BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM MINISTRY OF ENERGY AND MINES GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:2000/2001REPORT #:PAP 00-33NAME:FAYZ YACOUB

BRITISH COLUMBIA PROSPECTORS ASSISTANCE PROGRAM PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- Refer to Program Requirements/Regulations 15 to 17, page 6.
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (see section 16) required with this TECHNICAL REPORT.

Name FOYZ YOCOULD	Reference Number <u>2000/20</u> 0) PQ
LOCATION/COMMODITIES	
Project Area (as listed in Part A) VMS 1-4	MINFILE No. if applicable
Location of Project Area NTS 103P/11W	Lat 55° 37.6 Long 129° 17.08
Description of Location and Access 55 KMB SOL	Hapst of Stewart, Skappa Mining
Division, Access is only by helicop	iter approximately 25-30 minutes
from stewart	F NO.00 0 d Glactore 1
Main Commodities Searched For GOIG IN QUAL	12 VEIDS AND DITUTION ODUOD
Known Mineral Occurrences in Project Area * A number	* OFFICESON 2009
* The highest gromalays gold (RG	in the map sheet area.
WORK PERFORMED	
I. Conventional Prospecting (area)	prospecting 3km ²
2. Geological Mapping (hectares/scale) Geological	mapping 1 km2
3. Geochemical (type and no. of samples) 20 Yock E	amples & 17 stream samples
4. Geophysical (type and line km)	
5. Physical Work (type and amount)	
6. Drilling (no. holes, size, depth in m, total m)	
7. Other (specify) <u>1 Km OF base</u>	line
SIGNIFICANT RESULTS 10% CU, 1602 Commodities <u>CU</u> , AU, Ag Location (show on map) Lat <u>55° 37.5</u> Lor Best assay/sample type <u>LONGE</u> ONOULOF VOICON MOBIVE bondid galena, Sphalentit Description of mineralization, host rocks, anomalies <u>FAVO</u> <u>TWO</u> <u>different</u> types of <u>deposits</u> bound massive <u>SU</u> [Phide deposits bound massive <u>SU</u> [Phide deposits DOM MOSIVE <u>SU</u> [Phide deposits ALENDING LANCE ANGULAR DOULDE	Liam Aug 99.79/100 Ag Claim Name VMS 2 Ig 129° 17.7 Elevation C boulder with semi-massive to 2 chalcopyric, and malachite Chalcopyric, and malachite Chalcopyric, and malachite Chalcopyric, and malachite 1- Gold in guntz veins 2-Strata 2. Gossan zone exposize for vith strong argillic to senicitic 2. Sof volcanic rocks with semi-
massive to messive bandid ou Rinite.)	iphiaes (galena, sphalerite, chikalco
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Supporting data must be submitted with this TECHNICAL REPORT

Information on this form is confidential for one year from the date of receipt subject to the provisions of the Freedom of Information Act.

NTS : 92I/4W LAT : 50 59N LON :121 18W

> MINISTRY OF ENERGY & MINES DEC 2 0 2000 RECEIVED SMITHERS, B.C.

GEOLOGICAL AND GEOCHEMICAL PROSPECTING REPORT ON THE BARBECUE AND LANDSCAPE CLAIM GROUP KAMLOOPS MINING DIVISION BRITISH COLUMBIA

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BY FAYZ YACOUB, P.Geo., F.G.A.C. 6498-128B Street Surrey, British Columbia V3W 9P4

November 2000

SUMMARY

The Barbecue and Landscape mineral claim group comprises the Barbecue, and the Landscape claims, totaling twenty-four units, lies approximately 28 kilometers north of Cache Creek, in south-central British Columbia.

Geologically, the area of the property is underlain by rocks of the Cache Creek Complex consisting of acidic to intermediate volcanic lava, and minor basalt and diabase units. The initial geological investigation on the claim group indicated the presence of three lenses of pumice lava rocks, all occurrences are well exposed along the main logging road, outcrops range from 350 - 650 meters in length for approximately three Kilometers and 75 - 150 meters in width, suggesting sufficient reserves for several decades, and an enormous industrial mineral potential for several applications and uses such as landscaping purposes, flame bed material in the barbecue industry, soil mixing, and sports tracks.

Since the property enjoys an excellent location to the near by cement plant in Marble Canyon, the pumice of the property was chemically tested for its pozzolonic properties. All chemical results meet the ASTM specifications, and the pumice chemically can be used as a mineral admixture in concrete, however the physical characteristic still needs to be tested and pass the ASTM specifications.

During the 2000 prospecting program a new showing of volcanic ash was located by the writer. The initial investigation of the volcanic ash exhibit good absorption potential. Representative samples of the recently located volcanic ash were analyzed to determine the chemical composition. The results indicated that the rock is aluminum silicate, possibly volcanic ash. Rocks are not dusty, occupies an area of 60 x 180 meters, fully exposed in a high steep face located at the central part of the Barbecue claim.

Several other new outcrops of red lava were also located during the 2000 prospecting program.

The expected low mining costs due to the location value of the property, supported by the excellent road access, and the full exposure of the lava rocks along the main road suggest that the Barbecue and the Landscape Claim Group have an enormous potential for developing pumice deposit sufficient to support the Canadian market.

It is concluded that a resource evaluation program is highly warranted to evaluate the industrial mineral potential of the property, and estimate the reserves to determine the commercial values of the deposit

A second phase exploration program with a total budget of \$27,000.00 is proposed to follow-up on the successful results obtained from the 1999 and 2000 prospecting programs.

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1.0 INTRODUCTION

The main purpose of this report is to evaluate the industrial mineral potential of the property and the 2000 results of the geological, and geochemical surveys carried out on the property. The report also describes the regional geology and the past exploration activities in the area, and outlines a budget proposed for the next phase exploration program.

The work was performed by Fayz Yacoub, P.Geo., and a field assistant.

This report is based upon the geological and geochemical data collected during the 1999 exploration activities on the property, the recent geological data collected during the 2000 prospecting program, and on a review of government assessment reports, regional geological maps, and claim data from the Vancouver Mining Recorder's office. The writer was on the property between July 16-19, October 1-3, October 11-12, and October 17-19, 2000.

2.0 LOCATION, ACCESS & PHYSIOGRAPHY (Figure 1)

The Barbecue and Landscape claim group is located in south-central British Columbia, approximately 28 kilometers north of Cache Creek. The center of the claim group lies 7.5 kilometers northeast of the confluence of Scottie Creek and the Bonaparte River.

Access to the property is via Highway #97 north from Cache Creek to the Scottie Creek road. A well maintained logging road, runs off Scottie Creek Road to the southeast onto the claim group providing easy access to most of the property area.

Topography in the area consists of rolling hills and steep ridges. Elevations vary from 2900 to 4100 feet with the total relief in the order of 1200 feet.

Much of the property is covered by overburden with several huge outcrops confined to steep ridges and the main logging road. Vegetation is sparse and consists mainly of sage brush and scrub pine. The property lies within the interior dry belt so precipitation is minimal and weather is mild.

3.0 PROPERTY STATUS (Figure 2 & 3)

The Barbecue and Landscape claim group consists of two contiguous mineral claims, totaling of 22 units. The claim group lies in the Kamloops mining division. The property is wholly owned by Fayz Yacoub of Surrey, B.C.

Claim Name	Record #	Units	Expiry Date
Barbecue	364891	16	Aug. 14/ 2001
Landscape	364892	6	Aug. 21/ 2001







Figure #1

W 121 21.73 LANDSCAPE 364892 BARBECUE 364891 N 50 58.92`` SCOTTIE CREEK ROAD SCOTTIE CREEK N SCALE 1 : 50,000 2,000 2,000 4,000 6.000 0 FEET





The total area of the claim group is 5.5 square kilometers, 550 hectares, 1358.5 acres. The legal cornerposts of the Barbecue and Landscape claims are located by the writer at G.P.S. readings (N 50 58.922 -W 121 21.739), and (N 50 59.064 - W 121 18.040) respectively.

4.0 AREA HISTORY

In the early 1920's, a chromite deposit was discovered on Chrome Creek and the north fork of Scottie Creek. Samples taken from these two creeks assayed between 0.69 g/ton, and 4.8 g/ton platinum (Thomlinson 1920). Two panned samples collected at 400 and 800 meters upstream from the mouth of the Chrome Creek yielded 0.14 oz/ton and 0.04 oz/ton platinum.

In 1939, the Consolidated Mining and Smelting Company of Canada Limited drove an adit to test the Ferguson Creek showing, and a resource potential of 18,000 tones with 15% chromite and further 18,000 tones of equivalent material was estimated by Rice of the Geological Survey.

In 1994 Tilava Mining Corporation carried out an exploration program on the tertiary volcanic tuffs along the upper area of the Ferguson Creek to test the potential of the property for natural pozzolan and zeolites.

In 1986, five rock samples were collected by from the Barbecue claim (previously known as Plat IV). Elements related to platinum mineralization were low, and there was no detectable platinum or palladium.

During the 1987 fieldwork investigation by the Geological Survey of Canada massive rhyolite ash was discovered near and in Scottie Creek Valley (where the Barbecue and Landscape claims are located), two lenses up to 100 meters thick and three kilometers long consist of rhyolite ash containing layers of andesite volcanic conglomerate with clasts lying in the acid tuff matrix.

In 1998 the Barbecue and the Landscape mineral claims were staked to be evaluated for their industrial mineral potential for pumice and pozzolan material.

From July 9-12,1999, a two-man crew consisting of the writer and helper, carried out a fieldwork program of geological mapping, rock sampling, and grid work. The purpose of this program was to:

A) To cover the target area of the property with geological, and geochemical surveys in order to define the size, and the chemical and physical characteristics of the volcanic lava rock, exposed along Scottie Creek logging Road.

B) To evaluate the industrial mineral potential of the claim group, and to determine the commercial value of the lava rock deposit of the property.

A total of 23 rock samples were collected from the property during the 1999 fieldwork program. All samples were sent to ACME Analytical Laboratories, eleven samples for geochemical whole rock I.C.P. analysis, five samples for multi - element I.C.P. analysis conducted before and after igniting the samples at 900 degrees C, and five samples were examined for detectable odors, evidence of fracturing, and explosion, see figure # 4 for sample location and Appendix B for chemical results.

5.0 **REGIONAL GEOLOGY**

The Barbecue and Landscape Claim Group is situated within the intermontane belt near the eastern margin of the Cache Creek assemblage. This assemblage comprises three facies belts. A western belt of Triassic chert, argillite and siltstone encloses Upper Triassic volcaniclastics. A central belt includes massive mid-late Permian carbonates of the Marble Canyon Formation and also includes minor thinbedded carbonate, tuff and chert of Triassic age.

An eastern belt contains large bodies of probably late Permian basalt, ultramafics and melange. The melange consists of late Permian to late Triassic chert, and argillite matrix, with blocks of carbonates, chert, basalt and ultrmafic blocks of unknown age, and acidic volcaniclastics.

Overlying the upper Cache Creek group is the upper Triassic Nicola group consisting of basic to acidic volcaniclastic rocks and intercalated argillite. These rocks tend to be more acidic in the west and basic in the east.

6.0 THE 2000 FIELDWORK PROGRAM

6.1 Scope & Purpose

The 2000 prospecting program was conducted on the Barbecue and Landscape Claim Group between July 16-19, October 1-3, October 11-12 and October 17-19, 2000.

The purpose of the program was to prospect, locate, and map any additional volcanic lava outcrop, and evaluate the industrial mineral potential of the claim group.

6.2 Methods & Procedures

Utilizing compass and hip-chain, a slope corrected 2000 meters of base line was laid out between the western, and the central outcrops that expose along Scottie Creek Road. The base line was running at 90 degrees azimuth, started at the L.C.P as a base point.

Geological mapping, prospecting and rock sampling was performed at scale 1:5,000 over selective parts of the property. Control for mapping was established using G.P.S., compass, hip-chain, topographic map, and the 1999 existing survey grid.

7- RESULTS

7.1 **PROPERTY GEOLOGY** (Figure 4)

The area of the property is underlain by rocks of the Cache Creek complex consisting of rhyolite to basaltic lavas, pumice, and volcanic ash. This assemblage is thought to correlate with the Chilcotin Group. The initial geological investigation during the 1999 fieldwork program on the property indicated the presence of three outcrops of light to dark brown, red and black pumice volcanic lava. All three outcrops are well exposed along the main logging road, ranging between 350 - 650 meters in length, and between 75 - 150 meters in width over a vertical elevation of 25 - 30 meters, suggesting sufficient reserves for several decades.

7.1.1 The Western Outcrop (Photo # 1& Figure # 4)

This outcrop is located just 50 meters east of the Barbecue claim L.C.P, at the southwest corner of the claim group. Light brown to red in color, very fine grained, glassy, vesicular pumice rocks, formed by gas bubbles puffing up the viscous crust of rhyolitic to andesitic composition. Cavities range from less than 1 mm to 5 mm in diameter occupying 40 - 50% of the total rock volume. The rocks contain 54 - 57% silica indicating the antiseptic composition of the lava.

The outcrop exposed between line 0+00, and line 4+00, trending almost 110 - 120 degrees, for 400 meters, with an average width of 50 meters. All rocks are lightweight, with punice texture, ranges between .94 and 1.27 in specific gravity.

An intensive clay alteration zone, located at the northwest corner of the outcrop. The alteration zone, largely composed of clay minerals, possibly montmorilonite.

7.1.2 The central Outcrop (Photo # 2, 3 & Figure # 4)

Light grey to black, and red volcanic lava, occupies the central part of the Barbecue claim, approximately 1.7 km east of the L.C.P between G.P.S. readings, N 50 59.084 - W 121 20.662 and N 50 58.968 - W 121 20.217. Rocks are light grey to red in color, fine-grained vesicular texture, 60 - 70% cavities with sharp cutting edges. They are antiseptic in composition consisting essentially of calcic plagioclase, pyroxene, and siliceous fragments. The central part of the outcrop composed of siliceous fragments cemented by red colored matrix. Rocks are fully exposed along the north side of the logging road for a total length of 650 meters, and an average width of 100 meters. The red colored lava occupies approximately 40% of the outcrop, and has specific gravity between 1.10 and 1.27, while the black lava is relatively lighter with specific gravity of .9, and silica contents between 54.52% and 56.39%. The outcrop is trending almost East - West.

7.1.3 The Eastern outcrop (photo # 4 & Figure # 4)

This outcrop is located at the southeast corner of the Barbecue claim, approximately 3.2 kilometers east of the L.C.P., between G.P.D. reading N 50 58.985 - W 121 19.394, and N 50 59.01 0 - W 121 19.065.





RED PUMICE OF THE WESTERN OUTCROP PHOTO # 1

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THE CENTRAL OUTCROP EXPOSURE ALONG THE MAIN LOGGING ROAD PHOTO # 2

10



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BLACK LAVA OF THE CENTRAL OUTCROP PHOTO # 3 Rocks are fine-grained to glassy, vesicular volcanic lava, light cream, brown and red color, with disconnected cavities ranges from less than 1 mm to 10 mm in diameter, occupying 50 to 60% of the total volume. The lava rock composed of siliceous fragments connected by a red colored matrix of antiseptic composition. The outcrop is fully exposed along the north side of the main logging road, for 450 meters, with an average width of 100 meters, and a minimum of 25 meters vertical elevation. The outcrop is trending northeast - southwest.

7.1.4 Volcanic ash occurrence located during the 2000 prospecting program

The 2000 prospecting program was confined to prospecting, mapping, and rock sampling within the general area of the Barbecue Claim in order to locate new outcrops of volcanic lava, or related rocks. All fieldwork was concentrated between the western and the eastern outcrops previously located during the 1999 work program (see figure # 4).

During the 2000 prospecting program the writer has located new industrial mineral occurrence of volcanic ash. The new occurrence occupies an area of 60 x 180 meters, located at approximately 700 meters northeast of the L.C.P of the Barbecue Claim. The center of the outcrop is located at G.P.S N 50 59.093' W 121 21.418'.

The general character of the recently located outcrop is stratiform tabular, flat laying, fine to mediumgrained volcanic ash of pumice character. The ash is in flat beds approximately 25 meters thick. The lowest exposed bed is light cream to buff color, followed by several beds of flat laying, coarse-grained buff ash with siliceous fragments. Thin beds of white ash and other beds of volcanic lava ranging between 5 centimeters and 8 meters in thickness, are located within the 25 meters cliff exposure of volcanic ash. In places the weathering of the ash materials has left isolated pinnacles 10 meters high. Both kinds of ash (buff, and white) are vesicular in texture, light weight pumice (see appendix B for analytical results).

Several other small outcrops of red lava were recently located and mapped during the 2000 prospecting program (see figure # 4).





RED - MASSIVE LAVA OF THE EASTERN OUTCROP PHOTO # 4

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7.2 THE CHEMICAL AND PHYSICAL CHARACTERISTICS OF THE PUMICE ROCKS OF THE PROPERTY.

Pumice is a glassy, vesicular volcanic lava formed by rapid cooling of molten material near the surface, generally of rhyolitic to antiseptic composition

Physical and chemical characteristics such as, specific gravity, density, size, color, soundness, percentage of expansion or contraction, fineness, chemical composition, and toxic contents. These characteristics are responsible for the commercial value of any pumice deposit.

7.2.1 The Chemical Characteristics of the pumice

The Explosion Test

Five samples were tested and examined by ACME Laboratories for detectable odors, and visually examined for evidence of fracturing, or explosion. The results indicated no evidence of fracturing, no detectable odor and no explosion when the lava rock was heated to 900 degrees for 40 minutes. This test indicated that the lava rock of the Barbecue and Landscape Claim Group are chemically suitable to be used as a flame bed material in the barbecue industry (see appendix B).

The loss of ignition Test

Five samples were tested to determine the loss of ignition (L.O.I.) of the lava rock. Samples are dried at 60 degrees for two hours then crushed and pulverized. A portion of pulp is placed in a ceramic bowl and heated to 900 degrees for 40 minutes. Subsequently the samples are removed, cooled and analyzed by I.C.P.-MS. Comparison of I.C.P.-MS data for the same samples before and after the ignition. A significant decrease in the concentration of most elements (up to 50%) were noticed. This is not attributed to volatilization of the metals but rather to sintering of the samples. Minute forms glass upon cooling which locks in the elements and makes them less available to acid digestion. Firing of the lava rock may make the rock more inert to chemical attack (see appendix B).

The Pozzolanic Material Test

Eleven samples were tested for ASTM chemical requirements to be used as mineral admixture class N. All samples contained SiO2 ranging from 54.52% to 57.45%, Al2O3 from 15.61% to 16.54, and Fe2O3 from 6.33% to 8.54%. The combined sum of these three oxides exceeds 70% in every sample. The total sulphur present as all species is less than or equal to 0.05% in all samples. If present in the form of SO3, the maximum concentration would be 0.12%. Lost of Ignition content ranges from 1.6% to a maximum of 6.0% (see appendix B).

Accordingly all samples meet the chemical requirements for N class Pozzolanic materials.

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7.2.2 The Physical Characteristics of the pumice

Size and Color

The pumice deposit of the Barbecue and Landscape Claim Group can produce three different sizes, and two different colors.

<u>Small size</u> ($\frac{1}{2}$ to 1 inch, pumice pebbles), suitable as a decorative pumice for indoor uses. <u>Medium size</u> (1 to 1 $\frac{1}{2}$ inch, pumice cobbles), suitable for outdoor, decorative and landscaping uses. <u>Large size</u> (2 to 3 inches, pumice cobbles), suitable as a flame bed material in the Barbecue industry. The pumice deposit of the property has two different colors includes, 70% red color and 30% light grey to black color.

Specific Gravity

The specific gravities of five rock samples collected from both red, and black pumice within the property, were tested by ACME. Laboratories The results indicated that the pumice of the Barbecue and Landscape Claim Group has specific gravity ranges from .94 to 1.27 with an average of 1.1. The black pumice has less specific gravity than the red lava (see appendix B).

8.0 USES OF LAVA ROCK PRODUCTS

Uses of Lava Rock in Landscaping

The high quality landscaping lava rock is attractive in all forms. The large, massive lava rock can easily be placed as boulders, and will be perfect around ponds and waterfalls as a unique product of nature. The medium size products will be attractive as a maintenance free exterior products when it compared to maintenance and replacement costs of traditional landscape materials, such as bark.

The products will be as an attractive ground cover in landscape areas, where products will not fade or decomposed.

The lava rock products can also be used as interior landscape materials and will display the following special characteristics:

- 100% nature
- Contains minerals essential to plant growth
- Helps retain moisture
- Fireproof
- For use in atriums, planters and pots

The fine-grained to dusty products can be used in gardening, soil mixing, greenhouses and house plants

Uses of Lava Rock in Barbecue

The quality of the lava rock products for the Barbecue uses will depend on the following factors: 1- The presence of any detectable levels of high toxic fumes such as arsenic, lead, cadmium, mercury and antimony in the products.

2- The ability of the lava rock to explode under high temperatures.

The volcanic lava rock occurrences within the claim group includes extensive east-west trending outcrops, well exposed along the main logging road for three kilometers, and that can provide economic potential of pumice deposit located in the south-central part of the province.

Uses of Lava rock as a mineral admixture in concrete (Pozzolan)

The term (Pozzolan) has been defined by the American Society as a siliceous or siliceous and aluminous material which itself possesses little or no cementitious value but will, in finely divided form and in the presence of moisture, chemically react with calcium hydroxides at ordinary temperatures to form compounds possessing cementitious properties".

Recently it has been recognized that pozzolan can impart certain desirable properties to Portland cement mixes. Among the advantages claimed for pozzolan, Portland cement are generally cheaper in cost; lowering of heat of hydration. Earlier development of a maximum rate of heat development, improved work ability, increased plasticity, decreased in segregation of the concrete ingredients; decrease in bleeding of water; improved water tightness of the concrete; improved tensile strength.

Pozzolan can be used to replace from 10 to 40 per cent by weight of the Portland cement in a concrete mix to produce light weight concrete.

9.0- THE INDUSTRIAL MINERAL POTENTIAL OF THE CLAIM GROUP

Massive Volcanic Lava deposit was recently recognized on the Barbecue and landscape claim group in central British Columbia. The deposit is readily accessible by Highway #97 and all seasons logging road.

The volcanic Lava rock deposit on the Barbecue and landscape property can be an excellent opportunity for British Columbia to develop, produce, and market its products in Canada.

The Volcanic Lava Rock deposit has several important applications such as Landscaping and gardening, flame bed material for barbecues and fireplaces, and as a soil additive for agriculture purposes. The Lava rock is considered a natural commodity, environmentally friendly and can be presented to the market as a packaged consumer products of several types of considerable values.

The Volcanic Lava rock production will be largely used for decorative and Landscaping purposes. The high quality (high porosity, less density lava) will be used for the Barbecue industry as a flame bed materials. The fine materials of the Lava rock can be used for soil mixing and sports tracks.

The expected low production cost of the deposit, supported by the excellent road access to the property, the good exposure of the lava rock, and the different varieties of the products will make the deposit viable since the Canadian market for the Lava rock is presently still dominated by the United States.

The production process will be as follows:

- Crushing
- Screening and sorting the products to different sizes and colors to meet the market demands.
- Packing and shipping.

The Lava rock can also be used as a mineral admixture in concrete to produce up to 40% by weight of Portland cement. The deposit was chemically tested and passed the chemical requirements as a possible source of pozzolan, however the deposit still have to be tested for the ASTM physical requirements.

The volcanic ash occurrence recently located during the 2000 prospecting program is a natural aluminum silicate, light weight ash. Field test indicated the ash has good absorption capability.

10.0 DISCUSSION AND CONCLUSION

The 1999 program on the Barbecue and Lava rock Claim Group has recognized a new source of pumice rock in British Columbia, with possible potential of natural products. The program also added several new information on the chemical and physical characteristics of the lava rock of the property.

The massive volcanic lava rock deposit recently recognized on the barbecue and Landscape claim group in central B.C. suggests a strong potential with possible lifetime supply of low-cost natural pumice.

The lava rock occurrences within the property includes an extensive east-west trending outcrops, well exposed along the main logging road for three kilometers, which can provide enormous economic potential for natural products. The lava rock within the property have a variety of colors with 75% red lava and 25% between gray, sage, and black lava. The red lava is the most attractive color for the landscaping use, and the gray to black lava will be suitable as flame bed material for the barbecue use.

All lava rock products can be crushed, screened, bagged and shipped at the site, which is located 28 kilometers north of Cache Creek.

The chemical characteristic of the lava rock is very important, especially the tendency of the lava rock to explode, as well as the toxic contents.

Five samples were tested and examined by ACME Laboratories for detectable odors, and visually examined for evidence of fracturing, or explosion. The results indicated no evidence of fracturing, no detectable odor and no explosion when the lava rock was heated to 900 degrees for 40 minutes. This test indicated that the lava rock of the Barbecue and Landscape Claim Group are chemically suitable to be used as a flame bed material in the Barbecue industry.

Eleven samples were tested to determine the loss of ignition (L.O.I.), and analyzed to determine the total carbon (C/TOT) and the total Sulphur (S/TOT) contents. The results of these tests indicated that all samples meet the chemical requirements for N Class Pozzolanic materials, however the physical ASTM test still to be determined.

The 2000 prospecting program was successful in locating a new occurrence of volcanic ash and several other occurrences of red volcanic lava. Two rock samples were tested for the whole rock analysis. The results indicated that the rocks are aluminum silicate and has good capacity to absorb oil.

The Barbecue and Landscape Claim Group is considered the closest property to the cement plant in Marble Canyon.

Field programs to date have covered only a small portion of the property. Good potential exists for locating more varieties of lava rocks, and volcanic ash on the remainder of the Barbecue and Landscape Claim Group. For this reason further exploration work is warranted and recommended.

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10.0 RECOMMENDATIONS

A resource evaluation program should be initiated on the property consisting of:

- 1- Geological mapping at scale 1:1000 to evaluate the size, and the surface exposure of each lava rock outcrop.
- 2- Estimate the lava rock reserves on the property.
- 3- Determine the commercial value of the deposit by:
- More testing to identify the physical characteristics of the lava rock such as porosity, specific gravity, and to determine the Pozzolanic action of the lava rock.
- More testing to determine the availability of any toxic elements such as Lead, Arsenic, Cadmium, Mercury, and Antimony that might affect the economic value of the Lava rock.
- Testing the availability of Potassium, Calcium, Magnesium, Nitrogen, and Phosphate in order to determine the quality of the Lava rock to be used in gardening, and soil mixing.
- 4- More testing should be done to evaluate the oil absorption potential of the volcanic ash outcrop located during the 2000 prospecting program on the property.
- 5- Initiate a business plan to bring the volcanic Lava rock deposit of the property into production.

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CERTIFICATE OF QUALIFICATIONS

I, FAYZ F. YACOUB, of 6498-128B Street, Surrey, British Columbia, V3W 9P4, do hereby declare that:

- I am a graduate in: Geology and Chemistry from Assuit University, Egypt (B.Sc., 1967), and Mining Exploration Geology of the international Institute for Aerial Survey and Earth Sciences (I.T.C.), Holland (Diploma 1978);
- 2) I am a fellow in good standing with the Geological Association of Canada;
- 3) I am a professional geologist and a member of the Association of the Professional Engineers and Geoscientists of British Columbia.
- 4) I have actively pursued my career as a geologist for the past twenty years;
- 5) The information, opinion, and recommendations in this report is based upon fieldwork carried out by myself, and on published literature. I was present on the subject property between July 9-12/1999, and between July 16-19, October 1-3, October 11-12, and October 17-19,2000.
- 6) I am the registered owner and have 100% interest in the Barbecue and Landscape Claim Group.



Fayz Yacoub, P.Geo., F.G.A.C. November, 2000

APPENDIX A

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ROCK SAMPLE DESCRIPTIONS

Sample R1 - Sample R9

Sample R1 - R9 are chip samples collected over a widths of 50 to 100 meters from the western outcrop. Red to light brown, vesicular pumice, rhyolitic to andesitic in composition. Rocks are very fine grained to glassy, with cavities range from less than 1mm to 5mm in diameter occupying 40 - 50% of the total rock volume. All rocks are lightweight, with puffy, pumice texture. Specific gravity ranges between .94 and 1.27.

Samples R11, R12, R13, and R15

Four samples were collected over 450 meters of massive, light grey to black volcanic lava occupies seventy percent of the central outcrop. Rocks are light grey to black with fine grained, vesicular texture, contains 60 -70% cavities with sharp cutting edges. The black lava is relatively lighter in density than the red lava of the western outcrop. The specific gravity ranges between .94, and 1.15. Silica contents between 54.52 and 56.39%.

Sample R14, and R15

Two chip samples collected over the red lava of the central outcrop. Rock are fine grained siliceous fragments cemented by red colored matrix. Cavities range from 1mm to 5mm in diameter occupying more than 50% of the total rock volume. The specific gravity of R14. And R15 are 1.1, and 1.15 respectively. Sample R17

Red, massive pumice occupies the eastern portion of the central outcrop. Rocks are vesicular in texture with 60 -70%cavities, consisting of calcic plagioclase, pyroxene and siliceous fragments, cemented by red colored matrix. The specific gravity of sample R17 is 1.27.

Sample R23

Rock sample R23 represents the red lava of the eastern outcrop. Rocks are light cream, brown and red in color, fine grained to glassy in texture with disconnected cavities ranges from less than 1mm to 10 mm in diameter, occupying 50 to 60% of the total rock volume.

Sample R 24

Chip sample over 25 meters of 1.5 meters thick white ash, flat laying bed overlies a light creamy to buff volcanic ash described in sample R 24. Rocks are lighter in weight, very fine-grained vesicular pumice with

Sample R 25

Chip sample over 25 meters of light creamy to buff, fine to medium-grained pumice. Rocks are light weight, with very fine cavities, and composed of sandy pebbly lapilli tuffs. Sample collected from a fairly well exposed outcrop in a cliff located at the central part of the Barbecue claim, at G.P.S N 50 59.093' W 121 21.418'.

APPENDIX B

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ANALYTICAL RESULTS

PHONE (604) 253-3158 FAX (604) 253-1716 ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 (ISO 9002 Accredited Co.) WHOLE ROCK ICP ANALYSIS Yacoub, Fayz PROJECT BAR BO File # A004251 6498 - 1288 St., Surrey BC V3W 9P4 Submitted by: Fayz Yacoub SAMPLE# SiO2 Al203 Fe203 MgO CaO Na20 K20 TiO2 P205 MnO Cr203 Ba Ni Sr Ζr Nb Sc LOI TOT/C TOT/S SUM Y X % % % % %% * * % % % ppm ppm ppm ppm nada waa * * * ppm BAR/2000 R24 65.58 12.74 1.25 1.91 1.52 1.53 3.79 .13 .15 .10 .001 687 4 12.1 .06 <.01 100.91 <20 113 66 17 <10 BAR/2000 R25 65.04 14.97 4.20 .97 3.15 2.29 2.60 .51 .05 .08 .002 699 <20 362 114 16 <10 8 6.4 .04 <.01 100.40 RE BAR/2000 R25 64.91 14.94 4.16 .98 3.15 2.31 2.64 .51 .06 .08 .003 689 21 362 111 16 <10 8 6.5 .03 .01 100.38 GROUP 4A - 0.200 GM SAMPLE BY LIBO2 FUSION, ANALYSIS BY ICP-ES. LOI BY LOSS ON IGNITION. TOTAL C & S BY LECO. (NOT INCLUDED IN THE SUM) - SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. DATE RECEIVED: OCI 23 2000 DATE REPORT MAILED: $\sqrt{\partial} \checkmark 3/v$ J.D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS SIGNED BY ..

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.) 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716



WHOLE ROCK ICP ANALYSIS

104)255-5156 FRA (004/255-3

Yacoub, Fayz File # 9902275 28 - 1288 St., Surrey BC V3W 9P4 Submitted by: Fayz Ya

				6498	3 - 12	8B St	., Su	rrey	BC V3	9 P4	Sub	mitte	d by:	Fayz	Yaco	du						_	
SAMPLE#	Si02	A1203	Fe203	MgQ	CaO	Na20	K20	T i 02	P205	MnO	Cr203	Ba	Ni	۶r	Zr	Y	Nb	Sc	LOI	C/TOT	S/TOT	SUM	
	~	%	%	%	%	%	%	%	%	~ %	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	%		
L0+00E R1	54.94	15.81	7.33	3.14	6.20	3.51	1.76	1.09	.44	.09	.035	1000	57	845	95	18	<10	10	5.0	.06	-04	99.58	
L1+00E R2	56.82	16.05	6.97	3.49	5.97	3.99	2.05	1.07	.45	.11	.035	1062	49	836	101	15	<10	10	2.5	.19	.01	99.75	
L1+00E R3	56.80	16.43	6.82	3.00	5.93	4.01	2.07	1.11	.43	.08	.036	1089	53	865	100	15	<10	10	2.8	.06	<.01	99.76	
L2+00E R6	56.96	16.54	6.93	3,18	6.00	3.94	1.83	1.11	.39	.09	.040	1052	44	867	99	15	<10	10	2.4	.13	<.01	99.65	
L3+00E R8	57.45	16.26	6.89	3.49	6.00	3.87	2.29	1.10	.46	.10	.037	1083	43	890	107	14	<10	10	1.6	.06	.03	99.80	
R11	56.39	15.92	6.33	2.72	5.90	3.30	2.15	.97	.54	.09	.039	951	45	819	92	21	<10	11	5.2	.22	.02	99.77	
R13	55.64	16.52	7.25	2.72	6.49	3.95	1.74	1.01	.89	.10	.038	979	61	823	91	21	<10	12	3.2	.26	.01	99.78	
RE R13	55.55	16.45	7.32	2.70	6.45	4.04	1.70	1.01	.88	.10	.037	982	55	822	92	19	<10	12	3.3	.26	<.01	99.77	
R14	54.52	15.78	6.76	3.14	6.14	3.40	1.28	1.02	.78	.10	.036	869	55	824	89	20	<10	11	6.6	.34	.01	99.77	
R15	56.19	15.85	6.49	2.64	5.88	3.27	2.14	.96	-59	.09	.038	984	54	825	96	20	<10	11	5.4	.29	.05	99.77	
R17	56.61	15.61	6.44	3.21	5.83	3.08	2.20	.95	.48	.10	.040	932	60	796	98	18	<10	11	4.9	.22	.04	99.67	
R23	54.54	16.01	8.54	3.50	7.10	4.20	2.10	1.10	.64	.12	.053	997	81	825	96	18	<10	13	1.6	.12	.01	99.74	
STANDARD SO-15/CSB	49.05	12.81	7.30	7.26	5.87	2.41	1.85	1.66	2.70	1.39	1.060	1921	64	396	711	23	<10	10	5.9	2.41	5.36	99,63	
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.200 GRAM SAMPLES ARE FUSED WITH 1.5 GRAM OF LIBO2 AND ARE DISSOLVED IN 100 MLS 5% HNO3. OTHER METALS ARE SUM AS OXIDES. TOTAL C & S BY LECO (NOT INCLUDED IN THE SUM).

- SAMPLE TYPE: ROCK Samples beginning (RE' are Reruns and (RRE' are Reject Reruns)

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

ACME AN	ALYTI	ICAL	LAB	ORAT	ORI d C	ES	LTD	•	8	52	Ε.	HAST	ING	S ST	. VA	NCOL	IVEI	BC	v	6A	lR6		PH	ONE	(604	4)2!	53-3	3158	FZ	XX (6	504):	253-1	716	2
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SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppb	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm p	Au Ti	n Sr n ppr	Cd	Sb ppm	Bi ppm	V ppm	Ca %	р Х	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	A1 %	Na %	К %р	W pm p	TI I ppm pi	Hg Se pb ppm	Te ( ppm pp	ia S m %	<u></u>
R11 R13 RE R13 R14 R15	.55 .37 .33 .45 .56	24.42 22.60 22.06 28.07 25.13	2.62 2.86 3.50 4.62 2.40	46.5 48.3 47.5 53.6 43.9	12 12 13 20 12	26.9 39.3 38.4 48.0 41.5	9.3 13.0 12.2 12.4 10.3	301 2 413 2 399 2 447 2 296 1	.05 .21 .11 .27 .97	.6 .5 <.1 .6 .4	.8 1.8 1.8 1.9 1.3	<1 7.4 <1 6.9 <1 4.3 <1 3.3 <1 2.0	4 53.0 5 52.5 3 49.6 3 57.4 0 53.8	.03 .03 .03 .04 <.01	<.02 <.02 <.02 <.02 <.02 <.02	<.02 <.02 <.02 <.02 <.02 <.02	47 44 43 41 41	.65 .95 1.02 1.01 .69	.134 .312 .316 .262 .153	12.1 15.1 14.5 15.3 11.2	30.0 32.4 31.8 24.8 29.8	.43 1 .47 1 .46 1 .84 1 .45 1	149.5 149.0 141.9 196.4 160.0	.180 .160 .159 .213 .179	3 2 2 2 1 2	.79 .73 .68 1.10 .76	.061 .059 .060 .058 .063	.15 .10 .11 .18 .13	.4 .4 .3 .5	.04 .03 .02 .06 .04	<5 <.1 13 <.1 9 <.1 11 <.1 11 .1	<.02 2 <.02 2 <.02 2 <.02 3 <.02 3 <.02 2	6<.01 6<.01 7<.01 7<.01 5<.01	
R17 - Standard DS2	.48 14.53	20.25 135.85	2.31 33.98	38.1 172.3	17 255	46.1 42.0	9.9 13.9	299 1 892 3	.69 .66 6	.7 3.3 2	.6 20.9 2	4 1.4 206 4.1	6 50.6 7 32.1	.02 11.81	<.02 9.95	<.02 11.15	41 83	. 56 . 57	.105	7.9 13.7 1	28.2 176.0	.51 1 .70 1	133.9 161.1	.158 .123	2 <1 1	.73 1.87	. 065 . 036	.16 .16 7	.4.	.04 .14 2	8.1 582.7	<.02 2 1.94 5	4<.01 3.01	
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All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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Data FA

Reference State Past Hasting ISO 9002 Act	ACME ANALYTICAL LABORATORIES LTD. St. • Vancouver, B.C. • V6A 1R6 Geochemical Certificate Geochemical Certificate
CLIENT:	Yacoub, Fayz FILE: 9902275A   6498 – 128 St. PAGE: 1A   Surrey, BC V3W 9P4 FILE: 9902275A
TEST METHOD:	Pozzolanic Materials Test
PROCEDURE:	Samples are dried at 60°C for 2 hrs, crushed and pulverized. A 0.2 g aliquot is fused with lithium meta-borate, digested with 4% nitric acid then analyzed by ICP to determine SiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , MgO, CaO, Na ₂ O, K ₂ O, TiO ₂ , P ₂ O ₅ , MnO, Cr ₂ O ₃ , Ba, Ni, Sr, Zr, Y, Nb and Sc. A 1 g aliquot is weighed, heated to 950°C, cooled in a desiccator then weighed again to determine Loss on Ignition (LOI). A 0.1 g aliquot is analyzed by the Leco method to determine Total Carbon (C/TOT) and Total Sulphur (S/TOT). Results are presented in the attached certificate.
	ASTM Designation C 618-89a places the following restrictions on Class N (Raw or Calcined Natural) Pozzolanic materials.
	Mineral Admixture Class
	Silicon dioxide (SiO ₂ ) plus aluminum oxide (Al ₂ O ₃ ) plus iron oxide (Fe ₂ O ₃ ), minimum % 70.0   Sulphur trioxide (SO3), maximum % 4.0   Loss on Ignition (LOI), maximum % 10.0
RESULTS:	The samples tested contained SiO2 ranging from 54.52% to 57.45%, Al2O3 from 15.61% to 16.54% and Fe2O3 from 6.33% to 8.54%. The combined sum of these three oxides exceeds 70% in every sample. The total sulphur present as all species is less than or equal to 0.05% in all samples. If present in the form of SO3, the maximum concentration would be 0.12%. LOI content ranges from 1.6% to a maximum of 6.0%.
	All samples meet the chemical requirements for N Class Pozzolanic materials.
SIGNED BY:	C. C. Leong, J. Wang BC Certified Assayers
DATE:	<u></u>
All results are consider	red the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

ACME ANALYTICAL LABORATORIES LTD. 1852 East Hasting St. • Vancouver, B.C. • V6A 1R6 180 9002 Accredited (1996) Geochemical Certificate

CLIENT: Yacoub, Fayz 6498 -- 128 St. Surrey, BC V3W 9P4 **FILE:** 9902275A **PAGE:** 1A

#### **TEST METHOD:** Explosion Test

- **PROCEDURE:** Samples are dried at 60°C for 2 hrs then placed in a ceramic bowl and heated to 900°C for 40 minutes. Subsequently the samples are removed and examined for detectable odors, the samples are visually examined for evidence of fracturing, spalling or explosion.
  - RESULTS: R11 Sample intact, no evidence of fracturing, no detectable odor
    - R13 Sample intact, no evidence of fracturing, no detectable odor
      - R14 Sample intact, no evidence of fracturing, no detectable odor
      - R15 Sample intact, no evidence of fracturing, no detectable odor
      - R17 Sample intact, no evidence of fracturing, no detectable odor
    - **NOTES:** A colour change was noted after heating, samples became a brighter red. This is attributed to the oxidation of Fe during ignition.
- **TEST METHOD:** Group 1F-MS Ultratrace Analysis by ICP-MS on ignited samples

**PROCEDURE:** Samples are dried at 60°C for 2 hrs then crushed and pulverized. A portion of pulp is placed in a ceramic bowl and heated to 900°C for 40 minutes. Subsequently the samples are removed, cooled to room temperature and analysed by Group 1F-MS.

- **RESULTS:** See attached certificate 9902275A for analytical data
  - **NOTES:** Comparison of ICP-MS data for samples R11, R13, R14, R15 and R17 conducted before igniting at 900°C and the same materials after ignition demonstrates a significant decrease in the concentration of most elements (up to 50%). This is not attributed to volatilization of the metals but rather to sintering of the sample. Minute melting forms glass upon cooling which locks in the elements and makes them less available to acid digestion. Firing of the lava rock may make the rock more inert to chemical attack

D. Toye, C. Leong, J. Wang BC Certified Assayers SIGNED BY: DATE:

All results are considered the confidential property fo the client. Ame assumes the liabilities for actual cost of the analysis only.
						WHOL	E ROO	CK I(	CP ANA	LYSI	S							
			Yacc	<u>yub,</u> 6498 -	<u>Fayz</u> 1288 SI	PRO	UECT rey BC \	<u>BAR</u> /3W 9P4	<u>BO</u> F Submit	'ile ted by:	# A0 Fayz Y	0425: acoub	L					Ê
	SAMPLE#	SiO2 Al2O3 % %	Fe203	MgO Cal	0 Na20 % %	К20 Ti %	i02 P205 % %	MnO ( %	Сг203 Ва % ррп	Ni ppm	Sr 2 ppm pp	2r Y Xm ppm	Nb ppm p	Sc LOI pm %	TOT/C T	OT/S %	SUM %	
	BAR/2000 R24 BAR/2000 R25 RE BAR/2000 R25	65.58 12.74 65.04 14.97 64.91 14.94	1.25 1 4.20 4.16	.91 1.52 .97 3.15 .98 3.13	2 1.53 5 2.29 5 2.31	3.79 . 2.60 . 2.64 .	.13 .15 .51 .05 .51 .06	.10 .08 .08	.001 687 .002 699 .003 689	<20 <20 21	113 e 362 1 362 1	66 17 14 16 11 16	<10 <10 <10	4 12.1 8 6.4 8 6.5	.06	<.01 <.01 .01	100.91 100.40 100.38	
GROUP 4A - 0.200 GM SAMPLE BY LIBO2 FUSION, ANALYSIS BY ICP-ES. LOI BY LOSS ON IGNITION. TOTAL C & S BY LECO. (NOT INCLUDED IN THE SUM) - SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. DATE RECEIVED: OCT 23 2000 DATE REPORT MAILED: //0x 3/00 SIGNED BY																		
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NTS	103P/11W
Latitude	55 37.64' N
Longitude	129 17.08' W

MINISTRY OF ENERGY & MINES
DEC 20200
RECEIVED SMITHERS, B.C.

### GEOLOGICAL AND GEOCHEMICAL PROSPECTING REPORT ON THE VMS 1-4 CLAIM GROUP STEWART CAMP AREA SKEENA MINING DIVISION BRITISH COLUMBIA

By

Fayz F. Yacoub, P.Geo., F.G.A.C. 6498-128 B Street Surrey, B.C. V3W 9P4

September 2000

### SUMMARY

The VMS claim group is comprised of four mineral claims, VMS1-4, totaling 19 units, and lies approximately 55 kilometers southeast of Stewart, B.C. The Stewart area is well known to host epithermal and base metal deposits. Several major and small mines have been developed since 1900. The most recent is the intrusive related gold deposit of Red Mountain located 40 kilometers north of the VMS claim group.

Geologically the area of the VMS 1-4 claims is predominantly underlain by lower to middle Jurassic volcanic and sedimentary rocks of the Hazelton and Stuhini Groups. Intensive propylitic to argillic alteration is pervasive in all major rock units within the area of the VMS claim group in a form of several gossan zones where rocks are intensively altered, bleached and silicified.

Previous and recent mineral exploration on the property has outlined a favorable geological environment for two different types of deposits; epithermal gold and strata bound massive sulfide deposit. Two gossan zones represent good potential of epithermal gold deposit, located on the VMS-1 and VMS-3clams, and two areas of mineralized boulders represent strata bound massive sulfide potential.

The 2000 geological and geochemical prospecting program on the VMS claim group has outlined four promising areas.

### Area One

The main gossan zone area, located approximately at the center of VMS-3 claim on the north side of Lahte Creek. This gossan zone is considered the most persistent alteration zone on the property. The best results came from rock sample R-19 across 20 meters of silicified, altered argillite, returned 10.4 g/ton silver, and R-18 returned 1446 ppm lead, 456 ppm zinc, and 29.9 g/ton silver, over 3 meters.

### Area Two

Silicified altered dark brown, rusty volcanic rocks, located approximately 800 meters southwest of the main gossan zone (area one) at an elevation of 2439'approximately 50 meters north of the Lahte creek, at southeast corner of VMS1. Mineralization consists of 5-6% fine-grained pyrite, very fine-grained galena, and trace of chalcopyrite in rusty altered volcanic dacite with dark brown weathering surfaces. The zone can be traced for more than 20 meters with an average width of 2-4 meters.

Chip sample R7 collected across 3 meters of altered, mineralized volcanic dacite, returned 1.39%pb, 4.51%Zn, 13.2g/ton silver, 86 ppb gold, and 665.3 g/ton Cadmium which is considered the highest cadmium value on the property.

A helicopter reconnaissance over the area indicated that the zone can be followed for 200 - 250 meters to the north, and the size of the zone is even much larger than what is exposed in the Lahte creek valley.

### **Area Three**

Mineralized, Angular boulders of volcanic tuff were located on the north side of the Lahte creek, the boulders are scattered over an area of 75 meters long by 50 meters wide. Sulfide mineralization consists of disseminated, semi-massive to massive banded galena, sphalerite, chalcopyrite, and green malachite up to 25%, usually associated with barite. The strongest sulfide mineralization occurs in dark volcanic andesite.

A total of six rock grab, and float samples were collected from the boulders zone. The highest assay results came from sample R-4 which returned 10% Cu, .16 oz/ton Au, and 99.7 g/ton silver. The highest gold value on the property also came from this zone represented by sample R-6 returned 1.6% Cu, and 5.6 g/ton gold.

### **Area Four**

Numerous massive sulfide boulders were located during a previous prospecting program on the western side of the property. A helicopter reconnaissance over the area of what is now known as the VMS4 claim has delineated an intense gossan zone, which can be accessed only by well-trained mountain climbers. The massive sulfide boulders may have originated from this gossan zone since boulders are found mainly accumulated on the south side of the creek valley on the glacier moraines.

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Appendix B	Chemical Results

### 1.0 INTRODUCTION

The writer conducted a mineral prospecting fieldwork on the VMS 1-4 Claim Group, Skeena Mining Division, British Columbia between June 21 to July 1st, 2000. The work was performed under the terms of the prospectors assistance program of the 2000/2001.

The main purpose of this report is to evaluate the precious and base metal potential of the property as well as the 2000 results of the geological, and geochemical prospecting program carried out on the property.

The report also describes regional geology and past activities in the area and outlines a budget proposed for next phase exploration program. The writer and a field assistant performed the fieldwork.

This report is based upon the geological and geochemical data collected during the year 2000 prospecting program, which was conducted on the Claim Group, and is also based upon Property history and previous work by other companies, a review of government assessment reports, regional geological maps, and claim data from the Vancouver Mining Office.

### 2.0 LOCATION, ACCESS & PHYSIOGRAPHY (Figure 1)

The VMS Claim Group is located approximately 55 kilometers southeast of Stewart, B.C., 155 kilometers northwest of Smithers, B.C. The property lies within the Skeena Mining Division on NTS map-sheet 103 P/11W.

A logging road off the Lavendar mainline comes within 10 kilometers of the property. A helicopter from Stewart is the only access to the Claim Group, approximately 25-30 minute trip, on a clear day.

The area of the VMS claims exhibits the characteristics of the typical glaciated physiography. These include wide U-shaped, drift-filled valleys flanked by steep rugged mountains. Elevations within the property range from 4800 feet at the north part of the claim group to 2400 feet in the valley at the south-central part of the property. Vegetation consists mainly of mixed grassland and scrub brush in the valleys, where at higher elevations vegetation grades into alpine. The highest parts of the property support only moss and lichen. Water for drilling is available from several creeks draining the north side of the property.

### 3.0 **PROPERTY STATUS** (Figure 2)

The subject property is comprised of four mineral claims totaling 18 units. The property was located in June  $10^{44}$ , 1999 and is owned by the writer Fayz Yacoub of Surrey B.C. The claims are currently in good standing until June 10, 2001.

# VMS Claim Group General Location Map



Saturday, October 07, 2000 6:33 PM

VMS Claim Group - Skeena Mining Division - Claim Map

![](_page_43_Figure_1.jpeg)

Figure 2

Pertinent claim data is as follows:

Claim Name	Number of Units	Record Number	Record Date	Expiry Date
VMS 1	9	369532	June 14.1999	June 10.2001
VMS 2	3	369533	June 14,1999	June 10,2001
VMS 3	4	369534	June 14, 1999	June 10,2001
VMS 4	3	369535	June 14 1999	Inne 10/2001

The total area of the property is 9 km2 (2,223 acres). The legal Corner Post and the witness Post of the VMS claims were located by the writer as indicated on the claim map at GPS: N55 37.647' W 129 17.086'.

### 4.0 AREA HISTORY

The Stewart area has been explored for precious and base metal deposits for the last one hundred years, and approximately 100 deposits within the Stewart Camp have been developed

The Stewart Camp Complex extends from Alice Arm to the Iskut River. Several major and small mines have been developed since 1900, including Silbak-Premier, The Snip, Johnny Mountain, Anyox, Alice Arm, Granduc, Scottie, Big Missourri, Porter-Idaho, and Maple Bay, and recently Eskay Creek, Red Mountain, Willoughby, and Sulphorets.

The number of deposits, and the economic value of each one make the Stewart Camp Area one of Canada's most viable mining camps.

Total recorded production from Stewart Camp area is approximately 1,900,000 ounces of Gold, 40,000,000 ounces of Silver, and 100,000,000 pounds Copper, Lead, and Zinc. Most of this production comes from Silbak-Premier mine, which operated from 1918 to1968, then reactivated in 1987 by Westmin Resources.

The discovery and subsequent development of the Granduc Copper mine, kept the Stewart Camp alive as an important mining district for mining explorations. More discoveries of important gold deposits within the Stewart Camp Area such as the Snip, and Eskay Creek mines, kept exploration activities at high levels. The exploration activities peaked in the year 1990.

The Eskay Creek deposit contains an estimated 4,000,000 ounces Gold, 45,000,000 ounces Silver, and 120,000,000 ounces Copper-Lead-Zinc. The unique high grade, stratiform massive sulfide is outstanding in terms of predictability of its geology and tenor.

The discovery of the promising intrusive-related gold deposit at Red Mountain, located approximately 16 kilometers east of Stewart, has reestablished the interest in the Stewart Camp area. In 1994, several juniors explored in the local area around the Red Mountain discovery including Prime Equities, Terv Corp, Teuton Resources Corp, Oracle Minerals, Camnor/Golden Giant and Aquaterre Mineral Development.

Trev

In 1994, Teuton Resources conducted an exploration program consisting of reconnaissance geochemical sampling, prospecting and trenching on the Konkin, King Kong, and Niknock showings. Trench results from the Konkin showing returned values as high as 36.27 opt Ag, 2.13 % Pb and 2.94% Zn across 5 meters, and results from the Niknock trench returned 34.94 opt Ag, 2.3% Pb and 2.02% Zn across 9 meters.

The two most prominent silver mines in the Kitsault area were the Dolly Varden and the Torbrit. The Torbrit operated during the 1920's and 1950's, according to Grove (1971) the mine produced the19 million ounces of Silver, in its last year of production, the Torbrit turned out 450 tons /day and maintained a 120 man camp. It was Canada's third largest silver mine after United Keno and the Sulivan mines

### 5.0 PROPERTY HISTORY

The VMS 1-4 claim group was recently staked to replace Lavender 1-4 and Lahte 7 claims with previous geological history in Stewart Camp.

Previous work on the property has consisted mostly of prospecting, reconnaissance mapping, soils, pan concentrate silts, and rock sampling.

- Hudson Bay Exploration carried out a prospecting, rock sampling and geological mapping program in the summer of 1981. The work program identified a number of rhyolitic massive sulfide float boulders located on the south side of Lahte Creek.
- In 1989, Dolly Varden Mineral Inc., conducted prospecting, and reconnaissance mapping, and pan concentrate silt sampling. Significant gold values were returned from outcrops and float boulders. A number of gossan zones were identified on the now VMS-2 claim, the gossan zones were not tested due to difficulties in crossing the Lahte creek. Gold values ranged up to 20240 ppb from quartz vein float.
- In 1994, the area of the VMS1-4 claim group were included as part of regional stream sediment geochem sampling program by the geological survey. Anomalous gold (226, and 229 ppb) were returned, these values were the highest in the map sheet area, and indicated a favorable environment for gold deposit possibly similar to that at the Red Mountain gold deposit.
- In 1995, Cyprus Canada Inc., and Rubicon Management Ltd. Staked the area based on the results of the regional geochem survey, and conducted prospecting, rock, silt, and soil sampling. Anomalous gold value of .32 g/t was returned from mineralized shear zone.
- Most recently (in the summer of 1997), an exploration work on the claims was carried out by Rubicon Minerals Corporation, rock sampling was targeted at evaluating a number of gossan zones on what is now known as the VMS 2 claim. Assays returned up to 6.26% Zn, and 414 g/t Ag and elevated metal values up to 202 ppm As, 145 ppm Hg, and 356ppm Sb. Numerous boulders of massive sulfides were located at the toe of the main glacier, and a barite-sphalerite-galena showing was located on the north side of the Lahte

Creek. Assays from grab samples returned values ranging from 1.65% - 11.6% Zn and up to 5.25 % Pb.

### 6.0 REGIONAL GEOLOGY (Figure 3)

The subject property lies within the Stewart Complex on the western margin of the intermountain belt of lower to middle Jurassic volcanic and sedimentary rocks belonging to the Hazelton and Stuhini Groups. The Stewart Complex is composed of a broad belt of island arc volcanics and related intrusions trending north for 150 kilometers from Anyox in the south to the Iskut River in the north (Grove, 1986). The volcanics are part of Hazelton Group and are Jurassic in age. The general geology of the area is shown on open file map 1986/2, British Columbia, Ministry of Energy, Mines and Petroleum Resources by D.J.Alldrick, G.L.Dawson, J.A.Bosher, and I.C.L. Webster, 1986.

The Stewart Complex includes a thick sequence of Late Triassic to Middle Jurassic volcanic, sedimentary, and metamorphic rocks cut by granitic to syenitic suite of lower Jurassic through Tertiary plutons, which together form part of the Coast Plutonic Complex.

Country rocks in the Stewart Camp area comprise mainly of Hazelton Group Strata that includes the Lower Jurassic Unuk River Formation, and the Middle Jurassic the Betty Creek Formation. This sequence is unconformably overlain by Salmon River Formation, and the Nass River Formation (Grove, 1971, 1986).

The Stewart Complex hosts several mines, the rocks are highly prospective with numerous mineralized showings and prospects, including Royal Oak's Red Mountain deposit, Homestake's Eskay Creek deposit, Snip, Willoughby, Newhawk's Sulphurets, Teuton's Clone deposit, and the old Dolly Varden and Torbrit Mines.

Over 700 mineral deposits and showings have been discovered in a large variety of rocks and structures in the Stewart Complex. The Silback-premier represents an epithermal gold-silver base metal deposit localized along complex, steep fracture systems, in Lower Jurassic volcaniclastics unconformably overlain by shallow dipping Middle Jurassic Salmon River Formation sedimentary rocks.

![](_page_47_Figure_0.jpeg)

## GEOLOGY OF THE KITSAULT RIVER AREA NTS 103P

Geology by D. J. Alldrick, G. L. Dawson, J. A. Bosher, and I.C.L. Webster

Compilation and drafting by G. L. Dawson

### LEGEND

#### INTRUSIVE ROCKS

TERTIARY EOCENE AND YOUNGER

DYKES: diorite, microdiorite (a); lamprophyre (b); diorite, sill a b -107 phase (c)

EARLY TO MIDDLE EOCENE

ab ç 9

> alb 8

c

monzonite porphyry (b); sericite quartz monzonite porphyry (c) COAST RANGE BATHOLITH: quartz monzonite (a); granodiorite (b)

ALICE ARM INTRUSIONS: quartz monzonite (a); biotite quartz

VOLCANIC AND SEDIMENTARY ROCKS

### QUATERNARY PLEISTOCENE

7

MAFIC VOLCANICS: olivine basalt flows

### JURASSIC

MIDDLE TO UPPER JURASSIC

UPPER SEDIMENTARY UNIT: basal fossiliferous wacke (a); siltstone, ab - 6 -c 1 d shale, and minor sandstone (b); intraformational conglomerate (c); limestone (d)

### LOWER TO MIDDLE JURASSIC

a[†]b _5_ c

EPICLASTIC AND FELSIC VOLCANIC UNIT: maroon and green volcanic conglomerate, breccia, and minor sandstone (a); black siltstone, argillite, wacke, and limestone (b); greenish grey dacitic pyroclastic rocks and feldspar porphyritic flows (c)

![](_page_48_Picture_20.jpeg)

INTERMEDIATE VOLCANIC UNIT: green and minor maroon andesite pyroclastic rocks (a); feldspar ± hornblende andesite porphyry (b); black siltstone (c); maroon siltstone, sandstone, and conglomerate (d); limestone and fossiliferous limestone (e); chert (f)

# 7.0 THE 2000 PROSPECTING FIELDWORK PROGRAM

### 7.1 Scope & Purpose

On June 2nd, and from June 21st to July 1st2000, the writer and a field assistant carried out a prospecting and fieldwork program of geological mapping, rock and stream sediment sampling. The purpose of this program was to:

- a) Prospect the property with geological and geochemical method in order to define new targets for follow-up exploration work;
- b) To evaluate and extend the known showings; and
- c) To locate and systematically sample the mineralized zones on the property.

### 7.2 Methods & Procedures

Prospecting and geological mapping was performed at scale of 1:5000 over selective parts of the property, control for mapping was established using compass, hip-chain, topographic map, GPS, and one kilometer of base line.

Stream sediment samples were collected from the active parts of selective creeks draining the northern side of the property. Grain size varied from fine to very fine-grained silt. Altogether, 11 stream sediment samples were collected and sent to ACME Labs for gold and multi-element ICP (see figure #10 for sample location and appendix B for results).

Rock sampling was performed over selective areas of interest and previous showings within the property. A total of twenty rock (chip, and float) samples were collected during the prospecting program. All samples were sent to ACME Lab for gold and multi element ICP, (see figure #5 for rock sample locations, and appendix B for analytical results).

# 8.0 RESULTS8.1 PROPERTY GEOLOGY

The area of the VMS 1-4 claims is predominantly underlain by lower to middle Jurassic volcanic and sedimentary rocks of the Hazelton and Stuhini Groups. The property geology has been divided into two rock units, intermediate volcanic, composed of green andesite pyroclastic feldspar, and andesite porphyry. This unit is exposed in the far western part of the property (VMS 4 claim). The majority of the property is underlain by maroon and green volcanic conglomerate, volcanic breccia, minor sandstone and rhyolite beds, this unit exists in the eastern side of the property (VMS 1, 2, and 3 claims). Both units are cut by hornblende-feldspar porphyry Tertiary dykes up to 6 meters in width.

Significantly, several gossans were located within the felsic maroon volcanic unit of the Jurassic Hazelton rocks. These rocks are overlain by middle to upper Jurassic sedimentary unit consisting of basal fossiliferous wacke, siltstones and argillites occupies the central part of VMS-3 claim.

### 8.2 ALTERATION

Intensive propylitic to argillic alteration is pervasive in all major rock units within the area of the VMS claim group in a form of several gossan zones, where rocks are intensively altered, bleached and silicified.

Alteration in the property is present as:

- a) Extensive carbonate, chlorite and quartz replacement, carbonate and local quartz veining are common in altered maroon volcanic outcrops occurs in the eastern side of the property and locally at the contact between the felsic maroon volcanics and the argillite, shale, and siltstone sedimentary unit.
- b) Tens of meters of hematitic-limonitic, silicified, altered gossan zones containing disseminated sulfides (mainly pyrite) within both the Hazelton group volcanics as well as the argillite sedimentary unit.
- c) Iron oxide zones within the sediments, located at the contact with the maroon volcanics (on the VMS-3 claim). The zones are comprised of hematite and limonite, and are slightly to moderately magnetic. The zones are gossanous, rusty, light to dark brown on weathering surfaces, massive to unconsolidated, and contain sulfide proportions varying from 1-5% disseminated pyrite-pyrrhotite and minor galena. The gossan zones range from 50-100 meters in width, and up to one kilometer in length. They tend to grade sharply into relatively unaltered volcanics near the alteration boundary at the far north. Local shear zones and quartz-carbonate veins trending N-S are related to the intensely altered parts of the zone.

Silicification, brecciation and quartz veining are present as mineralized brecciated quartzcarbonate veins, vein lets associated with the local N-S structure within the gossan zones.

All alteration zones located during 2000 prospecting program are not high-grade precious or base metal content, but they have anomalous amounts of Au, Ag, As, and Cd, especially in the vicinity of structural features such as faults or shear zones.

# The Main gossan zone is interpreted as the surface expression of possible epithermal gold mineralization.

### 8.3 STRUCTURE

The most prominent structural features in the area of the VMS 1-4 claims are north-northwest trending faults and shear zones along a set of creeks draining the north part of the property. These structural elements provide the dominant structural control and most of the mineralization zones on the property.

The north-northwesterly oriented shear zones and faults are possibly part of the regional structure. It persists for one kilometer in the central part of VMS-3 and VMS-1 claims. The most significant alteration zone in the property area is exposed within a fault zone along creek running south-southeast parallel to the geological contact between the maroon-green volcanics and the argillite in the central part of VMS-3. The zone is known as the main gossan zone.

Mineralization and quartz veining on the property is associated with the north-northwest structural elements.

Foliation on the property is non-existent to weak in the volcanics of the Hazelton group, and increase in intensity towards the north of the property.

### 8.4 MINERALIZATION AND ROCK GEOCHEMISTRY (Figure # 4 & 5)

Previous and recent mineral exploration on the property has outlined a favorable geological environment for two different types of deposits:

- 1- Gold deposit similar to the Red Mountain.
- 2- Strata bound massive sulfide deposit

During the recent 2000 prospecting program, the writer observed that mineralization on the property is specifically related to structural elements within the gossan zones. The strongest mineralization occurs in intensely fractured, contact zone accompanied by silicification, and intense pyritization in both the volcanic and the sedimentary rock units of the Hazelton group.

Pyrite is the most common sulfide mineral present, and is usually associated with several altered gossan zones on the property. Weathering of pyrite results in light brown iron oxides. Quartz-carbonate veins and pods, appear to be associated with areas of advanced argillic alteration within the gossan zones.

# Four promising mineralized areas were located on the VMS 1-4 claims, three of which were sampled during this program.

### 8.4.1 THE MAIN GOSSAN ZONE (Figure # 4 & 5)

This zone is located approximately at the center of theVMS-3 claim on the north side of Lahte Creek. A north trending gossan zone exposed on the west bank of a creek flowing south, draining the north part of the VMS-3 claim.

The main gossan zone is considered to be the most persistent alteration zone on the property, and represents a fault contact between the green maroon volcanic dacite and sedimentary argillite. The gossan zone is exposed for approximately one kilometer with an average width of 100 meters. Rocks are light brown to reddish on weathering surfaces. Argillic to sericitic alteration is common within the zone particularly at the volcanic-sedimentary contact. The gossan zone displays strong silicification and pyritization associated with advanced argillic alteration. Sulfide mineralization consists of fine-grained pyrite, minor pyrrhotite, and galena. The most intense mineralization and alteration is located near the top of the zone at GPS N55 38.320'-W129 16.728', at 3636 feet elevation, where a bleached, strongly altered argillite is exposed 150 meters long and 25 meters wide, bedding is 350 degrees, dipping 48-62 degrees. Two rock samples were collected from this locality. Rock sample R-19 was collected across 20 meters of silicified, altered gossanous argillite, returned 10.4g/ton silver, and 784 ppm Ba, The best result came from sample R-18 which returned 1446 ppm lead, 456 ppm Zinc, and 29.9g/ton silver, over 3 meters. Approximately 350 meters to the south, a quartz-carbonate vein system was located at GPS N55 38.080'- W129 16,658', at an elevation of 2732 feet. The vein system ranges between 20 centimeters to 2 meters in width, strikes 358 degrees/90 degrees, and

![](_page_52_Picture_0.jpeg)

THE MAIN GOSSAN ZONE (Altered sediments and volcanics along contact zone)

![](_page_52_Picture_2.jpeg)

THE MAIN GOSSAN ZONE (Sample site R-19)

Photo #1

Photo # 2

-13-

followed for 40 meters. A large part of the vein is covered by a mudslide. The vein system is exposed in a small creek bed, hosted by fine-grained intermediate volcanic rock. The wall rock is strongly altered (argillic), and disseminated with 5% fine-grained pyrite. Chip sample R-22, collected across 10 meters of the vein and the wall rock, failed to produce anomalous results. All rock samples collected from the gossan zone returned anomalous values in arsenic.

### 8.4.2 THE WESTERN GOSSAN ZONE (Figure # 4 & 5)

Intensive alteration zone represented by brown rusty volcanic dacite rocks, located approximately 800 meters southwest of the main gossan zone at 2439' elevation, approximately 50 meters north of the Lahte creek, at the southeast corner of theVMS-1 claim, GPS N55 37.649'-W129 17.583'. The zone is characterized by intensive alteration, and silicification. Mineralization consist of 5-6% fine-grained pyrite, very fine-grained galena, and trace of chalcopyrite in altered, rusty volcanic outcrop. The zone can be traced for twenty meters with an average width of 3 meters. Small quartz pod (.3mx1m) trending 185 degrees is exposed in the center of the zone. Chip sample R7 collected across 3 meters of the mineralized zone, returned 1.39%pb, 4.51%Zn, 13.2g/ton silver, and 665.3 g/ton Cadmium, which considered the highest cadmium value on the property.

### 8.4.3 THE BOULDERS ZONE

Mineralized, angular boulders of volcanic tuff were located on the north side of the Lahte creek, the boulders are scattered over an area of 75 meters long by 50 meters wide, centered at GPS N55 37.553`-W129 17.701`, Rocks are dark gray to greenish volcanic tuff, ranging in size from 1 cubic foot to 20x30 feet. Mineralization consists of disseminated, semi-massive to massive banded galena, sphalerite, chalcopyrite, and green malachite.

~>99,999 Ppm

A total of 6 rock grab, and float samples were collected from the boulders zone. The highest assay results came from sample R-4 which returned 10% Cu, .158 oz/ton Au, and 99.7 g/ton silver. The highest gold value on the property came from this zone represented by sample R-6 which returned 1.6% Cu, and .165 oz/t gold.

The topography of the area around the boulders zone strongly suggests that the best area to prospect for the source rock would be north to northwest from the boulders location.

### 8.4.4 THE FLOAT ZONE

Numerous massive sulfide boulders were located on the western side of the property during previous prospecting program. The mineralized boulders were found just below the main glacie: and along the flats southeast of the main creek below the ice field. A helicopter reconnaissance during the 1997 fieldwork over the south side of the main ice field has delineated an intense gossan zone. Trained mountain climbers can only access the area. The massive sulfide boulders may originated from this gossan zone since the boulders are found mainly accumulated on the south side of the creek valley on the glacier moraines.

} as peochem Sie. 45,100

![](_page_54_Figure_0.jpeg)

VMS CLAIM GROUP SKEENA MINING DIVISION TARGET AREAS LOCATION MAP NTS: 103P/11W

Figure 4

VMS Claim Group - Skeena Mining Division - Rock Sample Locations Map

![](_page_55_Figure_1.jpeg)

### 8.5 STREAM SEDIMENTS GEOCHEMISTRY (Figure # 6, 7, 8, 9, & 10)

The VMS claim group was staked based on anomalous gold lead and zinc in stream samples collected during the regional geochemical survey released in June 1995(see figures 6,7,8, and 9)

A stream sediment geochemical sampling program was carried out by the writer on the VMS1-4 claims during the 2000 prospecting program, and a total of 11 samples were collected from creeks and tributaries within the area of the claim group.

Results were compared with the RGS 43 by the British Columbia Geological survey. Samples greater than the 95ⁱⁱⁱ percentile were considered anomalous. Anomalous thresholds are outlined in the following table.

Element	Anomalous Values
Gold	Greater than 29 ppb
Silver	Greater than 0.5 ppm
Lead	Greater than 23 ppm
Zine	Greater than 221 ppm

Gold values range from 4.4 to 169.5 ppb. Four samples are considered anomalous for gold and having greater than 29 ppb.

The highest gold value in stream sediments is 169ppb, came from sample SS-2 collected from small tributary creek draining the area of the main gossan zone, the sample is located 435 meters east of the camp (Figure # 10), approximately 200 meters south of the main gossan zone on theVMS-3 claim just north of the Lahte creek at GPS N55 37.891-W129 16.287. The second highest gold value came from sample SS-7 collected from creek flowing south, draining the northern part of VMS-1, returned anomalous gold value of 62.3 ppb. Sample SS-6 was collected from small tributary creek draining the north part of VMS-1, returned 34.1 ppb gold, and sample SS-4 was collected from creek flowing southeast, draining the area of VMS-4 claim, returned 34.9 ppb gold.

More than 60% of all samples are anomalous in silver, seven samples returned silver values above 0.5 ppm, five of which contain more than one ppm silver.

The highest silver value in stream sediments is 2.4 ppm, came from sample SS-3 draining the area northwest of the massive sulfide boulders.

Nine samples were anomalous in lead, and six samples were anomalous in zinc. The highest lead and zinc values came from samples SS-3, and SS-8 draining areas located northwest of the massive sulfide boulders, and the main gossan zone respectively.

VMS Claim Group - Skeena Mining Division - RGS Gold Anomaly

![](_page_57_Figure_1.jpeg)

Figure 6

VMS Claim Group - Skeena Mining¹⁸ Division - RGS Copper Anomaly

![](_page_58_Figure_1.jpeg)

Figure 7

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VMS Claim Group - Skeena Mining Division - RGS-Lead Anomaly

![](_page_59_Figure_1.jpeg)

Figure 8

VMS Claim Group - Skeena Mining Division - RGS-Zinc Anomaly

![](_page_60_Figure_1.jpeg)

Figure 9

VMS Claim Group - Skeena Mining Division - Streamsediment Location Map

![](_page_61_Figure_1.jpeg)

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### 9.0 CONCLUSIONS

1

The VMS claim group is situated in an area that is well known for hosting precious and base metal deposits. The Stewart Camp has been explored for the last one hundred years and approximately 100 deposits have been developed including Silbak-Premier, the Snip, Johnny Mountain, anyox, Alice Arm, Granduc, Scottie, Big Missourri, and recently the Eskay Creek, Red Mountain. The number of deposits, and the economic value of each one make Stewart Camp Area one of Canada's most viable mining camps.

The VMS claim group is underlain by altered, faulted volcanic rocks of early Jurassic Hazelton Group. Mineralization and alteration on the claim group is localized along altered gossan zones of lower Jurassic volcanics in contact with shallow dipping Middle to upper Jurassic sedimentary argillite. This geological setting is a favorable environment for hosting economic mineralization.

Similarities may exist between the VMS claim group and the Silback-Premier in mineralization, alteration and geological environment.

The 2000 prospecting program has outlined four target areas characterized by strong geochemical signature that have been located on the claim group.

Field programs to date have covered only 25% of the property. Good potential exists for locating more significant mineralization on the remainder of the claim group.

For these reasons further exploration work is strongly recommended.

### **10.0 RECOMMENDATIONS**

- Perform follow-up work on the main gossan zone located at the center of VMS-3 claim. The work should consist of detailed geological mapping and rock sampling. More attention should be paid to map the alteration zone and the structural setting of the gossan area to better understand its mode of occurrence, and to determine the viability of the zone to be considered as a drill target.
- 2) Perform follow-up work on the western gossan zone located on the VMS-1. Detailed mapping and rock sampling should be performed to prospect the extension of the zone to the north.
- 3) Helicopter reconnaissance over the entire area south of the main ice field at the northwest corner of the VMS-1 to locate the source of the massive sulfide boulders, followed by prospecting and rock sampling. Professional mountain climbers are a must.
- 4) Geologically map, prospect, and rock sample the rest of the property.

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### **CERTIFICATE OF QUALIFICATIONS**

I, FAYZ F. YACOUB, of 6498-128B Street, Surrey, British Columbia, V3W 9P4, do hereby declare that:

- 1) I am a graduate in: Geology and Chemistry from Assuit University, Egypt (B.Sc., 1967), and Mining Exploration Geology of the International Institute for Aerial Survey and Earth Sciences (I.T.C.), Holland (Diploma 1978):
- 2) I am a fellow in good standing with the Geological Association of Canada;
- 3) I am a professional geologist and a member of the Association of the professional Engineers and Geoscientists of British Columbia.
- 4) I have actively pursued my career as a geologist for the past twenty one years;
- 5) The information, opinion, and recommendations in this report is based upon fieldwork carried out by myself, and on published literature. I was present on the subject property on June 2nd and from June 21st –July 1st /2000.
- 6) I am the recorded owner and have 100% interest in the VMS Claim Group.

![](_page_65_Picture_8.jpeg)

Fayz Yacoub, P. Geo., F.G.A.C.

### **APPENDIX A**

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### **ROCK SAMPLE DESCRIPTIONS**

- **R-1** Angular, light to dark gray mineralized volcanic boulder 3x4 feet in size, 5% disseminated pyrite, minor chalcopyrite and trace of galena.
- **R-2** Float, angular boulders of dark gray volcanic tuff, 2-3% fine-grained pyrite associated with quartz- carbonate fragments.
- **R-3** Float, angular local volcanic boulder, narrow banded quartz-carbonate vein lets disseminated with fine-grained pyrite, chalcopyrite, and Mn oxide ( the boulders zone).
- R-4 Float volcanic, more than 40% sulfides consisting of galena, sphalerite, malachite staining, and chalcopyrite in volcanic tuff. Sample located at GPS: N 55 37.553` W 129 17.701`(the boulders zone).
- **R-5** Float sample collected from angular volcanic boulder, disseminated with 5-10% finegrained pyrite, pyrrhotite, and Mn oxide.
- R-6 Mineralized volcanic tuff (5x8 meters in sub-crop, or possible large float). Mineralization consists of 6-8% chalcopyrite, 2% malachite, 1% galena. Chip sample over one meter collected at GPS: N 55 37.534` W 129 17.742`from the boulders zone.
- R-7 Chip sample across three meters of rusty altered (argillic) dark brown volcanic andesite. Mineralization consists of 5-7% fine-grained pyrite, galena, and sphalerite. Sample taken from the western gossan zone at GPS: N 55 37.649' W 129 17.583'.
- **R-8** Float sample taken from dacitic to andecitic volcanic float just below the main gossan zone, Mineralization consists of fine-grained pyrite, and minor galena.
- **R-9** Chip sample across 10 meters of strongly altered (argillic) dacitic volcanic outcrop dominated by moderate to strong silicification, and earthy hematite. Sample collected from the main gossan zone area.

- **R-10** Chip over 4 meters of altered (argillic) dacitic volcanic outcrop with fine-grained pyrite dissemination. Sample collected from the main gossan zone.
- **R-12** Chip over three meters of the intensely altered, rocks of the main gossan zone, strong pyrite alteration (20-30% fine-grained pyrite in light gray to green friable volcanic dacite to andesite).
- **R-14** Local, angular quartz float, cavities filled with dark brown hematite, about 10% MnO2. Sample located just below the main gossan zone.
- **R-16** Light to dark brown, altered (propylitic) volcanic rocks, with banded to disseminated, fine-grained pyrite. Chip sample across two meters, collected from the main gossan zone.
- **R-17** Chip over three meters of altered outcrop, disseminated with 5-8% pyrite, rusty brown weathered surfaces. Sample similar to R-16.
- **R-18** Chip across three meters of altered (argillic) sedimentary argillite in contact with the Hazelton group volcanics. Mineralization consists of 10-12% pyrite, and minor fine-grained galena. Sample collected at the top of the main gossan zone at GPS; N 55 37.827 W 129 16.683'.
- R-19 Chip sample across 20 meters of the altered rocks of the main gossan zone. Sample located 30 meters east of R-18. Altered argillite, disseminated with pyrite and fine-grained galena. Sample taken at the top of the main gossan zone GPS: N 55 38.320' W 129 16.728'.
- R-20 Chip across 8 meters of altered, sheared sedimentary argillite, located at 60 meters below (south) of R-19 at GPS: 55 38.323' W 129 16.742', bedding 350, dipping 48-62 degrees east, from the main gossan zone.
- **R-21** Chip across two meters of mineralized, angular boulder of volcanic dacite hosting a set of quartz barite veins, and small pods of fine-grained pyrite, dark brown weathered surfaces.
- R-22 Quartz-barite vein system exposed in a small creek bed at the south end of the main gossan zone, GPS: N 55 38.080' W 129 16.658'. A system of quartz barite veins range from 10 cm to two meters in thickness. The system strikes 358 degrees, and vertical, hosted by altered (argillic) volcanic tuff disseminated with 10-20% fine-grained pyrite. Chip sample across 10 meters of the vein and the host Volcanic rocks.

### **APPENDIX B**

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### ANALYTICAL RESULTS

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#### ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)

852 E, HASTINGS ST. VANCOUVER BC V6A 1R6

### ANTAT VOTO OFDUTETCATE

PHONE (604) 253-3158 FAX (604) 253-1716

Τī

.01

.02

%

B AL

naa

Na

%

<3 1.32 .01

<3 1.69 .01 .10

3 .92 <.01 .02

<3 3.16 .01 .06

Data

.01 <3 1.35 .01 .08

%

κ u

.08

% ppm

47

19

22

27

29

;

Ba

ppm

.98 1851 .01

240

39 .17

Mg

%

.77 675

.77 2388

Cr

ndd

5

5

2

5 .45

4 1.83

La

8

9

9

4

10

nqq

<b>AA</b>								649	GEC 8 - <u>Y</u> a 8 - 12	CHE 1 <u>COL</u> 58 St	SMLC <u>1b,</u> ., Su	SAL <u>Fay</u> rrey	ANA 7 <u>2</u> 30 V31	F1] 4 994	te #	A0 nitte	023 d by:	fCA 61 Fayz	Yacol	dı
SAMPLE#	Mo	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U mqq	Au ppm	7h ppm	Sr ppm	Cd ppm	Sb ppm	ві ppm	V ppm	Ca %	P %
p. 4	22	18//	250	551	27	3	4	2856	9.08	13	<8	<2	<2	354	3.3	<3	8	62	7.14	.036
R-1	22	1044	47	171	2 7	7	Ä	3547	6 89	6	<8	<2	<2	635	1.2	3	- 4	44	9.89	-045
R-2	1 13	00	20	171	<b>``</b>	,		7410	4 07	ŏ	-8	-2	<2	542	1.2	<3	10	43	10.00	.055
R-3	8	1441	85	218		4	<i>°</i>	3010	6.05	1	-8	-2	-2	12	11.2	<3	<3	17	.11	<.001
R-4	308	99999	47	90	99.7	2	2	430	0.40	4	-0	-2	~	172	1 1	4	8	38	5 15	046
R-5	13	2645	65	422	1.1	5	8	3435	9.21	11	<0	12	~4	116		-	Ŭ	20	2.12	
	1 .	4 / 7 0 6	~~	05	,		1	1803	7 08	30	ج۶	8	~	87	.3	6	40	40	3.79	.059
R-6	4	10525	23	72			- , ,	7444	E 07	513	-8	-2	<2	128	665.3	8	6	18	2.72	.082
R-7	12	181	13948	45101	15.2	11	44	2004	2.0/	213	20	~2	- 25	12	11 0	<3	Ā	6	.25	.118
R-8	1	50	425	933	2.1	2	10	400	2.30	20	0	-2	~2	70	0.2	3	3	17	1.05	.059
R-9	4	98	714	1675	2.4	4	7	1135	9.15	12	<8	< <u>2</u>	~~~	30	1.6	45		1/	47	108
R-10	29	130	274	3872	7.6	3	11	1741	9.63	225	<8	<2	<2	19	17-1	15	1	14	.03	. 100
												_	_	-				~	~ ~ /	000

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R-6 R-7 R-8 R-9 R-10	4 12 1 4 29	16325 181 50 98 130	23 13948 425 714 274	95 45101 933 1675 3872	.4 13.2 2.1 2.4 7.6	4 11 2 4 3	4 1803 44 2664 10 468 7 7735 11 1741	7.08 5.87 2.56 9.15 9.63	30 513 58 31 225	<8 <8 <8 <8 <8	8 2 2 2 2 2 2 2 2 2 2 2 2 2	~2 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	87 128 12 30 19	.3 665.3 11.0 9.2 17.1	6 8 <3 3 15	40 6 4 3 7	40 18 6 17 14	3.79.059 2.72.082 .25.118 1.05.059 .63.108	6 4 2 2	12 9 3 12 3	.58 .50 .09 .97 .15	131 .02 14 <.01 70 <.01 62 <.01 7 <.01	<3 } 4 1 13 <3 1 <3	.36 .00 .65 .78 .44	.01 .02 .02 .01 .01	.13 .17 .31 .06 .26	32 <2 <2 <2 <2
R-12 R-14 R-16 R-17 R-18	4 3 1 3	110 11 11 66 21	363 48 131 218 1446	139 52 197 368 456	6.2 .3 .8 .9 29.9	7 4 2 3 2	10 167 1 2752 6 439 10 1203 6 1284	15.75 1.18 4.65 6.77 5.11	83 4 341 126 107	<8 <8 <8 <8 <8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	5 14 15 68 90	.4 .4 2.2 3.5	6 <3 <3 4 8	<3 <3 4 5 4	9 2 9 13 20	.06 .009 .14 .017 .55 .055 1.02 .118 1.86 .072	<1 2 5 10 5	9 19 5 3 5	.02 .02 .07 .19 .21	3 <.01 444 <.01 25 <.01 15 <.01 26 <.01	3 6 7 5 7	.30 .13 .42 .44 .31	.01 .01 .01 .01 .01	.16 .06 .25 .35 .24	4 9 7 2 2
RE R-18 R-19 R-20 R-21 R-22	3 4 3 3 1	20 26 65 17 21	1409 236 73 57 49	436 557 747 91 346	28.6 10.4 1.7 .7 <.3	2 4 5 2	6 1245 4 1651 26 6291 4 2902 11 3220	4.98 3.26 9.67 4.57 4.40	105 37 126 133 12	<8 <8 <8 <8 <8	~~~~~	~~~~~	88 269 6 296 113	3.4 3.5 3.5 .8 .9	7 8 <3 <3 <3	5 3 4 3 3	18 6 32 3 17	1.81 .072 2.18 .076 .05 .042 2.39 .104 4.08 .089	5 7 5 3 5	7 11 6 9 6	.21 .02 .09 .43 .70	26 <.01 784 <.01 108 <.01 22 <.01 234 <.01	5 9 3 8 3	.31 .29 .45 .34 .42	.01 .01 .01 .02 .02	.23 .18 .19 .24 .16	<2 4 <2 4 2
R-23 Standard C3 Standard G-2	2 25 1	21 61 _4	128 37 4	353 177 48	<.3 5.2 <.3	5 36 8	12 3376 12 775 4 550	4.49 3.33 2.07	11 59 <2	<8 17 <8	<2 3 <2	<2 19 4	135 28 73	.6 23.7 <.2	<3 11 <3	<3 24 3	11 76 37	2.45 .038 .56 .086 .67 .096	3 17 8	16 161 74	.27 .61 .63	257 <.01 150 .09 225 .13	<3 27 1 11	.39 .77 .98	.01 .04 .08	.08 .16 .46	6 16 2

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES. UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. - SAMPLE TYPE: ROCK

DATE RECEIVED:	JUL 14 2000	DATE REPORT MAILED: July	26/00	SIGNED BY	D. TOYE, C.LEONG,	J. WANG; CERTIFIED B.C. ASSAYERS
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ACHE ANA (ISO	900 900	САЦ 2 ас	CIT 6	dite	OKT)	55 L 5.)	TD:		852	GEO(	HAS CHE	MIC	AL .	ANA	LYS	IS	cer'	rif	ICA	TE		1.1101								A	A
ÊÊ									\$498	<u>Ya</u> 1284	cou i st.	<u>b,</u> ) , suri	Pay rey Bi	z 7 v3w	Fil 994	e # suba	A0 nicte	023 1 by:	62 Fayz	Yaco	ob										
SAMPLE#	Mo pom	Cu ppt1	Pb ppm	Zn ppm	Ag ppn	Ni ppra	o3 rsqq	Nn ppia	Fe X	As ppm	U ppm	Au pp#	Th ppm	Sr ppm	Cd ppm	sb ppm	Bi ppm	V mojej	Ca X	P X	La ppm	Cr ppm	Mg %	8a ppm	Ti X	B ppm	AL X	Na X	K %	y ppm	Au* ppb
cc_1		49	130	432	1.3	5	10	1980	3.63	30	<8	<2	<2	50	2.6	7	<3	26	.43	.174	7	6	.37	326	.01	3	.69	<.01	.03	<2	12.2
55-1	1	77	30	165	.5	6	13	1508	3.62	15	<8	<2	<2	56	.7	3	<3	61	1.44	. 193	10	9	.79	317	.02	<3	1.05	.01	-04	3	109.5
55-2	2	79	196	819	2.4	, 9	15	4265	4.55	51	<8	<2	<2	64	5.1	11	3	26	.41	-186	8	7	.30	627	.01	<3	-81	<.01	.05	~2	7.0
55-5	1	66	15	92	<.3	4	9	1251	2.69	7	<8	<2	<2	53	.2	<3	<3	42	1.60	.160	10	6	.72	335	.03	3	.94	.01	.04	~2	24.7
55-5	1	58	20	94	<.3	5	10	1194	3.02	9	<8	<2	2	57	<.2	<3	<3	47	1.80	.180	10	- 7	.67	268	-02	4	.92	.01	.05	×2	20.1
																_					<u>,</u>					.7	4 71	01	05	~2	7/ 1
6-22	1	80	13	80	<.3	9	14	1112	3.28	14	<8	<2	<2	61	<.2	3	<3	63	2.26	. 154	8	12	1.09	198	.02	$\sim$	1.31	.01	-0/	2	62 3
55-7	1	75	35	155	<.3	9	11	1355	3.09	15	-8	<2	<2	37	.6	<3	<3	43	.44	- 156	2	2	.05	203	.02	-7	- 97 P1	< 01	04	.2	16 0
55-8	2	78	186	945	2.0	11	15	4197	4.40	53	<8	<2	<2	63	6.0	11	<3	- 28	.40	.175		4		200	- 01	2	-01	- 01	-04	~2	7 0
55-9	2	55	110	657	1.4	4	11	6086	2.81	22	<8	<2	<2	259	5.6	4	3	13	1.69	. 190	ò	2	.44	431	×.UI 2 01	2	در. 51	2 01	.05	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	80
RE SS-9	2	54	103	648	1.3	4	11	5921	2.79	20	<8	<2	<2	248	5.3	4	<3	13	1.62	- 185	ø	2		421	<.UI	5	. 21	1.01	.05	~	0.7
																	-				,			FFF	4 04	7	14	01	0/	2	71
SS-10	2	47	32	149	<.3	6	11	3579	2.05	64	<8	<2	_` <b>≺2</b>	358	1.1	3	<3	- 29	1.00	-208	°,	2	. 10	222	×.U1 01	2	.40	< 01	05	-2	4.4
ss-11	3	57	88	369	.9	17	11	3151	2.92	30	<8	<2	<2	117	1.9	5	<3	28	.59	-154	15	150	. ) f E a	467	,01		1 43	2.01	15	10	192.8
STANDARD DS2	14	127	32	156	<.3	35	11	813	3.02	58	20	<2	4	27	10.1	12			.51	-089	15	150	.50	140	.07		1.05	.04			17210
	,	GROUP UPPER - SAM Sampl	P 1D LIM IPLE es D	- 0.50 ITS - TYPE: eginni	) GM S AG, / SILT ing /F	AMPLE IU, HG A RE' ar	LEA , W U* B e Re	CHED W = 100 Y ACID runs a	PPN; LEAC	S ML 2 Mo, C Ched, <u>Re'</u> a	2-2-2 20, CD ANALY are Re	HCL-H ), SB, ZE BY	INO3-1 BI, ICP- Rerur	120 A1 TH, U MS. (	[95] ]& B [10] gi	)EG. ( = 2,( n)	C FOR	ONE I PM; CI	HOUR, U, PB	DILU , ZN,	TED TO NI, M	) 10 ) (N. A.	4L, AI S, V,	HALYS LA,	ED BY CR = 1	1CP-1	ES. O ppm.				
DATE REC	EIVE	D:	JUL	14 - 20	00	DATE	RE	PORT	MA	LED	: G	nli	1 24	1/00	)	IGNI	SD B	¥.Ç.	· h	· · · ·	. p.	TOYE	, C.L	EDNG,	אר "ר	ANG;	CERT I	FIED I	3.C. /	ASSAYE	ERS

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All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Data____FA

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TOTAL PACE 003

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(ISO 9002 Accredited Co.)	ASSAY CERT	TFICATE A A
<b>11</b> 6498	<u>Yacoub, Fayz</u> Fil - 1288 st., Surrey BC V3W 9P	e # A002361R 4 Submitted by: Fayz Yacoub
	SAMPLE#	Au** Au** oz/t oz/t
	R-4 R-6 R-7 R-16 R-17	.158 .056 .165 - .002 - <.001 - <.001 -
	R-18 R-22 R-23 RE R-23 STANDARD AU-1	<.001 - <.001 - <.001 - <.001 - <.001 - .106 -
GROUP 6 ~ PREC - SAMPLE TYPE: Samples beging NUMB DECETIVED, SED 15 2000 DATE PEDOPT MA	CIOUS METALS BY FIRE ASSAY FR ROCK PULP hing 'RE' are Reruns and 'RRE	ROM 1 A.T. SAMPLE, ANALYSIS BY ICP-ES.
ATE RECEIVED: SEP 17 2000 DAIS REFORT DA.	1111. Sept 25/00	SIGNED BY
ATE RECEIVED : SEP 17 2000 DAIS REFORT DA.	1150. Sept 25/00	SIGNED BY S. TRD. TOTE, C.LEONG, J. WANG, CERTIFIED B.C. ASSATERS
ATE RECEIVED : SEP 17 2000 DATE REPORT MR.	LISU Sept 25/00	SIGNED BY
ATE RECEIVED : SEP 15 2000 DATE REPORT MR.	LISU. Sept 25/00	SIGNED BY
ATE RECEIVED: SEP 15 2000 DATE REPORT MR.	- <u>Laber</u> 25/00	SIGNED BY C. TN

Data____ FA