery	0	30-45	62
pyrite, zircon, ilmenite	165'-165.2' monzonite sill, 13 cm wide	0	30-45	85
pyrite, zircon, ilmenite		0	30-45	80
pyrite	175'-218' biotite schist, 0.1-3% garnet	0	15-50	80

LON09DDH2	180	185	5	54.86	56.39	1.52	biotite schist	garnet, muscovite
LON09DDH2	185	190	5	56.39	57.91	1.52	biotite schist	garnet, muscovite
LON09DDH2	190	195	5	57.91	59.44	1.52	biotite schist	garnet, muscovite
LON09DDH2	195	200	5	59.44	60.96	1.52	biotite schist	garnet, muscovite
LON09DDH2	200	205	5	60.96	62.48	1.52	biotite schist	garnet, muscovite
LON09DDH2	205	210	5	62.48	64.01	1.52	biotite schist	garnet, muscovite
LON09DDH2	210	215	5	64.01	65.53	1.52	biotite schist	garnet, muscovite
LON09DDH2	215	218	3	65.53	66.45	0.91	biotite schist	garnet, muscovite

pyrite	0	15-50	75
pyrite	0	15-50	85
pyrite	0	15-50	85
pyrite	0	25-55	90
pyrite	0	30-55	75
pyrite	0	30-55	85
pyrite	0	35-55	90
pyrite	0	30-55	85

DDH #	FROM ft	TO ft	WIDTH ft	FROM m	TO m	WIDTH m	Rock Type	Alteration
LON09DDH3	11.5	15	3.5	3.51	4.57	1.07	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	15	20	5	4.57	6.10	1.52	biotite-muscovite schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	20	25	5	6.10	7.62	1.52	biotite-muscovite schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	25	30	5	7.62	9.14	1.52	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	30	35	5	9.14	10.67	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	35	40	5	10.67	12.19	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	40	45	5	12.19	13.72	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	45	50	5	13.72	15.24	1.52	biotite-muscovite schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	50	55	5	15.24	16.76	1.52	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	55	60	5	16.76	18.29	1.52	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	60	65	5	18.29	19.81	1.52	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	65	70	5	19.81	21.34	1.52	syenite/pegmatite	muscovite, vermiculite
LON09DDH3	70	75	5	21.34	22.86	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	75	80	5	22.86	24.38	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	80	85	5	24.38	25.91	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	85	90	5	25.91	27.43	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	90	95	5	27.43	28.96	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH3	95	100	5	28.96	30.48	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	100	105	5	30.48	32.00	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	105	110	5	32.00	33.53	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	110	115	5	33.53	35.05	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite, vermiculite
LON09DDH3	115	120	5	35.05	36.58	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	120	125	5	36.58	38.10	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	125	130	5	38.10	39.62	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	130	135	5	39.62	41.15	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	135	140	5	41.15	42.67	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	140	145	5	42.67	44.20	1.52	garnet-biot-musc schist, syenite/pegmatite	muscovite
LON09DDH3	145	150	5	44.20	45.72	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	150	155	5	45.72	47.24	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	155	160	5	47.24	48.77	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	160	165	5	48.77	50.29	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	165	170	5	50.29	51.82	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	170	175	5	51.82	53.34	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	175	180	5	53.34	54.86	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	180	185	5	54.86	56.39	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite

Mineralization	Comments	Carbonate %	Foliation deg/core	RQD % >10cm
limonite,pyrite,zircon	11.5'-16.3' syenite/pegmatite,3% qtz coarse gr patches	0	20-30	90
limonite,pyrite,zircon	16.3'-23' biotite muscovite phlogopite schist	0	20-30	100
limonite,pyrite,zircon	23'-30' syenite/pegmatite sill, muscovite, zircon	0	20-30	82
limonite,pyrite,zircon	30'-46.6' biotite muscovite phlogopite schist, 3% garnet	0	20-30	85
limonite,pyrite	disseminated 1 cm subhedral red garnets	0	15-40	92
limonite,pyrite	11.5'-104' 0.1% limonite fracture filling	0	15-40	80
limonite,pyrite		0	15-40	70
limonite,pyrite,zircon	46.6'-73.8' syenite/pegmatite sill, muscovite, zircon	0	15-40	82
limonite,pyrite,zircon		0	15-40	95
limonite,pyrite,zircon		0	15-40	96
limonite,pyrite,zircon		0	20-50	80
limonite,pyrite,zircon		0	20-50	90
limonite,pyrite	73.8'-100' biotite muscovite phlogopite schist, 6% garnet	0	20-50	85
limonite,pyrite		0	20-50	85
limonite,pyrite		0	20-50	80
limonite,pyrite		0	20-50	100
limonite,pyrite		0	20-50	92
limonite,pyrite,zircon	100'-101' syenite sill, sharp contacts @ 28 degrees	0	20-50	88
limonite,pyrite,zircon	101'-102.5' biotite muscovite phlogopite schist, 8% garnet	0	30-40	80
limonite,pyrite,zircon	102.5'-105.4' syenite sill, contacts @ 40 degrees to ca	0	30-40	100
pyrite	105.4'-141' biotite muscovite phlogopite schist,10% garnet	0	20-40	90
pyrite		0	20-40	95
pyrite		0	20-40	80
pyrite		0	20-40	22
pyrite		0	20-40	95
pyrite		0	20-40	90
pyrite	141'-143.5' 20 cm syenite sill	0	0-40	95
pyrite	143.5'-185.6' biotite muscovite phlogopite schist,15% garnet	0	0-40	96
pyrite		0	0-40	100
pyrite		0	0-40	95
pyrite		0	0-40	100
pyrite		0	0-40	95
pyrite		0	0-40	100
pyrite		0	20-35	90
pyrite		0	20-35	100

LON09DDH3	185	190	5	56.39	57.91	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	190	195	5	57.91	59.44	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	195	200	5	59.44	60.96	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	200	205	5	60.96	62.48	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	205	210	5	62.48	64.01	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	210	215	5	64.01	65.53	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	215	220	5	65.53	67.06	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	220	225	5	67.06	68.58	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	225	230	5	68.58	70.10	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	230	235	5	70.10	71.63	1.52	garnet-biotite-muscovite-phlogopite schist	muscovite
LON09DDH3	235	240	5	71.63	73.15	1.52	biotite-muscovite schist	muscovite
LON09DDH3	240	245	5	73.15	74.68	1.52	biotite-muscovite schist	muscovite
LON09DDH3	245	250	5	74.68	76.20	1.52	biotite-muscovite schist	muscovite
LON09DDH3	250	255	5	76.20	77.72	1.52	biotite-muscovite schist	muscovite
LON09DDH3	255	260	5	77.72	79.25	1.52	biotite-muscovite schist	muscovite
LON09DDH3	260	265	5	79.25	80.77	1.52	biotite-muscovite schist	muscovite

pyrite	185.6'-189' syenite sill, 1% diss py, contact @ 40 degrees	0	20-35	88
pyrite	189'-204' biotite muscovite phlogopite schist, 10% garnet	0	20-35	66
pyrite		0	20-35	85
pyrite	204'-217' syenite sill, 0.5% limonite fracture filling	0	20-35	80
pyrite	contacts @ 30 degrees to core axis	0	20-35	80
pyrite	217'-222' biotite muscovite phlogopite schist, 8% garnet	0	20-35	75
pyrite		0	20-35	85
pyrite	222'-224.5' syenite sill	0	20-35	85
pyrite	224.5'-265' biotite-muscovite schist	0	20-35	75
pyrite		0	20-35	80
		0	20-35	75
		0	20-35	80
		0	20-35	80
		0	20-35	85
		0	20-35	75
		0	20-35	70

DDH #	From ft	To ft	Width fr	From m	To m	Width m	Rock Type	Alteration
LON09DDH4	16	20	4	4.88	6.10	1.22	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	20	25	5	6.10	7.62	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	25	30	5	7.62	9.14	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	30	35	5	9.14	10.67	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	35	40	5	10.67	12.19	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	40	45	5	12.19	13.72	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	45	50	5	13.72	15.24	1.52	fenite/syenite, biotite-musc-phlog-garnet-schist	muscovite, microcline
LON09DDH4	50	55	5	15.24	16.76	1.52	fenite/syenite, biotite-musc-phlog-garnet-schist	muscovite, microcline
LON09DDH4	55	60	5	16.76	18.29	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	60	65	5	18.29	19.81	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	65	70	5	19.81	21.34	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	70	75	5	21.34	22.86	1.52	biotite-muscovite-phlogopite garnet schist	garnet, muscovite
LON09DDH4	75	80	5	22.86	24.38	1.52	sovite/carbonatite,biotite-musc-phlog-garnet-schist	aegirine, calcite, apatite
LON09DDH4	80	85	5	24.38	25.91	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	85	90	5	25.91	27.43	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	90	95	5	27.43	28.96	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	95	100	5	28.96	30.48	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	100	105	5	30.48	32.00	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	105	110	5	32.00	33.53	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	110	115	5	33.53	35.05	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	115	120	5	35.05	36.58	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	120	125	5	36.58	38.10	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	125	130	5	38.10	39.62	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	130	135	5	39.62	41.15	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	135	140	5	41.15	42.67	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	140	145	5	42.67	44.20	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	145	150	5	44.20	45.72	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	150	155	5	45.72	47.24	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	155	160	5	47.24	48.77	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	160	165	5	48.77	50.29	1.52	sovite/carbonatite,biotite-muscovite-phlogopite-schist	aegirine, calcite, apatite
LON09DDH4	165	170	5	50.29	51.82	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH4	170	175	5	51.82	53.34	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH4	175	180	5	53.34	54.86	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH4	180	185	5	54.86	56.39	1.52	biotite-muscovite-phlogopite schist	muscovite, vermiculite
LON09DDH4	185	190	5	56.39	57.91	1.52	sovite/carbonatite	aegirine, calcite, apatite

Mineralization	Comments	Carbonate %	Foliation deg	RQD %>10cm
limonite, pyrite	16'-23.8' biotite-muscovite-phlogopite-garnet schist	0	55-70	75
limonite, pyrite	16'-106' trace-0.1% limonite as fracture filling	0	55-60	80
limonite, pyrite	23.8'-24.5' quartz vn, sharp contact @ 68 degrees	0	45-65	80
limonite, pyrite	24.5'-44' biotite-muscovite-phlogopite-garnet schist	0	45-65	65
limonite, pyrite		0	50-65	15
limonite, pyrite	40.4'-41.4' & 44.4'-44.6' fault zone, clay, 90% recov.	0	50-65	10
limonite, pyrite, zircon	44'-48' syenite/fenite sill,contacts @ 60 degrees	0	50-65	40
limonite, pyrite, zircon	48'-50.6' biotite-muscovite-phlogopite-garnet schist	0	55-60	50
limonite, pyrite	50.6'-55' syenite/fenite sill, contacts @ 55 degrees	0	50-55	85
limonite, pyrite	55'-77.5' biotite-muscovite-phlogopite-garnet schist	0	40-75	60
limonite, pyrite	55'-55.3' fault zone, minor clay, 90% recovery	0	45-55	55
limonite, pyrite		0	45-55	65
limonite, pyrite, zircon	76.3'-77.5' fault zone, minor clay, 90% recovery	12	45-55	10
limonite, pyrite, zircon	77.5'-162.7' sovite/carbonatite	25	45-55	65
pyrite, zircon, ilmenite		25	45-55	10
pyrite, zircon, ilmenite		25	40-70	20
pyrite, zircon, ilmenite		25	40-70	15
pyrite, zircon, ilmenite		25	30-60	35
pyrite, zircon, ilmenite		25	30-60	20
pyrite, zircon, ilmenite		25	30-60	84
pyrite, zircon, ilmenite		25	35-55	100
pyrite, zircon, ilmenite		25	35-55	90
pyrite, zircon, ilmenite		25	35-55	100
pyrite, zircon, ilmenite	130'-160' 20% aegirine, 3-5% zircon	25	35-55	95
pyrite, zircon, ilmenite		25	35-60	90
pyrite, zircon, ilmenite		25	35-60	95
pyrite, zircon, ilmenite		25	45-60	100
pyrite, zircon, ilmenite		25	45-55	100
pyrite, zircon, ilmenite	157'159.4' 40% aegirine, 10% zircon	25	35-55	85
pyrite, zircon, ilmenite	162.7'-184' biotite-muscovite-phlogopite schist	12	40-60	75
pyrite		0	40-60	85
pyrite		0	40-60	68
pyrite		0	40-65	95
pyrite	184'-215' sovite/carbonatite	5	55-65	85
pyrite, zircon, ilmenite		25	55-65	100

LON09DDH4	190	195	5	57.91	59.44	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	195	200	5	59.44	60.96	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	200	205	5	60.96	62.48	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	205	210	5	62.48	64.01	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	210	215	5	64.01	65.53	1.52	sovite/carbonatite	aegirine, calcite, apatite
LON09DDH4	215	220	5	65.53	67.06	1.52	biotite-muscovite schist	muscovite
LON09DDH4	220	225	5	67.06	68.58	1.52	biotite-muscovite schist	muscovite

pyrite, zircon, ilmenite		25	55-65	100
pyrite, zircon, ilmenite		25	55-65	100
pyrite, zircon, ilmenite		25	55-65	75
pyrite, zircon, ilmenite		25	55-65	10
pyrite, zircon, ilmenite		25	55-65	90
pyrite	215'-225' biotite-muscovite schist	0	60-70	85
pyrite		0	60-70	90

DDH #	FROM m	TO m	WIDTH m	FROM ft	TO ft	WIDTH ft	Rock Type	Alteration
LON09DDH5	3.353	4.572	1.219	11	15	4	biotite-muscovite-phlogopite schist	muscovite,phlogopite,garnet
LON09DDH5	4.572	6.096	1.524	15	20	5	syenite	muscovite, microcline
LON09DDH5	6.096	7.62	1.524	20	25	5	biotite-muscovite-phlogopite schist	muscovite,phlogopite,garnet
LON09DDH5	7.62	9.144	1.524	25	30	5	biotite-muscovite-phlogopite schist	muscovite,phlogopite,garnet
LON09DDH5	9.144	10.668	1.524	30	35	5	biotite-muscovite-phlogopite schist	muscovite,phlogopite,garnet
LON09DDH5	10.668	12.192	1.524	35	40	5	biotite-musc-phlog schist, syenite	muscovite,phlogopite,garnet
LON09DDH5	12.192	13.716	1.524	40	45	5	syenite	muscovite, microcline
LON09DDH5	13.716	15.24	1.524	45	50	5	syenite	muscovite, microcline
LON09DDH5	15.24	16.764	1.524	50	55	5	syenite	muscovite, microcline
LON09DDH5	16.764	18.288	1.524	55	60	5	biotite-musc-phlog schist, syenite	aegirine, calcite, apatite
LON09DDH5	18.288	19.812	1.524	60	65	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	19.812	21.336	1.524	65	70	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	21.336	22.86	1.524	70	75	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	22.86	24.384	1.524	75	80	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	24.384	25.908	1.524	80	85	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	25.908	27.432	1.524	85	90	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	27.432	28.956	1.524	90	95	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	28.956	30.48	1.524	95	100	5	syenite, carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	30.48	32.004	1.524	100	105	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	32.004	33.528	1.524	105	110	5	syenite, carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	33.528	35.052	1.524	110	115	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	35.052	36.576	1.524	115	120	5	syenite, carbonatite/sovite, biot schist	aegirine, calcite, apatite
LON09DDH5	36.576	38.1	1.524	120	125	5	biotite-muscovite-phlogopite schist	muscovite, microcline
LON09DDH5	38.1	39.624	1.524	125	130	5	biotite-muscovite-phlogopite schist	muscovite, microcline
LON09DDH5	39.624	41.148	1.524	130	135	5	biotite-muscovite-phlogopite schist	muscovite, microcline
LON09DDH5	41.148	42.672	1.524	135	140	5	carbonatite/sovite, biotite-musc schist	aegirine, calcite, apatite
LON09DDH5	42.672	44.196	1.524	140	145	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	44.196	45.72	1.524	145	150	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	45.72	47.244	1.524	150	155	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	47.244	48.768	1.524	155	160	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	48.768	50.292	1.524	160	165	5	biotite sovite	aegirine, calcite, apatite
LON09DDH5	50.292	51.816	1.524	165	170	5	biotite sovite	aegirine, calcite, apatite
LON09DDH5	51.816	53.34	1.524	170	175	5	carbonatite/sovite	aegirine, calcite, apatite
LON09DDH5	53.34	54.864	1.524	175	180	5	carbonatite/sovite, biotite sovite	aegirine, calcite, apatite
LON09DDH5	54.864	56.388	1.524	180	185	5	biotite sovite	aegirine, calcite, apatite
LON09DDH5	56.388	57.912	1.524	185	190	5	biotite sovite	aegirine, calcite, apatite

Mineralization	Comments	%Carbonate	Foliation (c	RQD % > 10 cm
limonite, pyrite	11'-14.5' biotite-muscovite-phlogopite schist, 3% red garnet 0.5-1 cm	0	70-80	10
limonite, pyrite, zircon	14.5'-20.5' syenite sills (60-80 cm),sharp contacts @75-80 deg	0	75-80	75
limonite, pyrite	20.5'-40' biotite-muscovite-phlogopite schist, 3% red garnet 0.5-1 cm	0	65-80	60
limonite, pyrite		0	65-80	55
limonite, pyrite	3-4 cm wide syenite sills @ 33', 36', and 37'	0	65-80	85
limonite, pyrite	increased limonite-pyrite-zircon in syenite as fracture filling	0	65-80	60
pyrite, zircon, ilmenite	40'-58.7' syenite, minor aegirine, zircon	0	65-80	65
pyrite, zircon, ilmenite		0	65-80	70
pyrite, zircon, ilmenite		0	65-80	65
limonite, pyrite	58.7'-59.7' biotite-muscovite-phlogopite schist,2% red garnet 0.5 cm	12	65-85	70
pyrite, zircon, ilmenite	59.7'-99.2' sovite/carbonatite, minor aegirine	15	60-85	70
pyrite, zircon, ilmenite	67'-68' fault zone, minor clay, 90% recovery	20	60-85	22
pyrite, zircon, ilmenite		20	60-85	30
pyrite, zircon, ilmenite		15	60-90	62
pyrite, zircon, ilmenite	80'-84.8' fault zone, minor clay, 90% recovery	20	60-90	0
pyrite, zircon, ilmenite	86.7'-87' fault zone, minor clay, 90% recovery	20	70-75	78
pyrite, zircon, ilmenite		15	70-75	80
pyrite, zircon, ilmenite	99.2'-100' syenite sill, pegmatitic, sharp contact @ 60-80 deg	10	60-80	80
pyrite, zircon, ilmenite	100'-109.6' sovite/carbonatite, minor aegirine	20	70-75	95
pyrite, zircon, ilmenite	109.6'-110.3' syenite sill, pegmatitic, sharp contact @ 60-80 deg	10	60-81	95
pyrite, zircon, ilmenite	110.3'-118.7' sovite/carbonatite, minor aegirine	15	60-85	100
pyrite, zircon, ilmenite	118.7'-119' syenite sill, pegmatitic, sharp contact @ 60-80 deg	12	60-90	95
pyrite	119'-139.9' biotite-muscovite-phlogopite schist	0	70-75	95
pyrite		0	60-85	90
pyrite		0	60-90	45
pyrite, zircon, ilmenite	139.9'-160.1' sovite/carbonatite,minor aegirine,banding @55-70	10	55-70	28
pyrite, zircon, ilmenite		15	65-80	75
pyrite, zircon, ilmenite		25	65-80	85
pyrite, zircon, ilmenite		25	65-85	90
pyrite, zircon, ilmenite		15	60-85	85
pyrite, zircon, ilmenite	160.1'-170' biotite sovite, minor carbonatite, aegirine	5	60-90	25
pyrite, zircon, ilmenite		8	60-90	15
pyrite, zircon, ilmenite	170'-178.5' sovite/carbonatite,minor aegirine,banding @70-80	20	70-75	25
pyrite, zircon, ilmenite	178.5'-190' biotite sovite, minor aegirine	15	70-75	38
pyrite, zircon, ilmenite		5	60-80	50
pyrite, zircon, ilmenite		8	70-75	10

LON09DDH5	57.912	59.436	1.524	190	195	5	biotite schist	muscovite
LON09DDH5	59.436	60.96	1.524	195	200	5	biotite schist	muscovite
LON09DDH5	60.96	62.484	1.524	200	205	5	biotite schist	muscovite
LON09DDH5	62.484	64.008	1.524	205	210	5	syenite	muscovite
LON09DDH5	64.008	65.532	1.524	210	215	5	biotite schist	muscovite
LON09DDH5	65.532	67.056	1.524	215	220	5	biotite schist	muscovite
LON09DDH5	67.056	68.58	1.524	220	225	5	biotite schist	muscovite
LON09DDH5	68.58	70.104	1.524	225	230	5	biotite schist	muscovite
LON09DDH5	70.104	71.628	1.524	230	235	5	biotite schist	muscovite
LON09DDH5	71.628	73.152	1.524	235	240	5	biotite schist	muscovite
LON09DDH5	73.152	74.676	1.524	240	245	5	biotite schist, syenite	muscovite, microcline
LON09DDH5	74.676	76.2	1.524	245	250	5	biotite schist, syenite	muscovite, microcline
LON09DDH5	76.2	77.724	1.524	250	255	5	biotite schist, syenite	muscovite, microcline
LON09DDH5	77.724	79.248	1.524	255	260	5	biotite schist	muscovite
LON09DDH5	79.248	80.772	1.524	260	265	5	biotite schist	muscovite
LON09DDH5	80.772	82.296	1.524	265	270	5	biotite schist	muscovite
LON09DDH5	82.296	83.82	1.524	270	275	5	biotite schist	muscovite
LON09DDH5	83.82	85.344	1.524	275	280	5	biotite schist	muscovite
LON09DDH5	85.344	86.868	1.524	280	285	5	biotite schist	muscovite
LON09DDH5	86.868	88.392	1.524	285	290	5	biotite schist	muscovite
LON09DDH5	88.392	89.916	1.524	290	295	5	biotite schist	muscovite
LON09DDH5	89.916	91.44	1.524	295	300	5	biotite schist	muscovite
LON09DDH5	91.44	92.964	1.524	300	305	5	biotite schist	muscovite
LON09DDH5	92.964	94.488	1.524	305	310	5	biotite schist	muscovite
LON09DDH5	94.488	96.012	1.524	310	315	5	biotite schist	muscovite
LON09DDH5	96.012	97.536	1.524	315	320	5	biotite schist	muscovite
LON09DDH5	97.536	99.06	1.524	320	325	5	biotite schist	muscovite
LON09DDH5	99.06	100.58	1.524	325	330	5	biotite schist	muscovite

pyrite	190'-205' biotite schist	0 65-85	68
pyrite		0 60-85	90
pyrite		0 60-90	45
pyrite	205'-210' syenite sill, minor aegirine, zircon, contacts @68 deg	0 60-90	60
	210'-241' biotite schist	0 70-75	30
		0 60-80	25
		0 70-75	40
		0 65-85	55
		0 60-85	50
	240.1'-240.3' quartz vn, 9 cm wide, 1% disseminated pyrite	0 60-90	60
pyrite, zircon, ilmenite	241'-244' syenite sill	0 75-80	75
pyrite, zircon, ilmenite	244'-248' biotite schist	0 65-85	70
pyrite, zircon, ilmenite	248'-254' syenite sill	0 60-85	75
	254'-330' biotite schist	0 60-90	70
		0 60-90	75
		0 70-75	75
		0 70-75	65
		0 60-80	80
		0 70-75	75
		0 65-85	75
		0 60-85	70
		0 60-90	70
		0 75-80	80
		0 65-85	70
		0 60-85	65
		0 60-90	75
		0 60-90	80
		0 70-75	75

Appendix IV

PRELIMINARY FIELD RECONNAISSANCE AND POST IMPACT ASSESSMENT REPORT

By: ECOFOR,
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PRELIMINARY FIELD RECONNAISSANCE and POST IMPACT ASSESSMENT REPORT

PROJECT AREA: **Rocher Deboule Minerals - Manson Creek (Granite Creek Drill Hole Locations)**

Ecofor Project Number:	09-1030-001	**TSL/FL/UBI:**	N/A
UTM (NAD 83):	**Zone:** 10 **E** 412991	**N** 6171265	**Method:** GPS
NTS Map:		**BCGS Map(s):**	093N.069
Field Crew:	J. Mooney, K. Solonas	**Survey Date(s):**	October 8, 2009; November 6, 2009
Report Author:	J. Mooney	**Report Date(s):**	December 16, 2009

Report Distribution:			
Client:	Rocher Deboule Minerals Corp. 2A 15782 Marine Drive White Rock, B.C. V4B 1E6	**Contact:**	Ed Lee Tel. (604) 531-9639 Fax. (604) 531-9634
Affiliated First Nations:	McLeod Lake Indian Band PO Box 87 Chetwynd, BC V0C 1J0	**Contact:**	Alec Chingee Tel. (250) 788-2227 Fax. (250) 788-8824
	Halfway River First Nation Box 59 Wononwon, BC V0C 2N0	**Contact:**	Roslyn Pokiak Tel. (250) 772-5135 Fax. (250) 772-5124
	Takla Lake First Nation Takla Landing, BC V0J 2T0	**Contact:**	Chief Dolly Abraham Tel. (250) 996-7877 Fax. (250) 996-7874
	Nak'azdli Band Box 1329 Fort St. James, BC V0J 1P0	**Contact:**	Chief Fred Sam Tel. (250) 996-0088 Fax. (250) 996-7634
	West Moberly First Nations Box 90 Moberly Lake, BC V0C 1 X0	**Contact:**	Teena Demeulemeester Tel. (250) 788-3676 Fax. (250) 788-2948
	Tsay Keh Dene #11 - 1839 First Ave Prince George, BC V2L 2X8	**Contact:**	Johnny Pierre Tel. (250) 562-8882 Fax. (250) 562-8899
Ministry of Forests & Range:	MoF Mackenzie	**Contact:**	Hans Beurskens Tel. (250) 997-2212 Fax. (250) 997-2236

RESULTS SUMMARY

Sites identified that are protected by the Heritage Conservation Act ☐ Yes ☒ No

Sites identified that are not protected by the Heritage Conservation Act (post-1846) ☒ Yes ☐ No

Site	Management Recommendation
J-1	Avoidance of post-1846 CMT and blazes; and First Nation consultation
J-2	Avoidance of post-1846 CMT and blazes; and First Nation consultation

Further archaeological work required? (e.g. Archaeological Impact Assessment)

☐ Yes ☒ No

PROJECT AREA DESCRIPTION	
Location and Access:	This drill target area is located in the Mackenzie Forest District, ranging beginning approximately 100 m east of Granite Creek, and approximately 4 km northeast of Manson Creek. To access this location from Ft. St. James travel north along the North Road over the Nation River, onto the Thutade FSR, past the Findlay Nation FSR to cross the Manson River and onto the Findlay Manson FSR. Turn left and continue to approximately km 56 and watch for the deactivated Granite Creek FSR to the right. Proceed on foot or quad down Granite Creek FSR.
Description of Development:	Proposed three-hole diamond drilling program on east side of Granite Creek along timber access roads.
Elevation Range:	1080 to 1130 m ASL
Biogeoclimatic Zone:	SBS dominated by lodgepole pine and spruce age class 8 (141 to 250 years old).
Recorded Cultural Features (Prior to Investigations):	No previously recorded sites or cultural features within 5 km of the proposed drilling program.
Modeled Archaeological Potential:	N/A no model developed for this area but expected low to moderate potential for buried resources and moderate potential for CMTs due to age class 8 (141 to 250 years).
Remarks:	Granite Creek FSR has a series of smaller deactivations and access was on foot.

DESCRIPTION OF SURVEY AREAS AND METHODOLOGY

An inspection of the study area was limited to reconnaissance level survey to identify CMTs, trails and other surficial cultural heritage resources and to assess potential impacts from proposed access and diamond drilling to these identified sites. The study area was also assessed for subsurface archaeological potential. All identified features (CMTs and blazes) were marked in the field using one band of white CMT flagging tape. During the preliminary field reconnaissance the ground was free of snow and visibility was excellent. During and after drilling the ground was covered in snow and the imprints of the tracked vehicle used in the area were very visible.

Based on the projected drill hole locations and the actual drill hole locations two study areas are discussed below. Study area 1 included the area proposed for drilling and study area two was the general area which was drilled (see attached map).

Survey Area 1 (Proposed Drill Target Area)	
Hydrology:	Granite Creek was approximately 100 m west and 100 m lower in elevation
Landforms:	High slope area with no natural level areas suitable for buried resources
Vegetation:	Area dominated by pine and spruce with understory of huckleberry, bunch berry mosses, fireweed, cranberry and currant.
Assessed Archaeological Potential:	Low buried resources potential and low to moderate CMT potential
Reconnaissance Survey:	
Transect:	Transect Spacing: 15-20 m # of Transects: 15 Transect Strip Width: 45 - 60 m
Orientation:	Varied according to compass bearing
Remarks:	Ecofor was provided UTMs for proposed drill targets and Ecofor and MLIB participant walked the proposed target area on October 8, 2009 and again on November 6, 2009. The target areas

	were located very near the timber access road in an area of very steep slope surrounded by standing mixed forest. The drill target areas were transected. Post-1846 blazes and two post-1846 CMTs were identified. No further cultural resources work is recommend for proposed drilling in this immediate area.
Sites Identified:	2 (J-1 and J-2)

RESULTS FOR PROJECT AREA		
Archaeological/Cultural Heritage Resources Found (Y/N)? Y	**Number of Sites:**	2

Temporary Site #/ Borden #:	J-1		**Site Type:**	Post 1846-CMT Cambium Stripping		
UTM (NAD 83):	**Zone:**		**E**	413440	**N**	6171172
Setting/Landforms:	Slope sloping hillside					
Approximate Dimensions:	10 m E/W x 10 m N/S					
Features, Artifacts and Age:	A single dead pine cambium stripping.					
Investigations at Site:	The CMT was fully recorded but not cored. Additional survey of the area failed to identify any additional CMTs or high potential areas for sub-surface cultural materials. A representative increment core sample was obtained from a pine of similar size approximately 2 m to the east. This core revealed a germ date of 1936.					
Current Condition/Potential Impact:	Intact. The site will not be impacted by drill access or road construction or skid trails.					
Overall Significance:	Scientific, historic and public significance are determined to be low.					
Remarks and Interpretation:	The project area was revisited on November 6 and this CMT site was not impacted and no impacts to heritage resources were identified. No further work is recommended.					

Temporary Site #/ Borden #:	J-2		**Site Type:**	Post 1846-CMT Cambium Stripping		
UTM (NAD 83):	**Zone:**		**E**	413021	**N**	6171186
Setting/Landforms:	Slope sloping hillside					
Approximate Dimensions:	10 m E/W x 10 m N/S					
Features, Artifacts and Age:	A single dead pine cambium stripping.					
Investigations at Site:	This CMT was not recorded or cored and also contained post-1846 blazes. Additional survey of the area failed to identify any additional CMTs or high potential areas for sub-surface cultural materials. Three post-1846 blazes were also observed in close proximity to this CMT.					
Current Condition/Potential Impact:	Intact. The site will not be impacted by drill access or road construction or skid trails.					
Overall Significance:	Scientific, historic and public significance are determined to be low.					
Remarks and Interpretation:	The project area was revisited on November 6 and this CMT site was not impacted and no impacts to heritage resources were identified. No further work is recommended.					

Survey Area 2 (Actual Drill Target Area)	
Hydrology:	Granite Creek was approximately 600 m south and a tributary to Granite Creek was approximately 200 m west.
Landforms:	High slope area with no natural level areas suitable for buried resources
Vegetation:	This area is within a recently harvested clear cut with little to no standing trees and mixed ground cover.
Assessed Archaeological Potential:	Low buried resources potential and no potential for CMTs.
Remarks:	Post-impact assessment of the proposed drill target area revealed that no drilling was conducted in the original area (Study Area 1). Imprints of the tracked vehicle(s) used to drill and re-set the road deactivations were clearly visible. These tracks showed no drill impacts in the original proposed drill target area. However, the tracks were followed along the timber access road, over the Granite Creek crossing and back to the northwest. Visual inspection from the timber access road, in coordination with photos

	of the drill hole locations, revealed that the two drill set-ups were located on the existing timber access road, within the clear cut area. No further work is recommended for this immediate area. However, if drilling continues in another adjacent area, a similar preliminary field reconnaissance is recommended. If an additional mineral exploration program or a mineral extraction project is proposed, additional work is recommended to assess possible impacts. This work may include a full Archaeological Impact Assessment (AIA).
Sites Identified:	None

RECOMMENDATIONS

- The post-1846 sites identified within this assessment are not protected by the Heritage Conservation Act and require no further work to mitigate impact. CMTs are considered cultural heritage resources and may require management considerations "to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the *Heritage Conservation Act" (Forest Planning and Practices Regulation Sec. 10* under *FRPA)*. This can be determined through communication with the Ministry of Forests and relevant First Nations. Where operationally feasible, consider avoidance of the post-1846 sites through access and/or component redesign, or the implementation of wildlife tree-patches or machine-free zones.

- No further archaeological/survey work is recommended for this development area.

NOTE:

Although every attempt was made to locate and record all archaeological and cultural heritage features located within the specified survey area, the possibility exists that remains may have been missed. If any unidentified archaeological or cultural heritage remains are encountered during development activities, work in the nearby vicinity must stop and the Ministry of Tourism, Culture, and the Arts; Archaeology Branch, relevant First Nations, and the Ministry of Forests, Mackenzie District must be informed. These agencies will then provide direction as to an appropriate course of action to take regarding management of the remains.

It was not the intent of this survey to identify, evaluate, or comment on the presence or absence of Aboriginal Rights in the survey area. Completion of this survey does not "abrogate or derogate from aboriginal treaty rights" (*Heritage Conservation Act* Sec. 8). The results of this assessment have been forwarded to the appropriate First Nations, who may have additional management recommendations for the located sites and/or the proposed development area. The survey was conducted without prejudice to First Nations Treaty Negotiations, aboriginal rights, or aboriginal title.

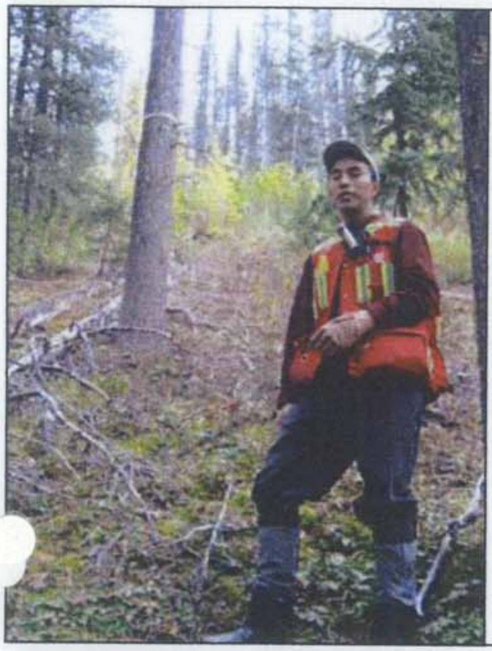
James Mooney, MA
Project Archaeologist
james@ecofor.ca

December 16, 2009
Dated

ECOFOR
natural and cultural resource consultants

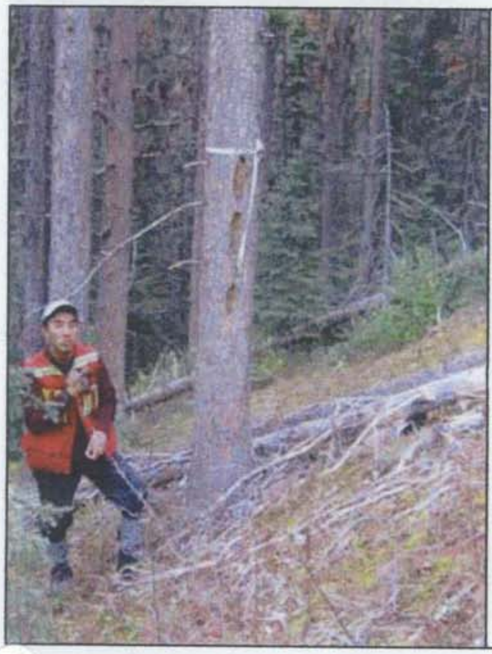
Archaeological Survey Photodocumentation

Permit: n/a
Development Area: Granite Creek Area
Client: Rocher Deboule Minerals
Date: December 16, 2009



Ken Solonas near Drill Hole proposed location #1

Post-1846 blazes on tree near Drill Hole proposed location #1



Ken Solonas near Drill Hole proposed location #1 with triple blaze

J-1 CMT #1

ECOFOR
natural and cultural resource consultants

Archaeological Survey Photodocumentation

Permit: n/a
Development Area: Granite Creek Area
Client: Rocher Deboule Minerals
Date: December 16, 2009

Increment coring of a representative tree with J-1 CMT #1 and Ken Solonas in background

J-2 CMT #1

Ken Solonas and J-2 CMT #1

ECOFOR
natural and cultural resource consultants

Archaeological Survey Photodocumentation

Permit: n/a

Development Area: Granite Creek Area

Client: Rocher Deboule Minerals

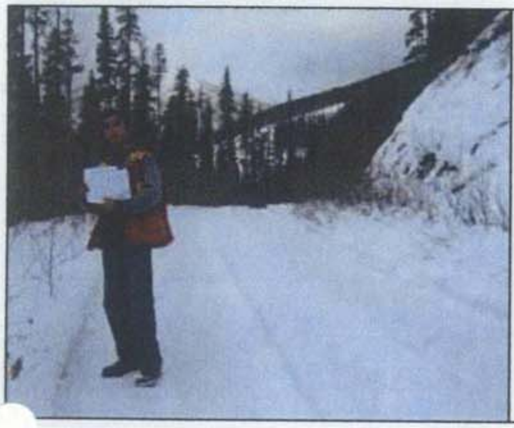
Date: December 16, 2009

Completed Drill Hole Location in Clear Cut looking northeast (note road in center)

Drill Hole Location #1 looking north

Drill Hole Location #2 looking south

Drill Core Storage Location looking east-southeast



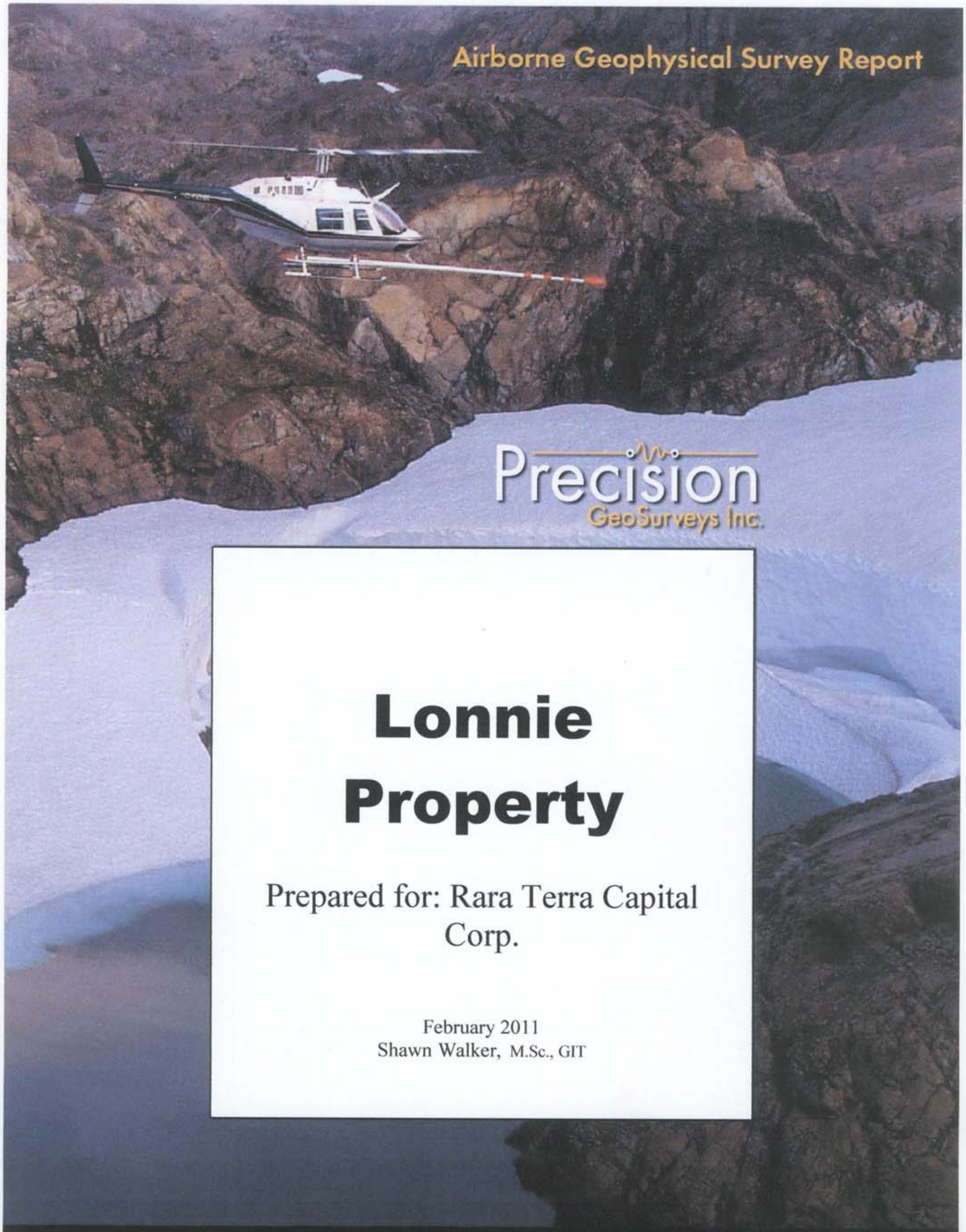
Ken Solonas at Proposed Drill Hole Location #1 (note clear cut in background)

Ken Solonas on east side of Granite Creek in area of soil erosion control looking southwest

APPENDIX V

AIRBORNE GEOPHYSICAL SURVEY REPORT
LONNIE PROPERTY

Airborne Geophysical Survey Report



Precision
GeoSurveys Inc.

Lonnie Property

Prepared for: Rara Terra Capital Corp.

February 2011
Shawn Walker, M.Sc., GIT

www.precisiongeosurveys.com • 520–355 Burrard Street • Vancouver, B.C. • Canada V6C 2G8 • T: 604.484.9402

Table of Contents

1.0 Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the Lonnie Property. The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Rara Terra Capital Corp. The geophysical survey, carried out on February 26, 2011, saw the acquisition of magnetic data.

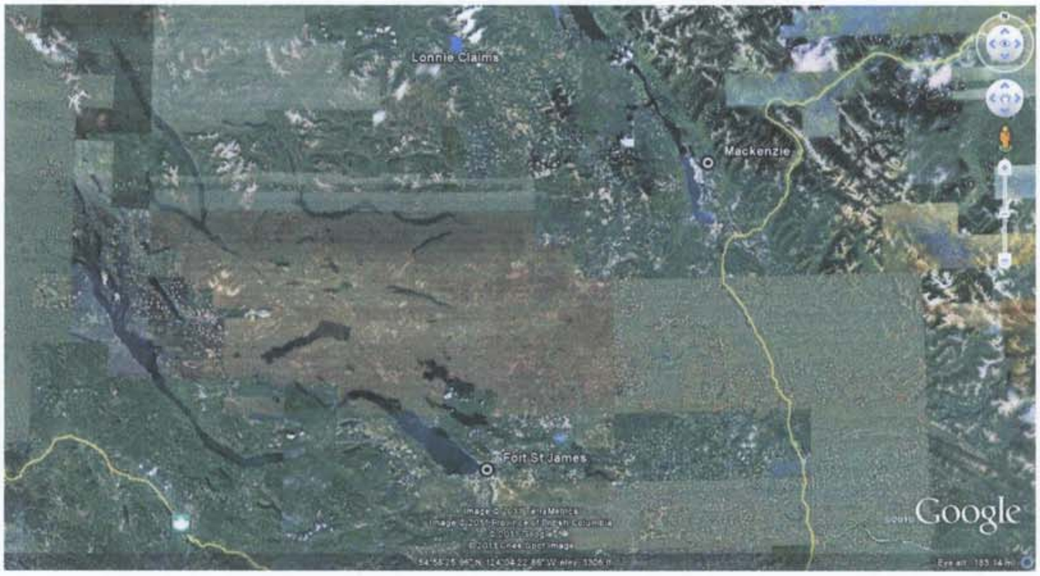


Figure 1: Lonnie claims survey area location.

The Lonnie claims are located approximately 140 km north of Fort St. James, BC and 90 km west-northwest of Mackenzie, BC (Figure 1). The survey area of the Lonnie claims is approximately 5.6 km by 3.9 km. A total of 173.8 line kilometres of magnetic data were flown for this survey. The survey lines were flown at 100 metre spacing at a 060°/240° heading; the tie lines were flown at 1000 metre spacing at a heading of 150°/330° (Figure 2 & 3).

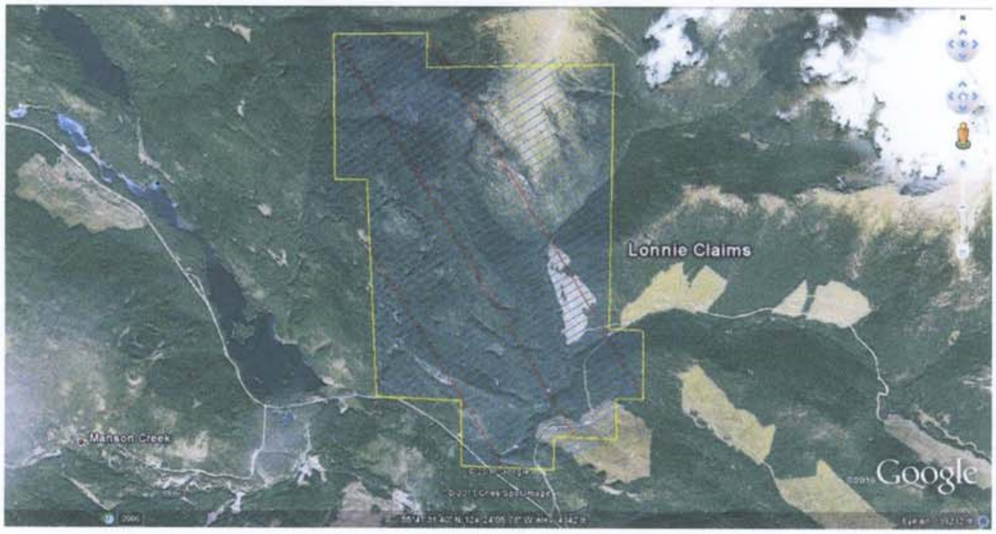


Figure 2: Airborne geophysical survey lines in blue, tie lines in red and the boundary in yellow.

Figure 3: Proposed survey basemap with survey lines in blue and tie lines outlined in red and the boundary in black. The Easternmost proposed tie line was not completed due to poor weather conditions.

1.1 Survey Specifications:

The geodetic system used for this survey is WGS 84 and the survey area is within UTM zone 10N. The survey data acquisition specifications and coordinates for the Lonnie Claims are specified as followed (Table 1 and Table 2).

Survey Block Name	Line Spacing m	Survey Line km	Tie Line km	Total Line km	Survey Line Orientation
Lonnie Claims	100	157.6	16.2	173.8	060°/240°
Total				173.8	

Table 1: Lonnie Claims survey acquisition specifications.

Longitude	Latitude	Easting	Northing
-124.26.05.99	55.43.06.02	409856	6175665
-124.24.57.59	55.43.05.23	411049	6175616
-124.24.57.88	55.42.51.18	411035	6175182
-124.22.46.32	55.42.51.55	413331	6175147
-124.22.46.17	55.41.06.51	413269	6171900
-124.22.21.70	55.41.05.88	413696	6171872
-124.22.21.46	55.40.37.99	413683	6171010
-124.22.41.21	55.40.37.77	413338	6171010
-124.22.41.45	55.40.21.72	413324	6170514
-124.23.25.65	55.40.22.10	412552	6170541
-124.23.26.36	55.40.08.28	412531	6170114
-124.24.33.86	55.40.08.61	411352	6170148
-124.24.34.07	55.40.36.72	411366	6171017
-124.25.36.92	55.40.37.77	410269	6171072
-124.25.42.12	55.42.07.16	410235	6173837
-124.26.06.25	55.42.07.56	409814	6173858

Table 2: Lonnie Claims survey polygon coordinates using WGS 84 in UTM zone 10N.

2.0 Geophysical Data:

Geophysical data are collected in a variety of ways and are used to aid in the exploration and determination of geology, mineral deposits, oil and gas deposits, contaminated land sites and UXO detection.

For the purposes of this survey magnetic data were collected to serve in the exploration of the Lonnie Claims which contains rocks that are prospective for niobium and rare earth elements.

2.1 Magnetic Data:

Magnetic surveying is probably the most common airborne survey type to be conducted for both mineral and hydrocarbon exploration. The type of survey specifications, instrumentation, and interpretation procedures, depend on the objectives of the survey. Typically magnetic surveys are performed for:

1. Geological Mapping to aid in mapping lithology, structure and alteration in both hard rock environments and for mapping basement lithology, structure and alteration in sedimentary basins or for regional tectonic studies.
2. Depth to Basement Mapping; for exploration in sedimentary basins or mineralization associated with the basement surface.

3.0 Survey Operations:

Precision GeoSurveys flew the Lonnie claims using a Bell 206 BIII Jet Ranger (Figure 4) contracted from Interior Helicopters Ltd. From their base at Fort St. James. The survey lines were flown at a nominal line spacing of one hundred (100) metres and the tie lines were flown at one thousand (1000) metres spacing for the magnetometer data. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying.

Figure 4: Bell 206 Jet Ranger equipped with mag stinger for magnetic data acquisition.

The survey was performed from the Fort St James Airport located approximately 140 km south of the Lonnie Claims. The Precision crew consisted of a total of two members:

Brad Van Koughnett – Pilot
Shawn Walker – Operator/on-site geophysicist

The survey was flown on February 26, 2010. The survey was complete within one day. The easternmost tie-line was omitted due to failing weather conditions.

4.0 Equipment:

For this survey a magnetometer, base station magnetometer, laser altimeter, and a data acquisition system were required to carry out the survey and collect quality, high resolution data.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 5), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and generation of navigation information for the pilot display system.

Figure 5: AGIS installed in the Bell 206.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sources are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post survey quality control procedures.

4.2 Magnetometer:

The magnetometer used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted "stinger" (Figure 6). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS screen the operator can view the raw magnetic response, the magnetic fourth difference and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth's geomagnetic field.

Figure 6: View of the mag stinger.

4.3 Base Station:

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys uses a Scintrex proton precession Envi Pro magnetometer as its base station. This is mounted as close to the survey block as possible to give high, accurate magnetic field data. The Envi Pro base station (Figure 7) uses the well proven precession technology to sample at a rate of 0.5 Hz. A GPS is integrated with the system to record real GPS time that is used to correlate with the GPS time collected by the airborne CS-3 magnetometer.

Figure 7: Scintrex Envi Pro proton precession magnetometer.

4.4 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange AR3000 laser altimeter (Figure 8). This is attached at the aft end of the magnetometer boom. The AR3000 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 300 m off of natural surfaces with 90% reflectance and 3 km off special reflectors. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data are transmitted and recorded by the AGIS at 10 Hz.

Figure 8: Acuity AccuRange AR3000 laser altimeter.

5.0 Data Processing:

After all the data are collected after a survey flight several procedures are undertaken to ensure that the data meet a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj geophysical processing software.

5.1 Magnetic Processing:

During aeromagnetic surveying noise is introduced to the magnetic data by the aircraft itself, movement in the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey (057°/242° and 152°/324° in the case of this survey) at an elevation where there is no ground effect in the magnetic data. In each heading roll, pitch and yaw maneuvers are performed by the pilot, these maneuvers provide the data that is required to calculate the necessary parameters for compensating the magnetic data. A computer program called PEIComp is used to create a model for each survey to remove the noise induced by aircraft movement; this model is applied to each survey flight so the data can be further processed.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. Precision GeoSurveys uses a Scintrex Envi Pro base station with an integrated GPS antenna that samples at every 2.0 seconds. Base station readings were reviewed at regular intervals to ensure that no data were collected during periods with unacceptably high diurnal activity (greater than 10 nT per minute). The base station was installed at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines. The magnetic variations recorded from the stationary base station are removed from the magnetic data recorded in flight to ensure that the anomalies seen are real and not due to solar activity.

A lag correction was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 5.25 m ahead of the GPS antenna and from the computer processing time. Thus, a lag correction of 1.7 seconds was performed to the total magnetic field data.

Some filtering of the magnetic data is also required. A Non Linear filter was used for spike removal. The 1D Non-Linear Filter is ideal for removing very short wavelength, but high amplitude features from data. It is often thought of as a noise spike-rejection filter, but it can also be effective for removing short wavelength geological features, such as signals from surficial features. The 1D Non-Linear Filter is used to locate and remove data that are recognized as noise. The algorithm is 'non- linear' because it looks at each data point and decides if that a datum is noise or a valid signal. If the point is noise, it is simply removed and replaced by an estimate based on surrounding data points. Parts of the data that are not considered noise are not modified. The combination of a Non-Linear filter for noise removal and a low pass trend enhancement filter resulted in level data as indicated in the results section of this report. The low pass filters simply smoothes out the magnetic profile to remove isolated noise.

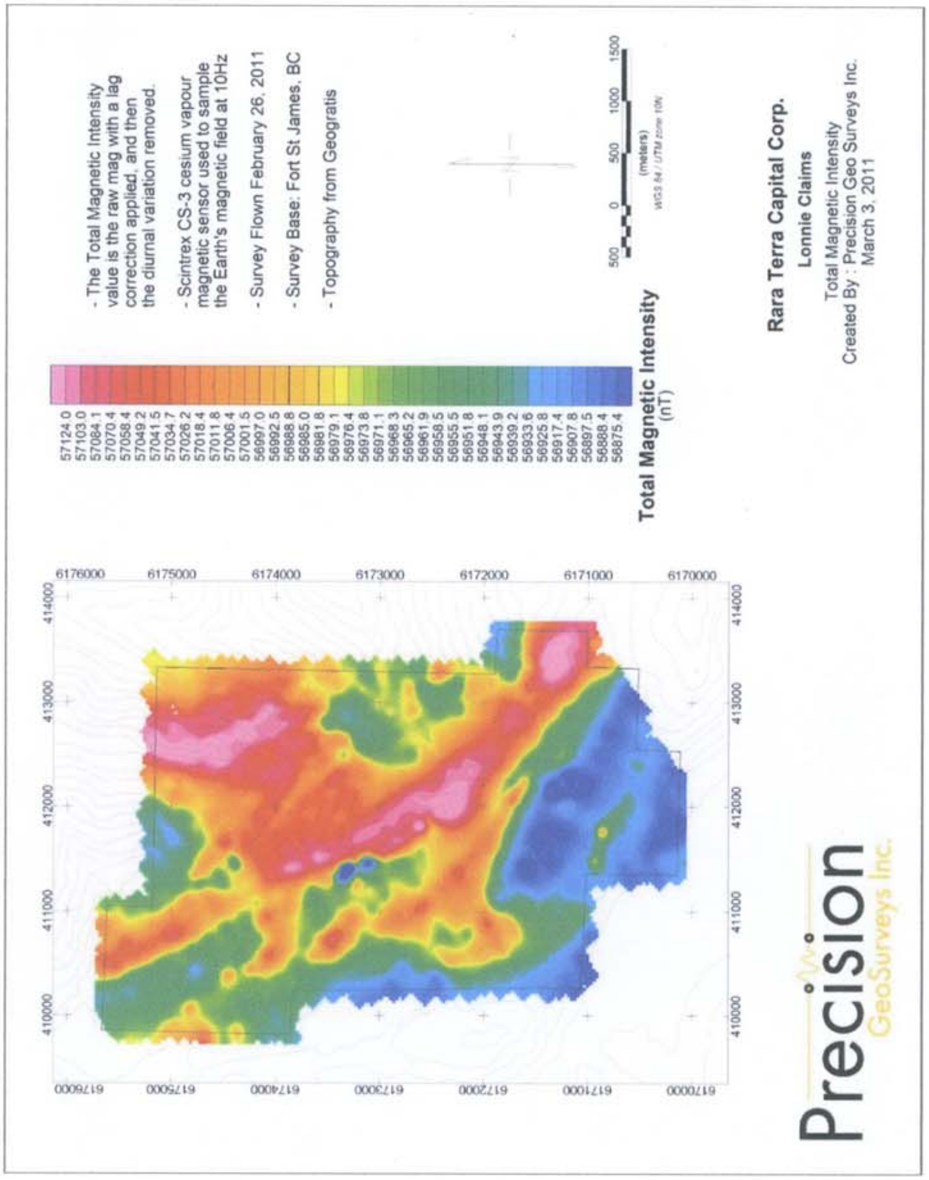
5.2 Final Data Format

Abbreviations used in the GDB files are as follows:

X – Easting in WGS84, UTM zone 10N
Y – Northing in WGS84, UTM zone 10N
Galt – gps laser altimeter readings in metres
LAlt – laser altimeter readings in metres
dtm – digital terrain model
GPStime – GPStime
basemag – diurnal data in nT
mag_final – final corrected total magnetic field in nT
mag_fourth_diff – magnetic fourth difference in nT
Rmag_lag – lagged total magnetic field in nT
RMg1_nT – raw magnetic field in nT

The data files are provided in two (2) formats, the first is a .GDB file for use in Geosoft Oasis Montaj, the second format is a .XYZ file, this is a text file.

Appendix A
Maps



- The Total Magnetic Intensity value is the raw mag with a lag correction applied, and then the diurnal variation removed.

- Scintrex CS-3 cesium vapour magnetic sensor used to sample the Earth's magnetic field at 10Hz

- Survey Flown February 26, 2011

- Survey Base: Fort St James, BC

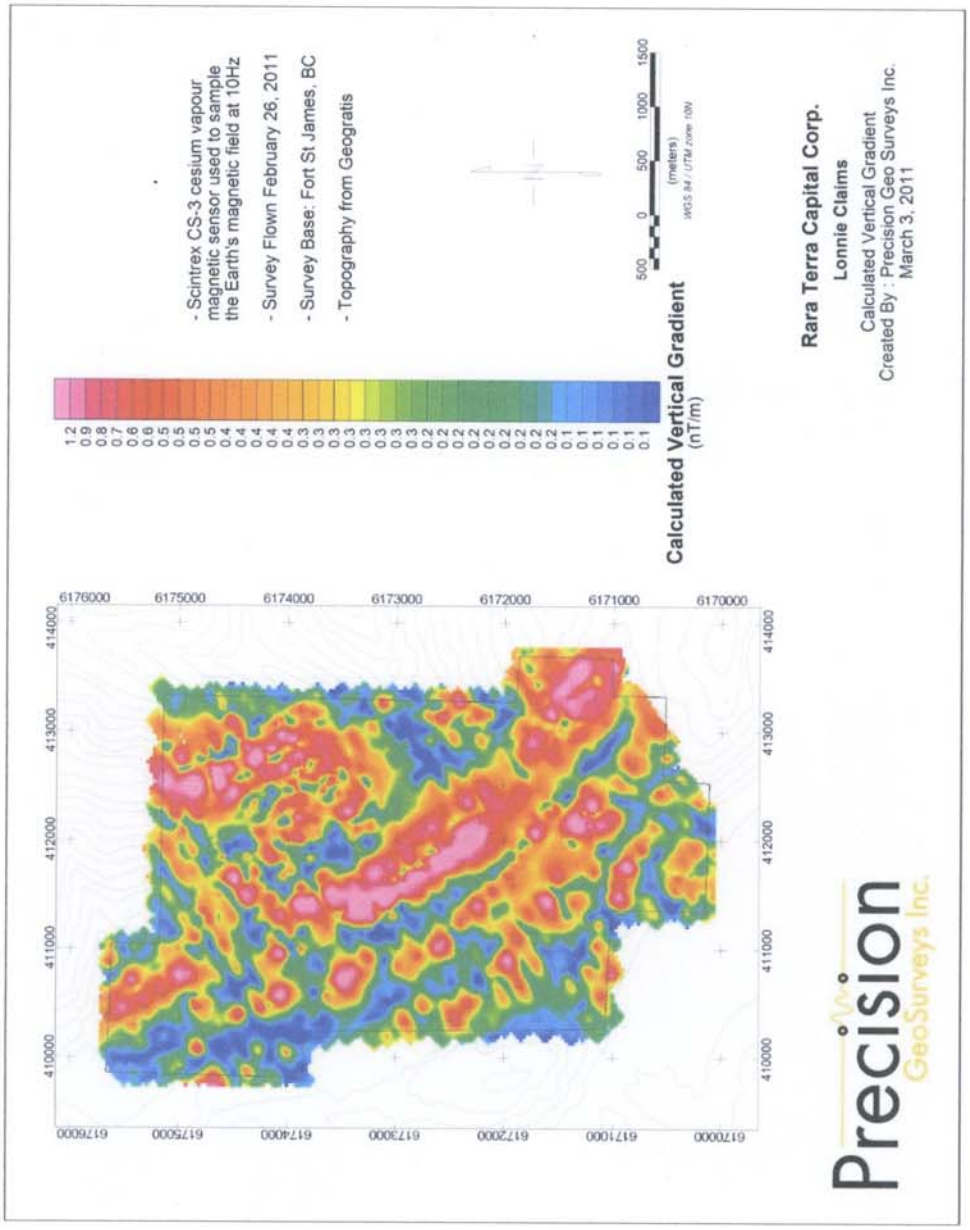
- Topography from Geogratis

Rara Terra Capital Corp.

Lonnie Claims

Total Magnetic Intensity
Created By : Precision Geo Surveys Inc.
March 3, 2011

Map 1: Lonnie claims total magnetic intensity.



Map 2: Lonnie claims calculated vertical gradient.