ARIS SUMMARY SHEET

District Geologist, Victoria (OBSOLETE) Off Confidential: 92.08.12

ASSESSMENT REPORT 21633 MINING DIVISION: New Westminster

PROPERTY: Sumas Soda Feldspar
LOCATION: LAT 49 07 00 LONG 122 10 00
UTM 10 5440540 560811
NTS 092G01E
CLAIM(S): Samus,Scrum,Nick,Bill,Beth
OPERATOR(S): Quality Industrial Min.
AUTHOR(S): Reimchen, T.
REPORT YEAR: 1991, 62 Pages
COMMODITIES
SEARCHED FOR: Feldspar
KEYWORDS: Chehalis Volcanics,Dykes,Dacite,Soda feldspar
WORK
DONE: Drilling,Geochemical
ROTD 96.0 m 10 hole(s)
SAMP 11 sample(s)
RELATED
REPORTS: 18973
MINFILE: 092G

SUMAS SODA FELDSPAR PROPERTY

SUMAS MOUNTAIN, NTS 92G/1E, B.C.

NEW WESTMINSTER MINING DIVISION
122° 10′ W, 49° 7′ N

A FELDSPAR PROJECT

FOR

QUALITY INDUSTRIAL MINERALS LTD.
4550 East Hastings Street
North Burnaby, B.C.
V5C 2K4

by

Ted H. F. Reimchen P. Geol 1972 (Alberta)

PEGASUS EARTH SENSING CORPORATION
4761 COVE CLIFF ROAD
NORTH VANCOUVER, B.C. V7G 1H8

SEPTEMBER, 1991

PEGASUS
SUMAS SODA FELDSPAR
earth sensing
corporation

476T COVE CLIFF ROAD
NORTH VANCOUVER, BRITISH COLUMBIA
CANADA V7G 1M8
TELEPHONE: (604) 929-0244
FACSIMILE: (604) 929-7231

QUALITY INDUSTRIAL MINERALS LTD.
4550 East Hastings Street
North Burnaby, B.C.
V5C 2K4

September 15, 1991
re: Project 211-04

Dear Mr. Bergman:

Re: SUMAS FELDSPAR(ALBITE)

Please find enclosed six copies of a report entitled "Sumas Soda Feldspar Property....A feldspar Project".

The results of our field investigations combined with drilling and analytical analyses show that a minimum of 36,000,000 tonnes of low-iron feldspar are available for exploitation.

A simple beneficiation program involving a dilute acid wash will produce an acceptable product for the end users.

Use of the dilute acid wash will allow exploitation of an additional 150,000,000 tonnes of feldspar.

Feldspar is used in the manufacture of container glass, fibreglass and speciality glass such as dinner ware but not window glass. It is also used in ceramics, porcelain and floor tiles.

In a study prepared for the Province of B.C., March, 1988, the principal source for feldspar is in Ontario and the eastern most states of the U.S.. Manufacturers of products in Western Canada and the Northwest United States must import (at high freight costs) from those areas.

Prices, although outside of this study are important in economic evaluation. In 1984 and 1985, Japan imported 97,674 tons from Canada costing $45.00/ton.

Sincerely,

T.H.F. RHENCHEN P. Geol. (1972-Alta.)

SUMMARY

The Sumas Soda Feldspar prospect contains rocks rich in feldspar outcropping over several kilometers and a few hundred meters in depth (Units 4 and 5 in Figures 5 and 5a).

Several nearly vertical dykes and large masses containing pink to cream to white coloured leucocratic dacite (Unit 5), have the best potential for use as a low-iron industrial mineral with little beneficiation to create a commercial product (see Boreholes 5 and 6, Figure 7).

Unit 4 rocks are part of a previously unmapped geologic unit first described by Payne in 1986 with modifications by Bakker, 1990 and this report. These feldspar rich rocks outcropping over several kilometers consist of different varieties and ranges in colour. Rocks that are dark green to black usually contain more mafic minerals and have been partially separated into a separate map unit--Unit 4i (Figure 5). Contacts between pink to white coloured rocks and dark coloured ones are usually diffuse to gradual but occasionally, as near Boreholes 5 and 6, the geological contact is sharp and dyke-like.

In the zone of surface weathering Fe is deposited along cracks and on the surfaces of the grains. Insufficient testing was done to see if iron decreases with depth. The borehole descriptions in Appendix B contain notes that reflect its visible abundance. Thus BH #1 contains less iron at 4 meters, BH #4 at 5 meters, BH #5 at 6 meters, and BH #6 at 6 meters.

A comparison of the Fe2O3 in the 99 samples analyzed by Payne (Figures L - N Appendix A, 1986/87) indicates that Unit 5 and Unit 4b are similar and have a large overlap (Figure 7). Unit 4i and Unit 3 are also similar but average much higher in Fe2O3. It appears that with respect to the Fe2O3 content, Unit 4b is similar to Unit 5. Recent analytical analyses suggest that sufficient Fe can be easily removed using an weak acid wash so as to create an acceptable product (Figure 8 and Appendix A-Figures E to I).

A simple beneficiation program utilizing a dilute acid solution such as 5% HCL or H2SO4, will produce a product that fits within the exacting specifications by the end users.

SUMAS SODA FELDSPAR

The question always arises--Does the acid wash leave a deleterious affect on the chemical bonding characteristics of the Fe-free feldspar? Hoffman (see Memorandum following this report) states:

> "Results from other elements of the multielement analysis sheds light on this issue. Most importantly, what is happening to the albite(leucocratic dacite)?.....Albite is a sodium aluminum silicate, and little of these elements are leaching from analysis of the leachate. Ca replaces Na in the albite structure, and several samples report substantial Ca leaching exceeding 0.8% (ed. note. Bore hole 1-6, Bore hole 4-6, both from Unit 4 and Borehole 6-8 from Unit 5--see Figure 5a).
>
> These are samples rich in calcite as gauged by the carbonate determination. The leach is thus dissolving a deleterious component of the albite product. Other elements being removed in significant amounts include only Mn (Manganese) probably associated with Fe in the oxide fraction. Chemical analysis cannot tell if surface characteristics of the albite mineral is being affected one way or the other
>
> .....Regardless of the mineralogy, the experiments indicate dilute acid will extract enough Fe in ...samples to produce an acceptable product."

VOLUMES

To reiterate:

> "The Sumas Soda Feldspar prospect contains rocks rich in feldspar outcropping over several kilometers and a few hundred meters in depth (Units 4 and 5 in Figure 5a).
>
> Several nearly vertical dykes (greater than 50 meters in depth) containing pink to cream to white coloured leucocratic dacite (Unit 5), have the best potential for use as a low-content iron industrial mineral with little to no beneficiation (see Boreholes 5 and 6, Figure 7).

Although the actual thickness of the dykes is considered to be a few hundred meters, for conservative calculations **A MINIMUM DEPTH OF 50 meters is assumed:**

SUMAS SODA FELDSPAR

If one were only to consider the larger dykes of Unit 5 the area around Boreholes 5 and 6 will then contain 3,000,000 tonnes of leucocratic dacite.

The area around Borehole 4 will contain 3,000,000 tonnes.

The area to the northeast of Boreholes 5 and 6 in Samus 4 will contain some 20,000,000 tonnes.

The area east of Borehole 4 in Claim Beth 5 and Bill 1 will contain 10,000,000 tonnes.

The above areas and many smaller ones have the lowest amount of Fe ranging in the area of 0.31% at the surface. These materials will need little beneficiation to meet the standards and specifications of the end users.

In addition if one were to treat some of Unit 4 with a dilute acid wash the tonnage of feldspar rich dacite would be immense--in the order of a few hundreds of million tonnes. **Testing to date has shown that it is possible to produce a low-iron leucocratic feldspar dacite suitable for the exacting standards of high quality glass or porcelain.**

TABLE OF CONTENTS

ILLUSTRATIONS

INTRODUCTION

Purpose:

In August of 1989, the directors of Quality Industrial Minerals requested that Pegasus Earth Sensing Corporation perform an economic evaluation of their feldspar claims on Sumas Mountain. Several property visits were made to review and map the geology (September 7/89, November 4/89, February 15/90, May 5/90, August 2/90, February 8/91, April 25/91, July 6/91 culminating with the drilling program July 13-14/91). Samples were collected and analyzed in an attempt to stratify the different rock types and provide a viable commercial product.

Location:

The claims are located on the west side of Sumas Mountain (Figure 1). They are accessed off the Upper Sumas Mountain and Batt Roads by a gravelled forestry access road which leads into the heart of the claims Figure 1.

Physiography:

The property ranges from Elevation 240 m. in the west to over 440 m. in the east. Craggy knobs of bedrock are readily visible through a thin to nonexistent soil cover. The area has been logged and partly reforested within the last 3 - 4 years. Glacial deposits tend to be rubbly glacial till and average less than 2 meters in thickness.

Property Definition:

The property consists of 18 claims in good standing, grouped under the name 'Sumas Silica,' by Jack Lee, a director of the

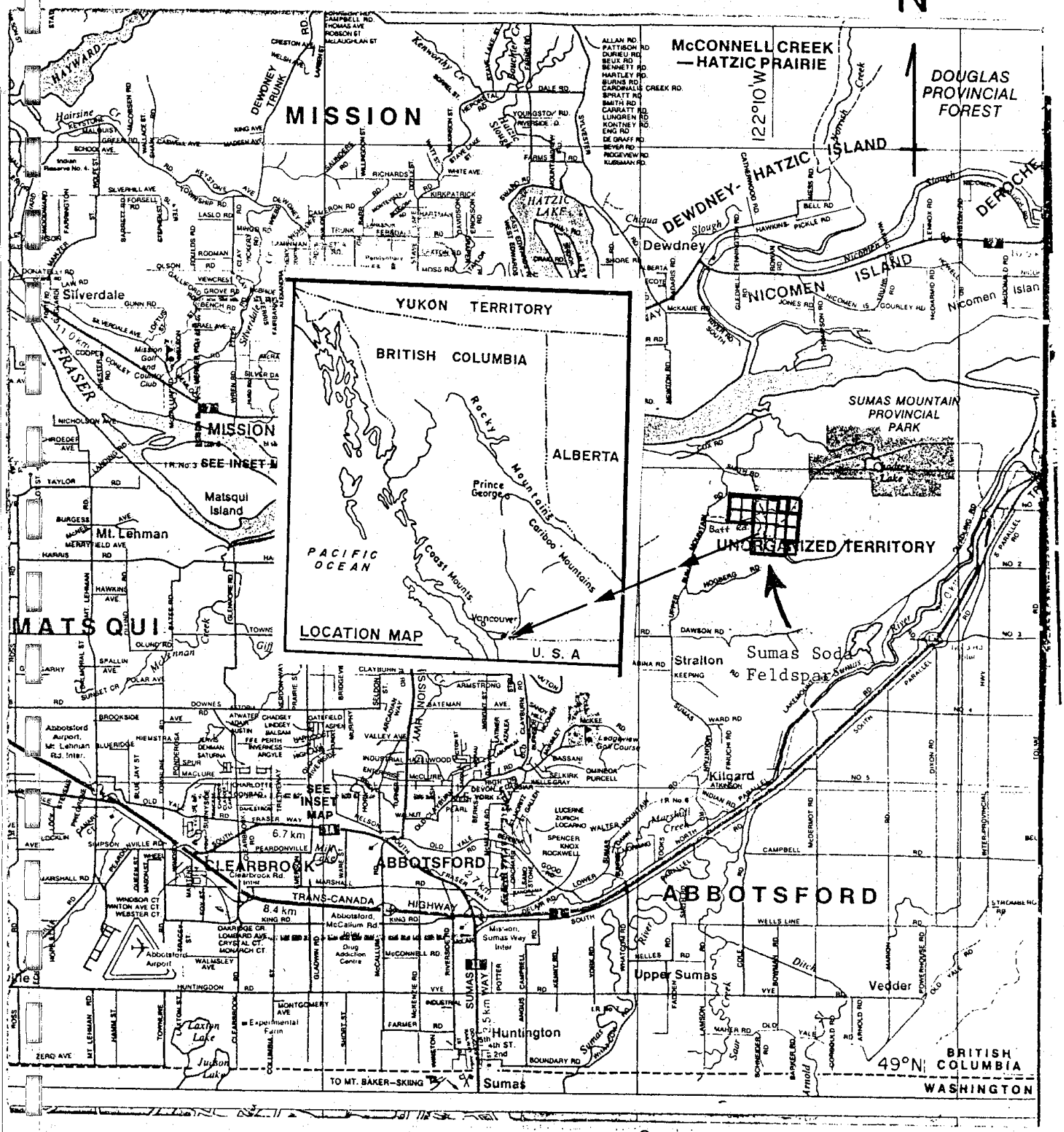


Figure 1. Location Map

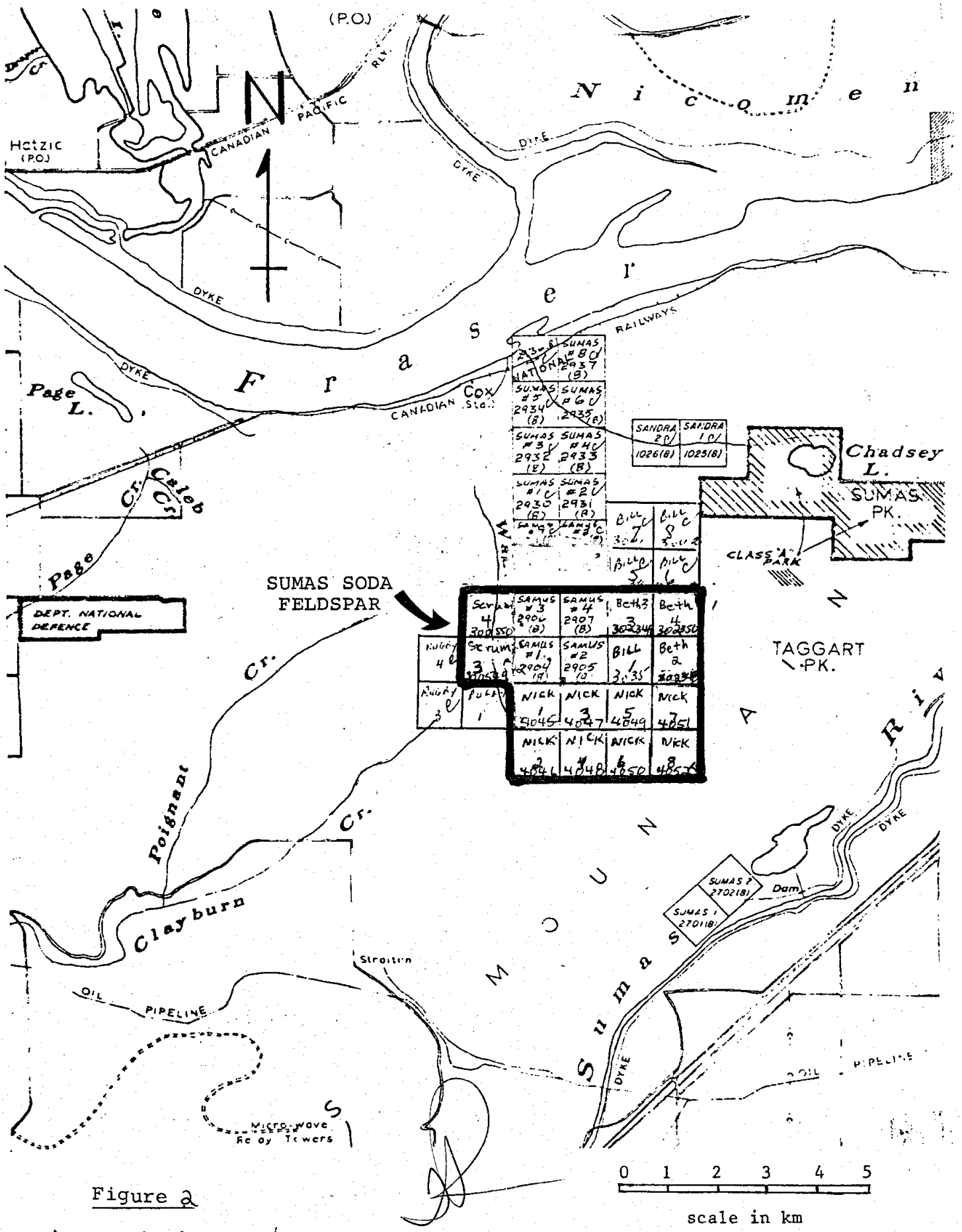


Figure 2

NTS M92G/1E

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources
MINERAL RESOURCES DIVISION – TITLES BRANCH

DOCUMENT No. _____ OFFICE USE ONLY

PAID
$10.00
AUG - 6 1991
GOVERNMENT
NEW WESTMINSTER
TRANSACTION STAMP 1000147

Mineral Tenure Act
SECTION 26

NOTICE TO GROUP

INDICATE TYPE OF TITLE INDUSTRIAL MINERAL
(Mineral or Placer)*

I, JACK D. LEE (Name)
37195 – WARD RD (Address)
ABBOTSFORD BC
852 4106 (Telephone) V2S 4N4 (Postal Code)

[1]Agent for _____ (Name)
_____ (Address)
_____ (Telephone) _____ (Postal Code)

Valid subsisting FMC No. 1154 11
FMC Code LEE J D

Valid subsisting FMC No. _____
FMC Code _____

request that the following mineral titles be grouped under group name "SAMAS SILICA"

Mining Division NEW WESTMINSTER Map No. 92G 1E

Name of Claim	No. of Units	Title Number
SAMUS #1	1	2904
SAMUS #2	1	2905
SAMUS #3	1	2906
SAMUS #4	1	2907
SCRUM #3	1	300549
SCRUM #4	1	300550
NICK #1	1	4045
NICK #2	1	4046
NICK #3	1	4047
NICK #4	1	4048
NICK #5	1	4049
NICK #6	1	4050
NICK #7	1	4051
NICK #8	1	4052
BILL #1	1	302347
BETH #2	1	302348
BETH #3	1	302349
BETH #4	1	302350
	18	
TOTAL OF 18 CLAIMS		

Jack D. Lee
(Signature of Applicant)

APPROVED BY GOLD COMMISSIONER

*NOTE: Mineral claim(s) and lease(s) cannot be grouped with placer claims and leases

[1]NOTE: Agent must be authorized in writing

Figure 3 Notice To Group

MTL 114 REV. 88/07
M28-2146

Company (Figures 2 & 3). The claims are located within the New Westminster Mining Division, British Columbia.

GEOLOGY

Regional Geology:

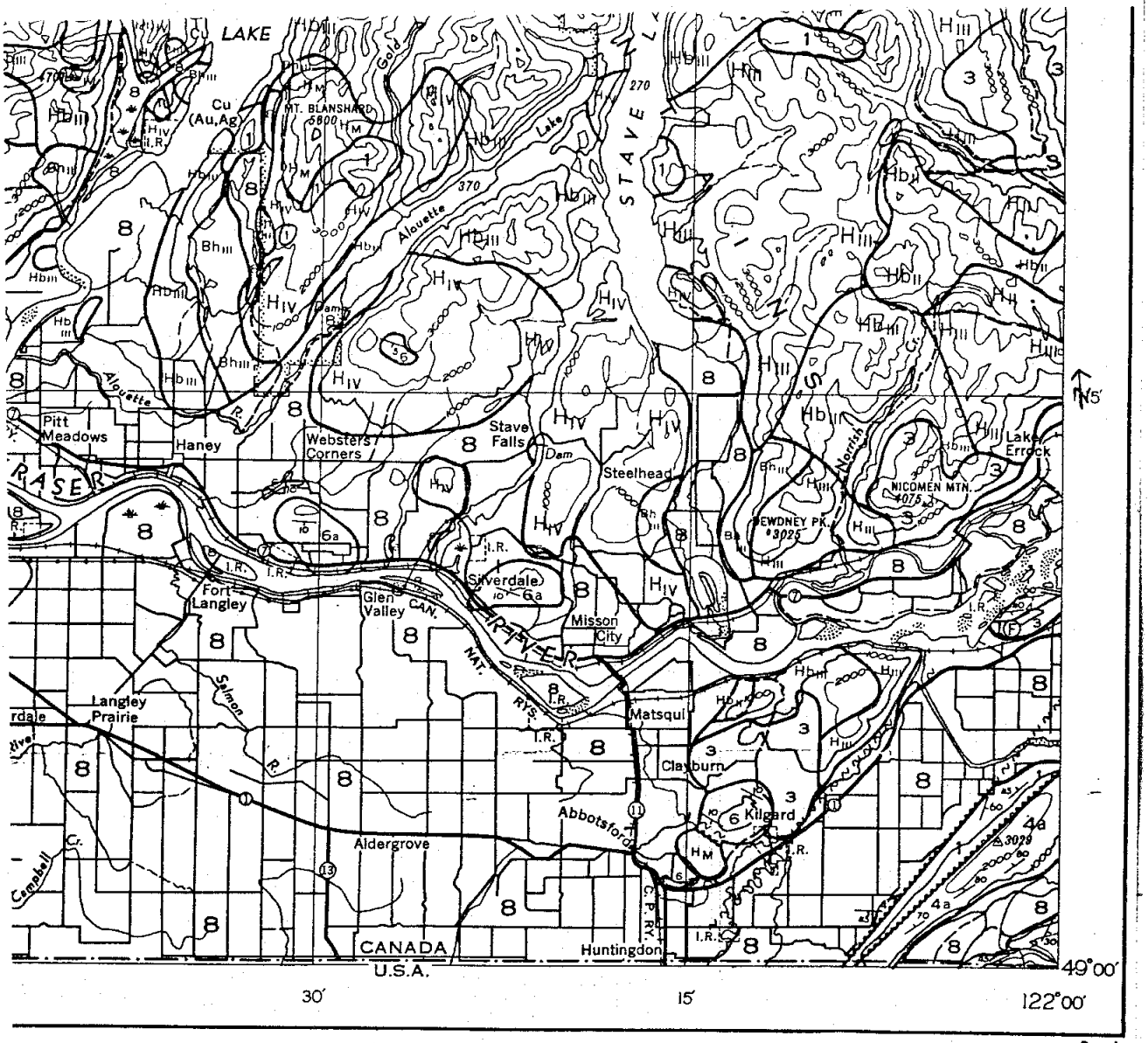
Roddick (1956) first mapped this area as being part of the Chehalis Volcanics (Figure 4). He indicated that the rock present consisted of massive andesite and dacite porphyries characterized by phenocrysts of plagioclase and commonly quartz. Biotite-hornblende quartz diorite of the Coast Range Batholith is present on the east side of Sumas Mountain. Quaternary sediments, mainly alluvium covers lower elevations including the Fraser River Delta.

Property Geology:

The Sumas Silica Claims are underlain by massive hornblende granodiorite and a complex feldspar-rich dyke possible of Cretaceous Age (Figure 4). The granodiorite is a medium-grained, grey to pink rock dominated by K-feldspars and lesser quartz with hornblende and biotite. The mafic minerals are partly altered to chlorite and epidote (Roddick, 1956).

The area was first studied in detail by John Payne, PhD in 1986 and again in 1989 (Figures 5 and 5a). The feldspar dyke extends in a N-S direction for a few kilometers and is up to 200 m. wide, (Payne, 1989). The expected vertical dimension is considered to be a few hundred meters (ibid). Payne in his 1989 report states that:

> "The dike contains at least two major phases, whose relative ages are uncertain.
>
> Much of the dike is a porphyritic dacite (Unit 4), with phenocrysts of plagioclase and quartz in a aphanitic, pale to medium green groundmass. The phenocrysts of plagioclase and to a lesser extent quartz make up 10 - 25% of the rock. In places, this unit contains minor to moderately abundant inclusions averaging several cm. across of an aphanitic, medium to dark green andesite (Unit 4i), probably equivalent to the andesite of Unit 2.
>
> A second variety is a very fine to fine grained, leucocratic dacite (Unit 5) with fine grained phenocrysts of plagioclase, and quartz in a groundmass of feldspars(includes K-fldp.) and



ng Branch

MAP 8-1956

PITT LAKE

(VANCOUVER, EAST HALF)

NEW WESTMINSTER DISTRICT

BRITISH COLUMBIA

Geology north of latitude 49°15' by J. A. Roddick, and south of latitude 49°15' by J. E. Armstrong, 1953, 1954, 1955

4 2 0 4 8 12

3 — *CHEHALIS VOLCANICS: massive andesite and dacitic porphyries characterized by phenocrysts of plagioclase and commonly quartz*

GRANITIC ROCKS

The order of blocks is not an age sequence. These rocks appear to have been forming during most of the Mesozoic, particularly during the last half of the era

$Hb_{II-IV,M}$ — *Granitic rocks in which HORNBLENDE exceeds biotite, though both are present;* Hb_{II}, *granodiorite;* Hb_{III}, *quartz diorite;* Hb_{IV}, *diorite;* Hb_{M}, *migmatite (highly complex areas of intermingled pre-granitic and granitic rocks)*

Figure 4
Regional Geology Map

quartz. This rock commonly is cream to white in color. Both the above units contain a few percentage of hornblende and /or chlorite, with lesser Ti-oxide and locally pyrite.

A variety of this unit is a white to grey flow banded latite. It occurs along borders of some dikes and occupies the entire width of other narrower ones.

To the west, the dike grades sharply in composition to andesite. This rock varies in texture, with some outcrops being of massive, aphanitic, dark green andesite, others being slightly coarser grained but without phenocrysts, and others being porphyritic, with plagioclase phenocrysts in a medium to dark green, aphanitic groundmass.

"The dikes have potential for production for a low-iron industrial material for use in the fibreglass and glass industries, and possible in the ceramic industry. The feldspar-rich rock may have other uses because of its moderately high alumina content.....Of the rock types in the dikes, Unit 5 (leucocratic banded latite and leucocratic dacite) has the best potential for use as a low-iron industrial material."

The feldspar dyke is generally well-jointed. Limonite and to a lesser extent hematite are common on joint and fracture surfaces in the leucocratic varieties. Because the feldspar dykes are highly jointed and fractured and break readily into angular fragments suitable for road construction, minor quarrying has been done in the northeast property (Samus 4) to provide aggregate subbase for nearby subdivisions.

On the basis of field mapping and laboratory analysis, John divided the area into 5 map-units with Map-Unit 4 and 5 being feldspar-rich dacite and latite dikes. Unit 5 consisted of a cream to white leucocratic dacite and Map Unit-4 of a porphyritic medium green dacite with mafic inclusions (Figure 5).

John recommended further mapping trenching and drilling to outline areas of low iron rock suitable for commercial exploitation.

Verification of this work and further mapping was performed by Ebo Bakker, P. Geol.1980 (Alberta) of Pegasus Earth Sensing

LEGEND

Feldspar-rich Dacite/Latite Dikes

leucocratic, cream to white

4 porphyritic, medium green
4i with mafic inclusions

Coast Range Batholith

hornblende quartz diorite/granodiorite
3a altered, sheared

Jurassic (?)

Andesite (metamorphosed)
2a flow, flow breccia
2b tuffaceous sediments

Cherty Argillite
1a light grey, siliceous
1b dark grey, black, dark green

Boreholes, July'91

Samples see Figure A in Appendix A TR1-3

N

no outcrop

Batt Rd

Upper Sumas Mountain Road

to Sumas Mt Park

Sumas 4

Sumas 3

Sumas 2

Sumas 1

Beth 4

Beth 2

Nick 1

Nick 3

Nick 5

Nick 7

Nick 2

Nick 4

Nick 6

Nick 8

rubble

talus

no outcrop

Dawson Road

See Figure 5a Following for Detail

SYMBOLS

outcrop boundary, small outcrop

geological contact: defined, assumed

bedding

metamorphic foliation

border of timbered area (1987)

contour (interval 500 feet)

creek, swamp

road: main; logging track

modified by T. Reincke, Aug '91

J. Gilligan '87

scale in km

Claims Sumas Soda Feldspar

Property Geology

Figure 5
Property Geology With Boreholes
Sumas Soda Feldspar

Scrum4

Samus3

Samus4 Beth3

Samus1

Samus2

Beth4

Nick1

Nick3

Nick5

Nick7

Nick8

Beth1

Beth2

TR3

TR-2

TR-a

TR1

DH-1

DH-2

DH-3

DH-3a

DH-4

DH-5

DH-6

DH-7

DH-8

DH9

ridge

valley

Scale 1" = 950'

Drill Hole

SEE Fig. 5 for Geology Legend.

Samas Soda Feldspar Bore holes

TO ACCOMPANY REPORT BY

PEGASUS EARTH SENSING CORPORATION

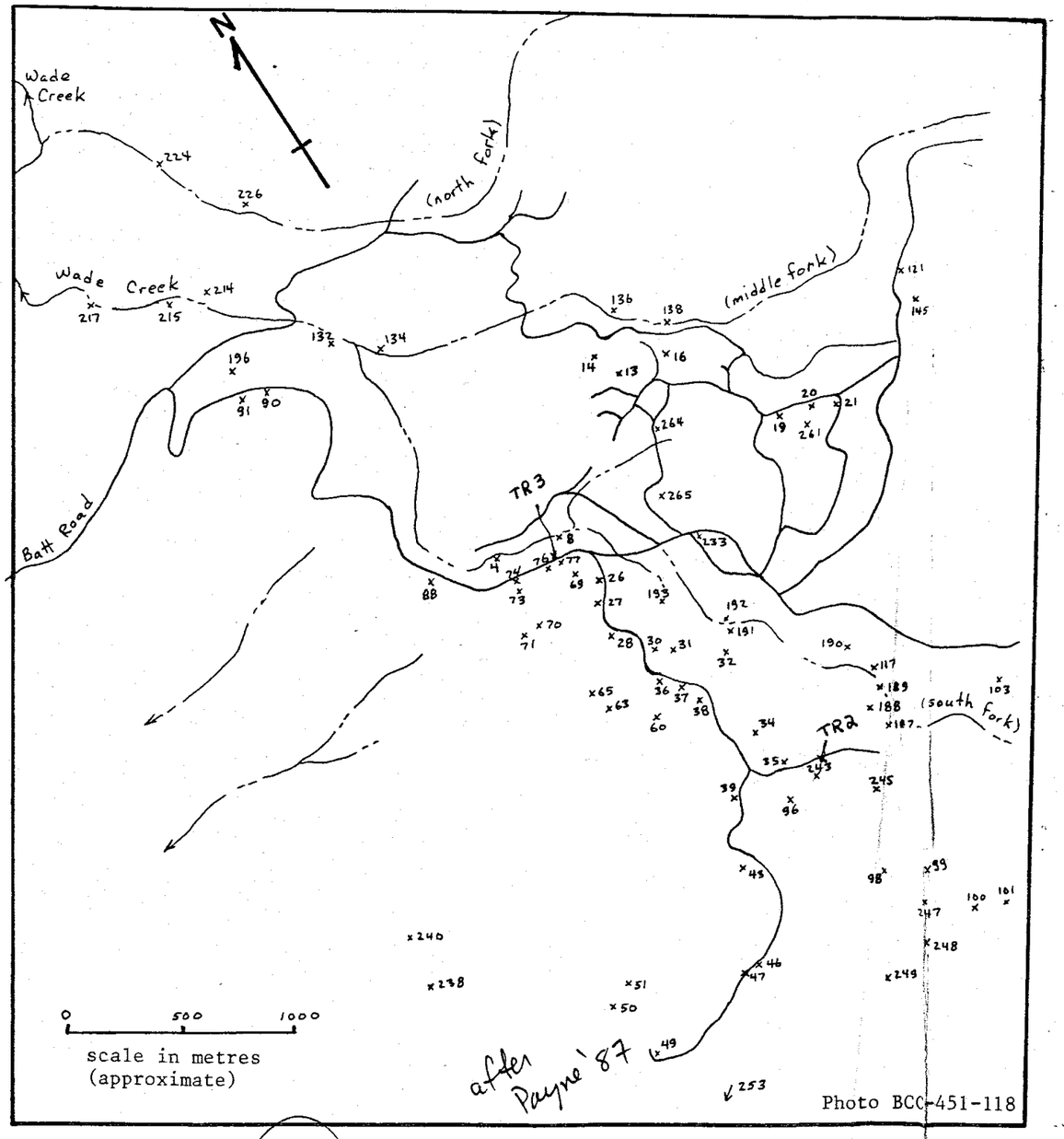
SCALE 1" = 950' | DATE Jan '92

FILE | FIGURE 5a

DRAWN JR | CHKD

Figure 5a
See also Figure 5

WEST HALF



EAST HALF

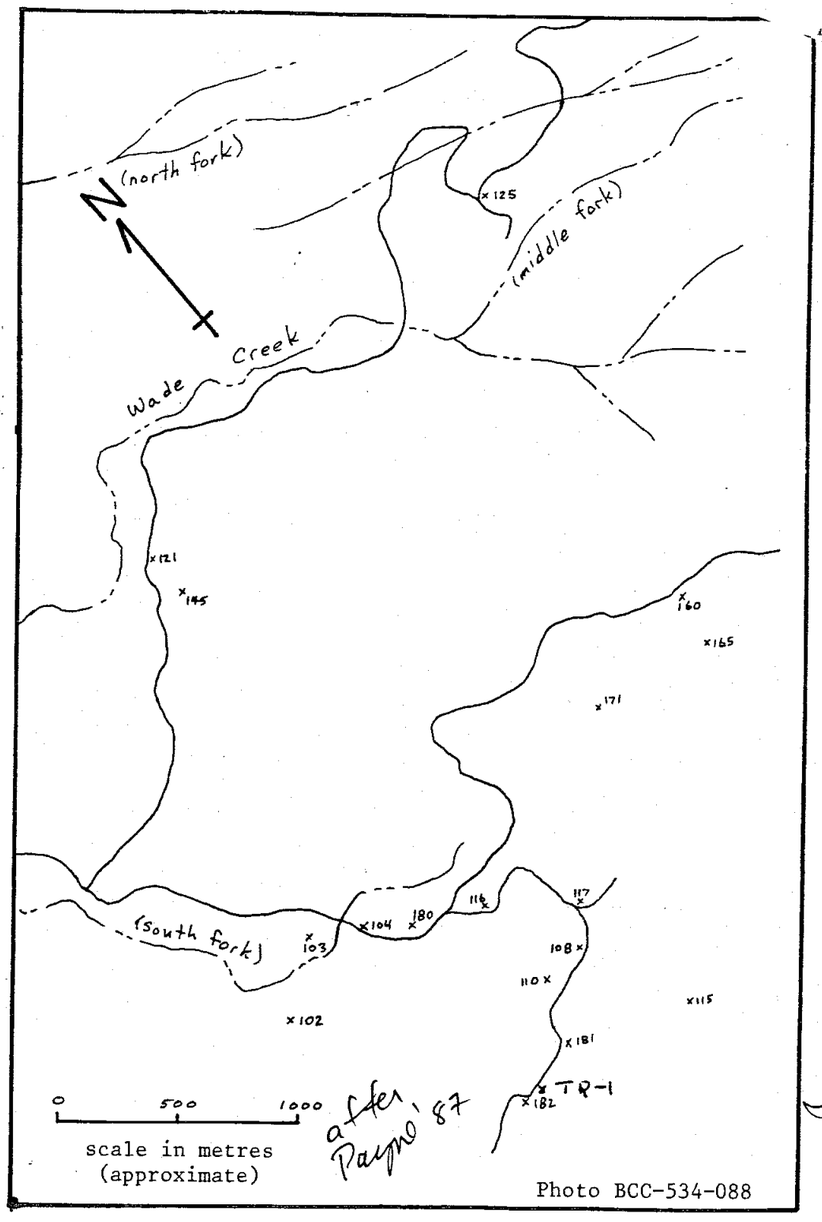


Figure 6 Sample Location Map of Payne, Overlay to Figure 5 for Location. Also see Appendix A, Figures 2-N

Corporation (August, 1990). Ebo found that the identification of the rocks, at least visually, was less straight forward then expected. He found that Unit 5 rocks are easily recognized when leucocratic but that greenish and grey fine grained rocks also mapped as Unit 5 are difficult to separate from Unit 4. He suggested that the contacts between these two rock types is gradual.

This report also found that small scale fractures (joints) are particularly common in Unit 5 rocks. The rocks usually contain iron-hydroxides (limonite-goethite and not magnetite!). On a larger scale, cliffs and deep incisions indicate the probable presence of larger joints and faults. These features are readily visible on aerial photographs. A common orientation is NW-SE, also N-S and E-W are present. It seems certain that faulting will considerably influence the distribution of the leucocratic rocks.

GEOCHEMISTRY

The critical factor in an economic evaluation is the iron content of the raw material. Much of the iron in the rock is locked up in silicates? (according to Payne, 1989 but not confirmed by later analytical analyses), and its removal during milling might be difficult and expensive. Thus raw material must have a sufficiently low iron content that it can be used without much beneficiation.

The iron content of the rocks below the zone of weathering is expected to be lower than that of samples from near the surface, where iron has been deposited on fractures. Thus, it is reasonable to expect to find large tonnages of rock with iron contents of less than 0.15% (Payne 1989).

For most users of feldspars the critical component is iron. Although maximum values for Fe allowable, vary with the intended use they range from

-0.25-0.35% for fibreglass,
-less than 0.05% for high quality glass and porcelain,
-0.30% for low quality glass.

Beginning in 1984, a director, Jack Lee submitted two samples of Unit 5 to Quanta Trace Laboratory. Based on the analyses of these samples the feldspar rich dykes were considered to have potential for production of a low-iron product (in Payne, 1989).

A further 99 chip samples were taken from outcrops of Units 3, 4, and 5 by John Payne in 1986 and analyzed by Acme Analytical

Laboratories (Figure 5 and Figures L - N in Appendix A). Payne (1989) suggested that the results of these samples demonstrate that Unit 5 is the only zone in the dykes with an economic potential for a low-iron, feldspar rich product. The values in Unit 5 range from 0.19 to 1.5% Fe203, with most samples between 0.5% and 1.0% Fe203.

Payne also performed a petrographical analyses and thought that much of the Fe in the rocks was contained in Fe-bearing silicates such as chlorite and actinolite, and to a lesser extent in hematite and pyrite. He also stated that the minerals generally were intimately intergrown with feldspar and therefore would be difficult to separate. After examining the crushed and probably ground rock he came to the conclusion that a moderate amount of iron was present as magnetite, most of which could be separated with a magnet!

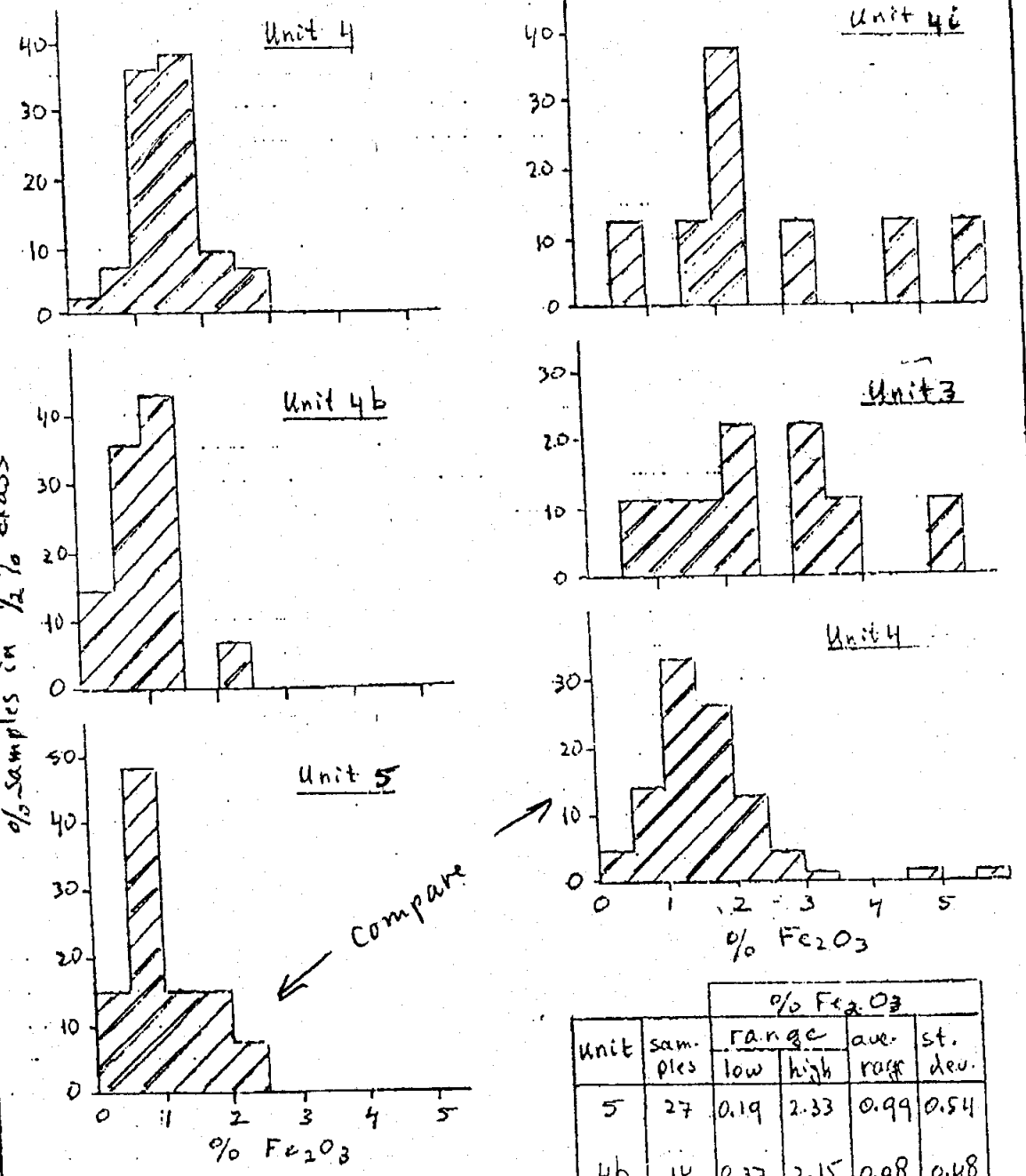
A study of the whole rock analyses in Figures J and K (Appendix A) gives data for nine Unit 5 rocks. These analyses (this study) show that there is an average excess of 2% Al2O3 with respect to the mineralogy mentioned. Some iron and magnesium is possible present as hornblende or chlorite rather than as actinolite.

Payne also noted that when using Chemex Laboratories and Acme Analytical Laboratories for **whole rock analyses**, that about one third of the results from Chemex were significantly lower (average about 0.2% Fe2O3) than corresponding results from the Acme Labs.

In the Pegasus report of August 1990, leucocratic rocks are exposed in the Nick 3 claim and traced for over 30 meters (samples E9 b-c with Fe contents ranging from 0.24 to 0.5%, analyses by SGS General Testing Laboratories). Ebo extended the mapping in Nick 4 claims due to the excellent exposure of outcrop from recent logging. He found that large parts of cliff and road exposures in the Nick 4 claim consisted of light coloured rocks with gradual contacts to darker coloured rocks. As an example, Sample E10, which was a dark grey fine grained rock had 1.86% Fe whereas E11, a lighter fine grained rock only had 0.4% Fe (also analyzed by SGS).

Ebo Bakker (1990) plotted the Fe2O3 results of Payne's 99 chip samples as histograms (Figure 7). He found that Unit 5 and Unit 4b are similar and have a large overlap with Unit 4. Unit 4i and Unit 3 are also somewhat the same but average much higher in Fe2O3 **It appears that with respect to the Fe2O3 content, Unit 4b is as good as Unit 5 and if iron proves to be easily removed , much of Unit 4 is as valuable as Unit 5.**

Ebo also suggested that because of the discrepancies in total iron content between Vancouver laboratories in the samples gathered



Unit	samples	% Fe_2O_3 range low	range high	ave. range	st. dev.
5	27	0.19	2.33	0.99	0.54
4b	14	0.37	2.15	0.98	0.48
4	42	0.47	2.84	1.61	0.53
4i	8	0.92	4.80	2.80	1.60
4 tot.	64	0.37	4.80	1.62	0.89
3	9	0.81	5.41	2.70	1.46

Based on data from:
J. G. Payne (1989) Sumas Soda Feldspar Property, Sumas Mountain, B.C. for Jacklee
Bakker, E. 1990

Figure 7

and analyzed by Payne that further samples be gathered from representative horizons. These samples should be split and analyzed by 3 different labs.

In February, 1991 Pegasus collected 3 additional samples (Figure 5a and 6) (TR-1 and TR-2 from Unit 4b and TR-3 from Unit 5 of Payne (1989)). These samples were collected because of the suggestion that some of the excess iron could be removed by magnetic means (see Payne, 1989). Previous utilisation of several types of crushers and ball mills to produce a fine-grind had resulted in a product in which visible magnetic iron was present (where did this magnetic iron come from-the sample? or the ball mill?).

These three samples were split by Quanta Trace Laboratories and the -100 mesh split sent to General Testing for chemical analyses (pulverizing them in a ceramic mill), (APPENDIX A--Figure A). Quanta proceeded to analyze the -200 mesh split by similar chemical analyses while running a standard as control. The results of the two laboratories are the same within acceptable limits--ONLY A TRACE OF MAGNETICS (APPENDIX A--Figures A, B, and C).

Quanta Trace then subjected one of the samples to an aqua regia acid bath in Figure D (APPENDIX A). In reference to Figure C, Column B presents the result of the original chemical analyses for TR-1. On the other hand, Column A gives the chemical analyses after the acid bath treatment.-- It can readily be seen that the acid bath has removed several solubles including some of the oxides of iron to a residual value of 0.07% (Subtract A from B for remnant values).

DRILLING PROGRAM

In an effort to evaluate iron content with depth as well as geology it was decided to drill several widely spaced boreholes. These boreholes located in Figures 5 and 5a are described in APPENDIX B.

A rotary hammer drill rig (Tamrock-TP 438) mounted on a tracked excavator was mobilized to the site on July 12, 1991. The drill steel capped by a 2 3/4" diamond bit recovered sample with compressed air by blowing it through a capping collar to a cyclone where the sample was collected in a plastic ice-cream pail with locking top. For this phase of drilling it was decided to use 4 pieces of steel, each 12 feet long allowing for a 48 foot (14.6 m.) deep hole. All holes were vertical.

Ten boreholes were completed to varying depths for a total of 96 meters (Appendix B). Boreholes 1, 2, 3, 3a, and 9 were drilled into Unit 4 of Payne (1989), classified as a porphyritic greenish dacite and Boreholes 4, 5 and 6 were drilled into Unit 5 characterized as light coloured leucocratic dacite (Figure 5a).

LABORATORY ANALYSES

For most users of feldspars the critical component is iron. Although maximum values for Fe allowable, vary with the intended use they range from

-0.25-0.35% for fibreglass,
-less than 0.05% for high quality glass and porcelain,
-0.30% for low quality glass.

Eight samples were selected for more analytical study (APPENDIX A--Figure E to I). The selection of samples from the boreholes was based on evaluating material from several different areas and depths of favourable rock. Boreholes #5 and #6 are typical of the fine grained cream to white leucocratic feldspar.

BOREHOLE	SAMPLE NO.	SAMPLE DEPTH
BH-1	1-6	4.5 - 5.5 m.
BH-3a	3-6	4.5 - 5.5 m.
BH-4	4-6	4.8 - 5.8 m.
BH-4	4-9	7.6 - 8.6 m.
BH-5	5-8	7.6 - 8.6 m.
BH-6	6-8	6.4 - 7.4 m.
BH-6	6-17	14.3 - 14.6 m.
BH-9	9-2	1.0 - 2.0 m.

Dr. Stan Hoffman of Prime Geochemical Methods Ltd. (Vancouver) organized the flow sheet for sample testing so as to eliminate introduction of foreign elements and test for per cent Fe. Stan suggested that the following procedure be followed:

1 Split samples prior to pulverizing using a Jones splitter (the Tamrock drill produced samples no larger than 10 mesh.

2 A 100 gm split will be pulverized in a ceramic mill so as to avoid Fe contamination from a grinder.

3 Samples will be analyzed for total metals using a lithium metaborate fusion.

4 The pulps produced will be subjected to an aqua regia extraction to remove Fe tied up in oxides, sulphides, and most silicates. **The difference between 3 and 5 will give the total Fe residue in the sample. To change Fe2O3 to Fe divide by 1.43.**

5 A 5% hot hydrochloric acid leach for one hour would be used to test if the Fe can be removed by washing using a very dilute acid.

6 A 5% hot sulphuric acid leach for one hour would be used to test if the Fe can be removed by washing.

7 A 5% cold hydrochloric acid leach for 10 hours would be used to test how much Fe can be removed.

DISCUSSION

The Sumas Soda Feldspar prospect contains rocks rich in feldspar outcropping over several kilometers and a few hundred meters in depth (Units 4 and 5 in Figures 5 and 5a).

Several nearly vertical dykes and large masses containing pink to cream to white coloured leucocratic dacite (Unit 5), have the best potential for use as a low-iron industrial mineral with little beneficiation to create a commercial product (see Boreholes 5 and 6, Figure 7).

Unit 4 rocks are part of a previously unmapped geologic unit first described by Payne in 1986 with modifications by Bakker, 1990 and this report. These feldspar rich rocks outcropping over several kilometers consist of different varieties and ranges in colour. Rocks that are dark green to black usually contain more mafic minerals and have been partially separated into a separate map unit--Unit 4i (Figure 5). Contacts between pink to white coloured rocks and dark coloured ones are usually diffuse to gradual but occasionally, as near Boreholes 5 and 6, the geological contact is sharp and dyke-like.

In the zone of surface weathering Fe is deposited along cracks and on the surfaces of the grains. Insufficient testing was done to see if iron decreases with depth. The borehole descriptions in Appendix B contain notes that reflect its visible abundance. Thus BH #1 contains less iron at 4 meters, BH #4 at 5 meters, BH #5 at 6 meters, and BH #6 at 6 meters.

A comparison of the Fe2O3 in the 99 samples analyzed by Payne (Figures L - N Appendix A, 1986/87) indicates that Unit 5 and Unit 4b are similar and have a large overlap (Figure 7). Unit 4i and Unit 3 are also similar but average much higher in Fe2O3. It appears that with respect to the Fe2O3 content, Unit 4b is similar to Unit 5. Recent analytical analyses suggest that sufficient Fe can be easily removed using an weak acid wash so as to create an acceptable product (Figure 8 and Appendix A-Figures E to I).

A simple beneficiation program utilizing a dilute acid solution such as 5% HCL or H2SO4, will produce a product that fits within the exacting specifications by the end users.

The question always arises--Does the acid wash leave a deleterious affect on the chemical bonding characteristics of the Fe-free feldspar? Hoffman (see Memorandum following this report) states:

> "Results from other elements of the multielement analysis sheds light on this issue. Most importantly, what is happening to the albite(leucocratic dacite)?.....Albite is a sodium aluminum silicate, and little of these elements are leaching from analysis of the leachate. Ca replaces Na in the albite structure, and several samples report substantial Ca leaching exceeding 0.8% (ed. note. Bore hole 1-6, Bore hole 4-6, both from Unit 4 and Borehole 6-8 from Unit 5--see Figure 5).
>
> These are samples rich in calcite as gauged by the carbonate determination. The leach is thus dissolving a deleterious component of the albite product. Other elements being removed in significant amounts include only Mn (Manganese) probably associated with Fe in the oxide fraction. Chemical analysis cannot tell if surface characteristics of the albite mineral is being affected one way or the other
>
> .....Regardless of the mineralogy, the experiments indicate dilute acid will extract enough Fe in ...samples to produce an acceptable product."

ACME ANALYTICAL FE ANALYSIS
PEGASUS EARTH SENSING CORPORATION
FILE #91-2811

SAMPLE NUMBER	TOTAL FE REPORTED AS Fe_2O_3	FET	FE1-HOT-AR %	FET-FE1	FE5%-HCL (HOT) %	FET-FE2	FE5%-HCL (COLD-1H) %	FET-FE3	FE5%-HCL(COLD-10H) %	FET-FE4	FE5%-H_2SO_4 (HOT) %	FET-FE5
1-6	1.37	0.96	0.79	0.17	0.64	0.32	0.11	0.85	0.30	0.66	0.75	0.21
3-6	1.67	1.17	1.30	-0.13	1.03	0.14	0.34	0.83	0.61	0.56	1.17	0.00
4-6	0.99	0.69	0.75	-0.06	0.60	0.09	0.24	0.45	0.45	0.24	0.68	0.01
4-9	0.71	0.50	0.49	0.01	0.44	0.06	0.12	0.38	0.28	0.22	0.47	0.03
RE 4-9	(0.71)*	(0.50)*	0.52	-0.02	0.44	0.06			0.29	0.21	0.47	0.03
5-8	0.48	0.34	0.32	0.02	0.26	0.08	0.07	0.27	0.17	0.17	0.31	0.03
6-8	0.45	0.31	0.30	0.01	0.22	0.09	0.08	0.23	0.14	0.17	0.28	0.03
6-17	0.49	0.34	0.35	-0.01	0.28	0.06	0.08	0.26	0.16	0.18	0.31	0.03
9-2	1.87	1.31	1.03	0.28	0.80	0.51	0.11	1.20	0.45	0.86	1.05	0.26

* - sample not reanalyzed by total analaysis methods
AR - aqua regia
FET - total iron reported as the element

Hoffman '91

Figure 8

VOLUMES

To reiterate:

"The Sumas Soda Feldspar prospect contains rocks rich in feldspar outcropping over several kilometers and a few hundred meters in depth (Units 4 and 5 in Figure 5a).

Several nearly vertical dykes (greater than 50 meters in depth) containing pink to cream to white coloured leucocratic dacite (Unit 5), have the best potential for use as a low-content iron industrial mineral with little to no beneficiation (see Boreholes 5 and 6, Figure 7).

Although the actual thickness of the dykes is considered to be a few hundred meters, for conservative calculations **A MINIMUM DEPTH OF 50 meters is assumed:**

If one were only to consider the larger dykes of Unit 5 the area around Boreholes 5 and 6 will then contain 3,000,000 tonnes of leucocratic dacite.

The area around Borehole 4 will contain 3,000,000 tonnes.

The area to the northeast of Boreholes 5 and 6 in Samus 4 will contain some 20,000,000 tonnes.

The area east of Borehole 4 in Claim Beth 3 and Bill 1 will contain 10,000,000 tonnes.

The above areas and many smaller ones have the lowest amount of Fe ranging in the area of 0.31% at the surface. These materials will need little beneficiation to meet the standards and specifications of the end users.

In addition if one were to treat some of Unit 4 with a dilute acid wash the tonnage of feldspar rich dacite would be immense--in the order of a few hundreds of million tonnes. <u>Testing to date has shown that it is possible to produce a low-iron leucocratic feldspar dacite suitable for the exacting standards of high quality glass or porcelain.</u>

RECOMMENDATIONS

1 Prepare several kilograms of sample from existing drill holes by using an acid wash and submit to end users for suitability.

2 Continue testing the removal of Fe by use of a dilute solution of H2SO4 similar to the HCL.

3 Repeat the one hour experiment (and repeat for different hours of agitation say 5 hours and then 10 hours) of dilute 5% HCL using ascorbic acid or even Hydrogen peroxide which according to Dean Toye (chief chemist) at Acme will act as a reducing agent keeping the Fe in a ferrous state. The purpose of this testing is to provide a low-iron product with the minimum beneficiation and time.

4 Submit samples from remaining drill holes and surface samples from known localities for analyses. Perform an abrasion and crushing test for hardness and a General Electric brightness test.

5 Prepare a base map at a scale of 1:1000 with 5 meter major contours and update all of the geological mapping. Prepare crosssections showing structure and stratigraphy of the low-iron materials. This type of mapping and display is the initial step in mine-planning. It will show ore and waste.

6 Drill several 15 meter holes in the Unit 5 dykes in Samus 4 and Beth 5 and some of the more favourable areas found in the Bakker mapping in Nick 6. Select sites after the geological mapping is complete.

7 Several deeper drill holes (to 30 meters) should be carried out in the target zones to outline areas of feldspar needing the least beneficiation.

REFERENCES CITED

Roddick, J. A. 1965 Vancouver North, Coquitlam, and Pitt Lake Map Areas, British Columbia. Geol. Surv. Can., Mem. 335, 276 p. includes Map 8-1956.

Payne, J. G. 1986 Geology of the Samus Claim Group, New Minster Mining Division, NTS 92G/1E--a feldspar prospect. private report for Westcan Energy Ltd.

Payne, J. G. 1989 Sumas Soda Feldspar Property, Sumas Mountain, B.C. New Minster Mining Division, NTS 92G/1E--a feldspar prospect. private report for Jack Lee.

Reimchen T. H. F. 1990 (March) A Progress Report on the Geology of the Sumas Mountain feldspar prospect B.C. New Minster Mining Division, NTS 92G/1E--a feldspar prospect. A private report by Pegasus Earth Sensing Corporation, North

Vancouver for Quality Minerals Ltd.

Bakker, E, 1990 (August) An Update and review of the Geology of the Sumas Mountain feldspar prospect B.C. New Minster Mining Division, NTS 92G/1E--a feldspar prospect. A private report by Pegasus Earth Sensing Corporation, North Vancouver for Quality Minerals Ltd.

Reimchen T. H. F. 1991 (March) An Update of the Geology of the Sumas Mountain feldspar prospect B.C. New Minster Mining Division, NTS 92G/1E--a feldspar prospect. A private report by Pegasus Earth Sensing Corporation, North Vancouver for Quality Minerals Ltd.

MEMORANDUM OF Prime Geochemical Methods Ltd by Dr. Stan Hoffamn, P. Geo.; September 12, 1991.

PRIME GEOCHEMICAL METHODS LTD.

1531 West Pender Street
Vancouver, B.C., Canada V6G 2T1
Telephone: (604) 684-0069 Message: (604) 731-8892 Fax: (604) 682-7354

MEMORANDUM

TO: Ted Reimchen
Pegasus Earth Sensing Corp.

FROM: Stan Hoffman

DATE: September 12, 1991

****

RE: SUMAS FELDSPAR

Results of the analysis recommended in the memo of July 16, 1991 are in hand, along with some followup data. The extractability of Fe is summarized in Table 1.

The Fe content of the albite samples are readily leached by dilute acids, with sulphuric acid (Fe5) slightly more efficient than hot hydrochloric acid (Fe2). Successful completion of the first phase of the experiment was defined by a residue Fe in the sample comprising less than 0.3% of almost all samples; many reporting values of less than 0.1%. Use of hot acid does not likely have applications to a commercial processing operation.

Initial results were followed up by employing a 5% cold hydrochloric acid leach for 1 hour (Fe3). Fe was leached to acceptable levels in only about half the samples. Allowing the same leach to proceed for 10 hours (with agitation) (Fe4) improved leachability markedly, although three samples (1-6, 3-6, 8-7) still contain Fe in unacceptably high concentrations. Two possible

experiments can be tried to determine if the cold extraction result can be improved:

(1) Repeat the 10 hour experiment using cold 5% sulphuric acid; and

(2) Repeat the 10 hour experiment using cold 5% hydrochloric acid augmented by a reducing agent. Two possible low cost agents can be suggested:

(a) ascorbic acid

(b) hydrogen peroxide

In view of the low cost of the analysis, testing the above reagents is recommended.

The question arises, are these extracting reagents having a deleterious affect on the Fe-free product. Results from other elements of the multielement analysis sheds light on this issue. Most importantly, what is happening to the albite?

Albite is a sodium aluminum silicate, and little of these elements are leaching from analysis of the leachates. Ca replaces Na in the albite structure, and several samples report substantial Ca leaching exceeding 0.8% (1-6, 4-6, 6-8). These are samples rich in calcite as gauged by the carbonate determination. The leach is thus dissolving a potentially a deleterious component of the albite product. Other elements being removed in significant amounts include only Mn probably associated with Fe in the oxide fraction. Chemical analysis cannot tell if surface characteristics of the albite mineral is being affected one way or the other.

Reimchen reports that historical mineralogical work has identified mafic silicate minerals and magnetite as constituting the Fe fraction. Although Fe-bearing silicates and magnetite will leach in dilute cold acid, hydrous Fe oxides would leach in a more efficient manner. Regardless of the mineralogy, the experiments indicate dilute acid will extract enough Fe in enough samples to produce an acceptible product. Although some samples contain more Fe than is satisfactory, dilution accompanying the blending of material from different parts of the deposit (for example, the average Fe content of the 8 samples leached by cold hydrochloric acid in 10 hours is 0.3%) and minor adjustment in reagent or experimental conditions could probably lead to production of a suitable product.

Stan Hoffman Phd., P.Geo.

SH:ah

CERTIFICATE

I, TED. H.F. REIMCHEN OF 4761 COVE CLIFF ROAD, North Vancouver, in the Province of British Columbia, Canada, DO HERBY CERTIFY:

1. THAT I am a Professional Geologist with an office at the above address.

2. THAT I am a graduate of the University of Alberta located at Edmonton, Alberta where I obtained a BSc. and MSc. Degree in Geology in 1966 and 1968 respectively.

3. THAT I have been practising my profession as a Professional Consulting Geologist in the Province of British Columbia, since 1972.

4. THAT I have been a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta since 1972.

5. THAT I am the author of this report and my findings are based on field work and interpretation during August, 1989 September 1991.

6. THAT I have no direct interest in any of the claims or leases for this area or in any securities or common stock issued by Quality Industrial Minerals.

Dated this 12 day of September, 1991, January 1992, at the City of North Vancouver in the Province of British Columbia.

PROFESSIONAL GEOLOGIST T. REIMCHEN BRITISH COLUMBIA

T.H.F.REIMCHEN P. Geol. (1972, Alta.)

APPENDIX A--LABORATORY ANALYSES

Figure A	Quanta	1991
Figure B	SGS	1991
Figures C - D	Quanta	1991
Figures E - I	Acme	1991
Figure J	Quanta	1986
Figure K	Acme	1987
Figures L - N	Acme(Payne)	1986
Figure O	Acme	1987
Figures P - Q	Chemex	1987
Figure R	SGS	1987

quanta trace laboratories inc.
#401-3700 Gilmore Way, Burnaby, B.C., V5G 4M1 Tel:(604)438-5226 Fax:436-056

ANALYSIS OF GEOLOGICAL SAMPLES

To: Quality Industrial Minerals
4550 East Hastings Street
Burnaby,B.C.

Workorder: 15530
Received : 12-Feb-9
Completed: 05-Mar-9

Attn: Mr.W.Bersman

Re: Chemical Analysis of Feldspar Samples

A. Sample Preparation

1. The total sample was jaw crushed and pulverized to approximately 100 mesh.
2. A split was taken and iron was removed with a magnet. (Split 1)
3. A second split was taken, pulverized in a mortar to -200 mesh, and the iron was removed with a magnet. (Split 2)
4. The magnetic iron in the samples was weighed.
5. The split 1 samples with the magnetic iron removed was analyzed by our laboratory.
6. The split 2 samples were sent to General Testing Laboratories for chemical analysis.
7. Sample BCS 376 is a Standard Reference Material which was carried through the analytical procedure.

B. Removal of Magnetic Iron from Samples

	TR-1	TR-2	TR-3
Magnetic Iron in 100 mesh sample	0.0046 %	0.0023 %	0.0038 %
Magnetic Iron in 200 mesh sample	0.0033 %	0.0024 %	0.0033 %

Figure A

SGS Supervision Services Inc.
General Testing Laboratories Division

1001 East Pender Street
Vancouver, B.C.
Canada V6A 1W2
Telephone (604) 254-1647
Fax (604) 254-2148
Telex 04507514

QUALITY MINERAL
4550 EAST HASTINGS ST.
VANCOUVER, B.C.
V5C 2K4

CERTIFICATE OF ASSAY

Date: March 19, 1991
No.:
File: 91-0103-1421

WE HEREBY CERTIFY THAT THE FOLLOWING ARE THE RESULTS OF ASSAYS ON: FELDSPAR

MARKED	SILICA	SODIUM OXIDE	POTASSIUM	CALCIUM	ALUMINA	IRON OXIDE
	SiO2 (%)	Na2O (%)	K2O (%)	CaO (%)	Al2O3 (%)	Fe2O3 (%)
TR-1 -200	74.03	6.06	0.30	1.80	15.80	0.80
TR-2 -200	75.44	6.22	0.28	1.52	14.30	1.42
TR-3 -200	77.42	5.73	0.15	0.42	15.39	0.65

NOTE: Rejects retained for one month, pulps retained for three months.
On request pulps and rejects will be stored for a maximum of one year.
a maximum of one year.

L. WONG
PROVINCIAL ASSAYER

Figure B

quanta trace laboratories inc.
#401-3700 Gilmore Way, Burnaby, B.C., V5G 4M1 Tel:(604)438-5226 Fax:436-0

To: Quality Industrial Minerals W/O: 15530 Pag

B. Chemical Analysis of Feldspar After Removal of Magnetic Iron

Sample type	Feldspar	Feldspar	Feldspar	Feldspar	Feldspar
Identification	TR-1	TR-2	TR-3	BCS 376	BCS 376
Lab Reference #	15530-001B	15530-002B	15530-003B	15530-004	15530-00
Analyzed by Ultrasonic Nebulization - ICP					
Method used	Total	Total	Total	Total	Certified
Trace Elements					
Antimony Sb	< 4.	< 4.	< 4.	< 4.	-
Arsenic As	< 10.	< 10.	< 10.	< 10.	-
Beryllium Be	0.6	0.3	0.1	0.1	-
Bismuth Bi	< 10.	< 10.	< 10.	< 10.	-
Cadmium Cd	0.2	0.2	0.1	< 0.1	-
Chromium Cr	160.	180.	200.	< 10.	-
Cobalt Co	< 1.	< 1.	< 1.	< 1.	-
Copper Cu	2.	2.	10.	4.	5.
Lead Pb	4.	4.	8.	4.	-
Molybdenum Mo	< 1.	< 1.	< 1.	< 1.	-
Nickel Ni	4.	5.	5.	< 1.	-
Selenium Se	< 4.	< 4.	< 4.	< 4.	-
Thorium Th	< 4.	< 4.	< 4.	< 4.	-
Uranium U	< 20.	< 20.	< 20.	< 20	-
Vanadium V	35.	62.	10.	7.	-
Zinc Zn	7.	6.	5.	5.	-
Results in	ug/g	ug/g	ug/g	ug/g	ug/g
Majors as Oxides					
Silicon % SiO2	74.4	74.4	79.9	68.1	67.1
Aluminum %Al2O3	14.1	14.4	12.1	17.3	17.7
Iron %Fe2O3	0.84	1.40	0.52	0.096	0.10
Calcium % CaO	1.71	1.40	0.43	0.58	0.54
Magnesium % MgO	0.59	0.84	0.19	< 0.09	0.03
Sodium % Na2O	6.64	6.93	6.45	2.79	2.83
Potassium % K2O	0.30	0.30	0.21	11.0	11.2
Barium % BaO	0.007	0.008	0.006	0.031	-
Manganese % MnO	0.023	0.029	0.010	0.002	0.002
Phosphorus% P2O5	0.06	< 0.05	0.06	0.06	-
Strontium % SrO	0.014	0.024	0.014	0.0065	0.006
Titanium % TiO2	0.31	0.33	0.17	0.015	-
Zirconium % ZrO2	0.009	0.007	0.010	0.002	-
Loss On Ignitn. %	0.91	0.23	0.40	0.34	0.35
Total Oxides %	100.	100.	100.	100.0	100.0
Total Carbon %C	0.07	0.06	0.06	-	-
Total Sulfur %S	0.01	0.01	0.01	-	-

Figure C

quanta trace laboratories inc.
#401-3700 Gilmore Way, Burnaby, B.C., V5G 4M1 Tel:(604)438-5226 Fax:43

To: Quality Industrial Minerals

W/O: 15530

dil HCL 5%

D: Acid Soluble Analysis of Feldspar Sample

		A	B
Sample type		Feldspar	Feldspar
Identification		TR-1	TR-1
Lab Reference #		15530-001A	15530-001B
Analyzed by Ultrasonic Nebulization - ICP			
Method used		AquaRegia Soluble	Total
Trace Elements			
Antimony	Sb	< 4.	< 4.
Arsenic	As	< 10	< 10.
Beryllium	Be	0.56	0.64
Bismuth	Bi	< 10	< 10.
Cadmium	Cd	0.2	0.2
Chromium	Cr	133.	160.
Cobalt	Co	< 1.	< 1.
Copper	Cu	2.	2.
Lead	Pb	4.	4.
Molybdenum	Mo	< 1.	< 1.
Nickel	Ni	3.	4.
Selenium	Se	< 5.	< 5.
Thorium	Th	< 4.	< 4.
Uranium	U	< 20.	< 20
Vanadium	V	23.	35.
Zinc	Zn	7.	7.
Results in		us/s	us/s
Majors as Oxides			
Silicon	% SiO2	0.16	74.4
Aluminum	%Al2O3	1.75	14.1
Iron	%Fe2O3	0.77	0.84
Calcium	% CaO	1.22	1.71
Magnesium	% MgO	0.57	0.59
Sodium	% Na2O	0.14	6.64
Potassium	% K2O	0.072	0.30
Barium	% BaO	0.0025	0.007
Manganese	% MnO	0.020	0.023
Phosphorus	% P2O5	0.05	0.06
Strontium	% SrO	0.002	0.014
Titanium	% TiO2	0.22	0.31
Zirconium	% ZrO2	0.0005	0.009
Loss On Ignitn.	%	-	0.91
Total Oxides	%	4.97	100.0

Remnant

74.24 %
12.35 %
0.07 %
0.5 %
0.02 %
6.5 %
0.23 %

Figure D

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

WHOLE ROCK ICP ANALYSIS

Pegasus Earth Sensing Corporation File # 91-2811

4761 Cove Cliff Road, North Vancouver BC V7G 1H8 Submitted by: TED H.F. REIMCHEN

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba ppm	Sr ppm	La ppm	Zr ppm	Y ppm	Nb ppm	LOI %	SUM %
1-6	72.96	12.61	1.37	1.03	2.41	7.18	.15	.27	.10	.03	.004	58	193	7	58	9	20	2.1	100.26
3-6	76.39	11.64	1.67	.25	.69	4.35	2.39	.22	.06	.03	.002	1054	154	37	92	18	20	2.4	100.31
4-6	75.79	12.20	.99	.26	1.42	4.81	.60	.24	.08	.02	.002	294	321	17	97	19	20	3.7	100.22
4-9	77.77	11.89	.71	.13	1.03	5.96	.18	.22	.06	.01	.003	137	221	18	95	17	20	2.1	100.13
5-8	78.77	11.26	.48	.27	1.36	6.26	.07	.15	.02	.01	.005	59	116	22	91	21	20	1.5	100.20
6-8	79.13	11.07	.45	.36	1.42	5.83	.09	.14	.01	.01	.002	68	134	5	86	19	20	1.8	100.35
6-17	79.28	10.83	.49	.32	1.37	6.37	.05	.14	.01	.01	.005	61	148	38	88	19	20	1.4	100.30
~~8-7~~ 9-2	73.04	12.75	1.87	1.37	1.51	5.33	2.06	.26	.08	.02	.003	813	186	16	68	10	20	1.8	100.27
STANDARD SO-4	67.95	10.27	3.45	.89	1.59	1.32	2.04	.56	.23	.08	.007	775	184	32	287	21	20	11.4	99.99

.200 GRAM SAMPLES ARE FUSED WITH 1.2 GRAM OF LIBO2 AND ARE DISSOLVED IN 100 MLS 5% HNO3.
- SAMPLE TYPE: CUTTING

DATE RECEIVED: JUL 23 1991 **DATE REPORT MAILED:** Aug 8/91. **SIGNED BY.** C. Leong D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Figure 11

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Pegasus Earth Sensing Corporation File # 91-2811

4761 Cove Cliff Road, North Vancouver BC V7G 1H8 Submitted by: TED H.F. REIMCHEN

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
1-6	1	5	3	18	.1	5	2	179	.79	2	5	ND	4	18	.2	2	3	29	1.20	.034	8	5	.60	11	.11	3	.73	.08	.03	1
STD C	18	57	38	139	7.3	75	34	1092	4.03	42	17	7	40	53	18.8	19	17	59	.50	.094	41	60	.94	182	.10	34	1.98	.07	.15	12
3-6	2	2	3	14	.2	7	4	234	1.30	14	5	ND	3	15	.2	2	5	9	.36	.023	21	2	.16	57	.01	21	.58	.07	.07	2
RE 4-9	1	2	3	10	.1	4	1	129	.52	3	5	ND	3	28	.2	2	2	11	.52	.023	6	2	.07	31	.01	7	.45	.11	.03	1
4-6	1	3	3	23	.1	4	2	155	.75	5	5	ND	2	72	.3	2	2	16	1.03	.026	8	1	.17	37	.01	9	.75	.08	.03	1
4-9	1	3	2	10	.2	5	1	124	.49	3	5	ND	4	26	.2	2	2	12	.51	.021	6	1	.07	30	.01	5	.43	.10	.04	1
5-8	1	1	2	9	.1	14	1	95	.32	2	5	ND	2	12	.2	2	2	3	.90	.009	29	3	.17	12	.01	6	.43	.16	.02	1
6-8	1	2	2	8	.1	3	1	90	.30	2	5	ND	3	14	.2	2	2	3	.97	.011	17	2	.24	9	.01	9	.38	.10	.02	2
STD G-1	3	5	2	51	.1	14	6	566	2.09	2	5	ND	3	61	.2	2	2	37	.56	.084	9	201	.65	252	.16	2	.92	.04	.56	1
6-17	1	1	41	9	.1	9	1	94	.35	2	5	ND	3	15	.2	2	2	2	.90	.009	35	5	.21	10	.01	7	.41	.12	.02	1
~~8~~ 9-2	1	1	2	12	.1	1	2	151	1.03	2	5	ND	4	14	.2	2	2	26	.58	.038	10	4	.67	55	.11	3	1.04	.12	.07	1
STANDARD C	18	58	38	134	7.3	69	33	1049	3.99	41	21	7	39	52	18.6	15	21	55	.48	.087	38	58	.89	178	.09	34	1.97	.06	.16	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: CUTTING

DATE RECEIVED: JUL 23 1991 **DATE REPORT MAILED:** Aug 8/91. **SIGNED BY** C. Leong D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Figure F

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Pegasus Earth Sensing Corporation File # 91-2811

4761 Cove Cliff Road, North Vancouver BC V7G 1H8 Submitted by: TED H.F. REIMCHEN

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
1-6	1	3	3	18	.1	6	2	152	.64	2	5	ND	2	11	.2	2	2	17	1.04	.042	4	3	.51	10	.02	2	.55	.08	.02	1
STD C	3	45	36	98	7.0	55	29	969	2.56	20	17	4	9	46	20.0	2	16	33	.38	.097	30	30	.59	140	.01	27	1.26	.06	.08	1
3-6	1	2	2	12	.1	5	3	205	1.03	9	5	ND	2	12	.2	2	2	6	.35	.027	17	2	.13	51	.01	12	.34	.07	.05	1
RE 4-9	1	3	2	10	.1	8	1	112	.44	3	5	ND	3	13	.2	2	2	10	.47	.026	5	2	.06	27	.01	4	.27	.11	.02	1
4-6	1	1	2	20	.1	4	2	132	.60	3	5	ND	2	24	.2	2	4	13	.86	.021	6	1	.15	30	.01	5	.32	.07	.02	1
4-9	1	4	2	9	.1	6	1	112	.44	2	5	ND	2	13	.2	2	5	10	.45	.022	5	3	.06	26	.01	3	.26	.11	.02	1
5-8	1	4	2	8	.1	11	1	83	.26	2	5	ND	2	10	.2	2	2	3	.82	.010	24	3	.14	9	.01	4	.34	.15	.02	1
6-8	1	2	2	6	.1	2	1	70	.22	2	5	ND	2	12	.2	2	2	2	.83	.007	14	1	.17	7	.01	5	.25	.09	.02	1
STD G-1	1	6	2	28	.1	12	4	296	.81	2	5	ND	1	24	.2	2	2	15	.33	.075	3	141	.35	124	.06	4	.46	.03	.33	1
6-17	1	1	2	8	.1	9	1	81	.28	2	5	ND	1	13	.2	2	2	2	.76	.010	27	4	.17	8	.01	5	.30	.11	.02	1
~~8-7~~ 9-2	1	7	2	10	.1	3	2	123	.80	2	6	ND	2	8	.2	2	2	15	.40	.036	6	3	.54	44	.02	2	.79	.10	.06	1
STANDARD C	18	57	37	128	6.9	67	29	944	3.92	37	19	6	35	49	17.9	15	19	55	.43	.087	37	56	.80	171	.08	33	1.77	.05	.14	12

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 5% HCL AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: CUTTING

DATE RECEIVED: JUL 23 1991 **DATE REPORT MAILED:** Aug 8/91. **SIGNED BY** C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Figure G

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Pegasus Earth Sensing Corporation File # 91-2811

4761 Cove Cliff Road, North Vancouver BC V7G 1H8 Submitted by: TED H.F. REIMCHEN

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
1-6	3	10	5	20	.1	6	4	183	.75	4	5	ND	7	14	.2	2	4	25	1.09	.041	8	4	.59	4	.06	4	.61	.08	.02	1
STD C	13	56	11	128	.9	70	33	1072	3.73	39	25	ND	45	41	20.2	3	17	49	.48	.106	28	52	.87	2	.07	29	1.71	.06	.10	4
3-6	1	3	2	14	.1	6	4	216	1.17	13	5	ND	3	11	.2	2	3	7	.33	.025	17	4	.14	1	.01	13	.44	.07	.06	1
RE 4-9	1	2	2	10	.1	5	1	121	.47	3	5	ND	3	13	.2	2	3	10	.48	.023	5	2	.06	1	.01	4	.37	.11	.02	1
4-6	1	3	2	22	.1	4	2	147	.68	3	5	ND	2	24	.3	2	2	15	.94	.021	6	2	.16	1	.01	7	.54	.08	.02	1
4-9	1	1	2	10	.1	5	1	119	.47	2	5	ND	3	13	.2	2	5	10	.48	.022	5	2	.06	1	.01	4	.36	.11	.01	1
5-8	1	1	2	9	.1	13	1	94	.31	2	5	ND	3	11	.2	2	2	3	.89	.010	27	3	.17	1	.01	5	.40	.16	.02	1
6-8	1	1	2	8	.1	1	1	85	.28	2	5	ND	2	14	.2	2	2	2	.92	.007	16	1	.22	2	.01	8	.33	.10	.01	1
STD G-1	1	5	2	45	.1	14	6	485	1.45	2	5	ND	2	34	.2	2	2	26	.45	.075	2	109	.58	4	.14	3	.77	.04	.50	1
6-17	1	4	2	9	.1	9	1	89	.31	2	5	ND	3	14	.2	2	2	2	.80	.008	30	3	.20	2	.01	5	.35	.11	.02	1
~~8-7~~ 9-2	1	5	2	12	.1	1	2	157	1.05	2	5	ND	3	11	.2	2	2	26	.58	.034	8	6	.70	5	.11	4	1.03	.13	.06	1
STANDARD C	18	58	38	134	7.3	67	33	1049	3.99	41	21	7	39	52	18.6	15	21	55	.48	.089	38	58	.89	178	.09	34	1.97	.06	.16	12

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 5% H2SO4 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: CUTTING

DATE RECEIVED: JUL 23 1991 **DATE REPORT MAILED:** Aug 8/91. **SIGNED BY** ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Figure H

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Pegasus Earth Sensing Corporation File # 91-2811R3

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
1-6	1	2	2	17	.1	4	1	92	.30	2	5	ND	1	8	.2	2	2	8	1.02	.030	4	4	.22	9	.01	2	.30	.06	.01	1
3-6	1	2	3	14	.1	7	3	202	.61	2	5	ND	2	10	.2	2	2	5	.32	.015	17	2	.12	47	.01	5	.26	.06	.04	1
RE 4-9	1	2	2	12	.1	7	1	108	.29	2	5	ND	2	10	.2	2	2	8	.46	.016	5	3	.06	25	.01	2	.21	.08	.01	1
4-6	1	2	2	16	.1	3	2	137	.45	2	5	ND	2	18	.2	2	2	11	.88	.014	7	2	.15	29	.01	3	.26	.06	.02	1
4-9	1	2	2	11	.1	6	1	107	.28	2	5	ND	2	10	.2	2	2	8	.46	.015	5	2	.06	25	.01	2	.21	.08	.01	1
5-8	1	1	2	4	.1	14	1	67	.17	2	5	ND	2	9	.2	2	2	2	.79	.007	24	4	.08	8	.01	2	.24	.12	.01	1
6-8	1	1	2	4	.1	2	1	57	.14	2	5	ND	2	13	.2	2	2	1	.84	.005	15	2	.08	6	.01	2	.16	.08	.01	1
6-17	1	1	2	1	.1	8	1	58	.16	2	5	ND	2	12	.2	2	2	1	.72	.007	26	3	.09	7	.01	2	.18	.09	.01	1
~~8-17~~ 9-2	1	3	2	6	.1	2	1	88	.45	2	5	ND	2	6	.2	2	2	9	.33	.028	5	7	.31	46	.01	2	.64	.09	.05	1
STANDARD C	18	56	36	130	6.9	71	33	1058	4.03	41	18	7	37	54	18.7	16	18	54	.47	.092	37	60	.87	179	.09	31	1.92	.06	.15	12

ICP - .500 GRAM SAMPLE IS COLD LEACHED WITH 10 ML 5% HCL FOR 10 HOURS AGITATION.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: PULP Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 29 1991 **DATE REPORT MAILED:** Sept 6/91. **SIGNED BY** ..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Figure 1

quanta trace laboratories inc.
#21-3700 Bilmore Way, Burnaby, B.C., Canada V5G 4M1 Tel:(604)438-5227

ANALYSIS OF GEOLOGICAL SAMPLES

To: Downter Equipment Ltd
1032 Penticton Street
Vancouver, B.C.

37195 Ward Road
Abbotsford
V2S 4N4

Work order: 1505-
Completed: 05-Jun-

Attn: Mr. J.D. Lee Re: Feldspar Sample

cc: Walter Bergman, 4550 E. Hastings

Sample type	Rock
Lab Reference #	1505-000
Analyzed by Plasma Emission Spectroscopy (ICAP)	
Method used	Alkaline Fusion
Majors as Oxides	
Silicon % SiO2	72
Aluminum % Al2O3	17.8
Iron % Fe2O3	0.19 ← .15
Calcium % CaO	0.33
Magnesium % MgO	0.14
Sodium % Na2O	8.98
Potassium % K2O	0.44
Barium % BaO	0.008
Manganese % MnO	0.015
Phosphorus % P2O5	0.09
Strontium % SrO	0.011
Titanium % TiO2	0.133
Zirconium % ZrO2	0.01
Loss on Ignition	0.50
Results in	%
Total oxides	~~[illegible]~~ 99.60

Analyst: ___

DARYHE DICKSON.

.01 VERY LITTLE SULPHER

THIS INDICATE THAT THE IRON IS THERE AS OXIDE AND NOT AS SULPHIDE.

Figure J

ACME ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

WHOLE ROCK ICP ANALYSIS

A .1000 GRAM SAMPLE IS FUSED WITH .60 GRAM OF LIBO2 AND IS DISSOLVED IN 50 MLS 5% HNO3.
- SAMPLE TYPE: ROCK CHIPS

DATE RECEIVED: DEC 22 1986 DATE REPORT MAILED: Jan 7/87 ASSAYER. D. Toye ..DEAN TOYE. CERTIFIED B.C. ASSAYER.

JOHN G. PAYNE CONS. FILE # 86-4041

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba PPM	Loi %	Sum
4	77.34	11.27	2.33	.35	.77	4.20	2.30	.18	.06	.02	.01	2041	.7	99.88
20	78.43	11.40	1.28	.11	.36	4.40	2.65	.17	.01	.01	.01	1304	.9	99.95
30	77.72	12.81	.82	.14	.78	6.25	.30	.24	.03	.01	.01	597	.7	99.91
76	79.53	11.76	.84	.25	.57	6.20	.15	.15	.01	.01	.01	1025	.3	99.95
77	79.10	12.03	.65	.10	.57	6.30	.15	.15	.01	.01	.01	684	.7	99.90
132A	78.94	11.35	2.06	.09	.45	5.55	.15	.12	.01	.02	.01	1438	1.0	99.99
132B	78.62	11.77	1.68	.34	.77	5.70	.20	.10	.01	.02	.01	443	.6	99.90
188	81.72	10.88	.52	.01	.28	5.40	.10	.13	.01	.01	.01	141	.9	99.99
STD SO-4	67.75	10.17	3.43	.99	1.68	1.40	2.05	.54	.21	.07	.01	768	11.4	99.83

Figure K

SAMPLE#	Fe %
1M	3.80
8	.76
13	.77
14	1.59
16	.58
19	1.40
21	1.35
26	.43
27	1.66
28	2.15
31	.83
32	1.04
34	1.33
35	1.63
36	.92
37	1.28
38	1.79
39	2.84
43	5.55
46	1.07
47	2.27
49	1.71
50	4.80
51	3.13
60	2.12
63	.67
65	2.10
69	2.15
70	1.01
71	1.20
73	1.82
74	.95
78	.64
88	1.33
90	2.85
91	2.85
STD SO-4	2.40

Figure L

SAMPLE#	Fe %
95	.74
96	1.01
98	1.81
99	1.94
100	1.66
101	1.66
102	.81
103	.47
104	.71
108	1.73
110	1.42
115	3.21
116	.81
117	.50
120	1.00
125	3.35
134	5.44
136	1.30
138	1.89
145	.69
160	1.76
165	3.99
171	1.81
180	.37
181	1.13
182	1.33
185	1.48
186	1.03
187	1.36
189	.63
191	.56
192	.93
193	1.35
196	2.19
214	1.28
215	1.56
STD SO-4	2.38

Figure M

SAMPLE#	Fe %
217	2.32
224	2.28
226	1.02
233	1.04
238	1.99
240	1.13
243	1.65
245	1.62
247	2.10
248	1.99
249	2.03
253	1.67
255	.82
256	1.47
257	1.65
259	1.76
261	.86
264	.31
265	1.31
STD SO-4	2.40

Figure N

ACME ANALYTICAL LABORATORIES LTD.
852 E. HASTINGS, VANCOUVER B.C.
PH: (604)253-3158 COMPUTER LINE: 251-1011

DATE RECEIVED JAN 28 1987

DATE REPORTS MAILED Feb 2/

GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PULVERIZED TO -100 MESH.
FE - .10GM SAMPLE ARE FUSED WITH .66M LIBO2 AND DISSOLVED IN 50ML 5% HNO3.

ASSAYER D Toye DEAN TOYE . CERTIFIED B.C. ASSAYER

JOHN G.PAYNE CONSULTANT FILE# 87-0174 PAGE# 1

SAMPLE	Total Fe %
ROCK	.81

Figure 0

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8711116

To: PAYNE, JOHN G. CONSULTANTS

877 LILLOOETT RD.
NORTH VANCOUVER, BC
V7J 2H6

Project :
Comments:

*Page No. : 1
Tot. Pages: 1
Date : 20-FEB-87
Invoice # : I-8711116
P.O. # : NONE

SAMPLE DESCRIPTION	PREP CODE		Fe tot %
08	214	---	0.64
13	214	---	0.70
16	214	---	0.56
26	214	---	0.42
30	214	---	0.55
77	214	---	0.43
78	214	---	0.59
103	214	---	0.44
264	214	---	0.29

Figure P

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C CERTIFIED ASSAYERS

CERTIFICATION : JChristie

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8711117

To: PAYNE, JOHN G. CONSULTANTS

877 LILLOOETT RD.
NORTH VANCOUVER, BC
V7J 2H6

Project :
Comments:

*Page No. : 1
Tot. Pages: 1
Date : 24-FEB-87
Invoice # : I-8711117
P.O. # : NONE

SAMPLE DESCRIPTION	PREP CODE		Fe tot %									
266	241	208	0.56									

Figure 9

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : dChristie

CERTIFICATE OF ASSAY

Date: August 24, 1990

File: 90-0103-0758

SGS SUPERVISION SERVICES INC.
General Testing Laboratories Division
1001 East Pender Street,
Vancouver, B.C., Canada. V6A 1W2
Telephone: (604) 254-1647
Telex: 04-507514

TO: MR. JACK D. LEE
37195 Ward Road
Abbotsford, B.C.
V2S 4N4

JR 21

We hereby certify that the following are the results of assays on: ore

MARKED	~~SG~~ [illegible]	Iron Fe (%)	[illegible]
E 9 A		1.26	
E 9 B		0.24	
E 9 C		0.50	
E 9 D		0.76	
E 10		1.86	
E 12		1.09	
E 11		0.40	

* No magnetic property observed on Sample E11.

Figure R

cc. Mr. Ted Reinhardt

NOTE: REJECTS RETAINED ONE MONTH. PULPS RETAINED THREE MONTHS. ON REQUEST PULPS AND REJECTS WILL BE STORE FOR A MAXIMUM OF ONE YEAR

L. Wong
PROVINCIAL ASSAYER

APPENDIX B---DRILL LOGS AND CLAIM LOCATION

NUMBER	CLAIM LOCATION	TOTAL DEPTH
BOREHOLE 1--NICK 3		14.3 M. (47 FEET)
BOREHOLE 2--NICK 3		7.6 M. (25 FEET)
BOREHOLE 3--NICK 5		2.1 M. (7 FEET)
BOREHOLE 3a--NICK 5/6		7.3 M. (24 FEET)
BOREHOLE 4--SAMUS 2		14.6 M. (48 FEET)
BOREHOLE 5--SAMUS 1		14.6 M. (48 FEET)
BOREHOLE 6--SAMUS 3		14.6 M. (48 FEET)
BOREHOLE 7--NICK 5		7.3 M. (24 FEET)
BOREHOLE 8--NICK 5		5.6 M. (24 FEET)
BOREHOLE 9--NICK 8		7.3 M. (24 FEET)

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 13 1981 (14.3 m) 47 ft

LOCATION Sumas BORE HOLE NO. Bit #1 TOT. DEPTH 47 ft

BORE HOLE COORDINATES Nick 3 DEPTH OF CASING 0 m

TEMPERATURE 15 WEATHER Rain SURF. ELEV. m

SURFACE CONDITION Scrag + talc, logged off sample gathered in 1 gallon pails PLUNGE ϕ °

AZIMUTH ϕ °

CONTRACTOR Sparton SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary hammer w. thcyclone catcher 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	9:10	10:50
DATE					DATE	July 13	July 13

INTERVAL meters feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH meters feet	DESCRIPTION
0-3	1-1	/				"trachyandesite", latite, pale green augite & white color, at depth, blebs of Fe clinomite/os surface coating, olivine phenocrysts? fractured as but loops striking, ground shatter.
3-6	1-2	X				less Fe staining, gray to white in color, glassy groundmass - No Fe
6-9	1-3	X				
9-12	1-4	X				
12-15	1-5	X				
15-18	1-6	X		*		very glassy, phenocrysts of plagioclase, qtz, some orthoclase, rare pyroxene.
		X				
18-21	1-7	X				lt grey green augite?
21-24	1-8	X				dark green phenocrysts in glassy matrix
24-27	1-9	/				
27-30	1-10 1-11	/				phenocrysts, dark black/green hornblende? but 2 pyroxene
		X				
30-33	1-12	X				some
33-36	1-13	X				some
36-39	1-14	X				some & green phenocrysts
39-42	1-15	X				some
42-45	1-16	X				some but now grey, glassy, fewer phenocrysts of HB:
45-47	1-17	X				
					47' 14.3m.	end of hole

X full recovered

/ partial

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 13 1981

LOCATION Sumas BORE HOLE NO. # 2 TOT. DEPTH 7.6 m 25 ft

BORE HOLE COORDINATES 30m s/f #1 on Nick 3 DEPTH OF CASING ~~0~~ m

TEMPERATURE 15 WEATHER Rain SURF. ELEV. m

SURFACE CONDITION Clog and soil, logged of vegetation, sample in 1 gal pail PLUNGE ϕ °

AZIMUTH ϕ °

CONTRACTOR Sparton SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	1:30	2:20
DATE					DATE		

INTERVAL ~~meters~~ feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY		DEPTH ~~meters~~ feet	DESCRIPTION
0-4	2-1	/				white patina on rock andesite, dark green phenocrysts olivine? pyroxene porphyritic, medium green at 2', mafic inclusions, becoming lighter at 5', grey to translucent, biotite?
		X				
4-7	2-2	X				
7-10	2-3	X				
10-13	2-4	X				phenocrysts of HB
13-16	2-5	X				"
16-19	2-6	X				"
19-22	2-7	X				now yellow phenocrysts (biotite)? HB
22-25	2-8	X				some
					7.62m 25 feet	

X full recovery
/ partial

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 13 1981

LOCATION Sunny BORE HOLE NO. # 3 TOT. DEPTH 7 m (23 ft)

BORE HOLE COORDINATES Nicks DEPTH OF CASING 0 m

TEMPERATURE 13 WEATHER Rain SURF. ELEV. m

SURFACE CONDITION Crag and tail, logged of vegetation, 1 gal. soil samples PLUNGE 0 °

AZIMUTH 0 °

CONTRACTOR Sparton SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	3:05	5:00 p.m.
DATE					DATE		

INTERVAL meters feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY		DEPTH meters feet	DESCRIPTION
0-3	3-1	✓				Light colored (white), siliceous, ? Fe staining in 1/2" fir 5/6 dendritic on fractures and as blebs under lens, glassy, very fractured can't get bit to go straight
		X				
		X				
		X				
3-6	3-2	X				still some phenocrysts, glassy bit stuck in hole abandon steel in hole for later recovery
					7' 2.1m	

X full recovery

✓ partial

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 14 1981

LOCATION Sunny BORE HOLE NO. #39 TOT. DEPTH 23 m 24 ft

BORE HOLE COORDINATES 16m S. of 3. Nicks DEPTH OF CASING — 0 — m

TEMPERATURE 20 WEATHER Sunny SURF. ELEV. ____ m

SURFACE CONDITION Clay and till, logged of vegetation, 16, one meter higher elevation than 3. 1 gal. pail samples PLUNGE ϕ °

AZIMUTH 9 °

CONTRACTOR Spartan SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher, 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	9:00	10:00
DATE					DATE		

INTERVAL feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH metres	DESCRIPTION
0-3		X				Light (white) colored rock, numerous stringers of limonite, Fe blebs under lens, glassy, very fractured, magnetic grains, phenocrysts of pink orthoclase, gives pinkish fingers rock, possibly sandine? siliceous light colored, same.
3-6	3a-4	X				
6-9	3a-4a	2 pails of sample				
9-12		X				
		X				
12-15	3-5	X				
15-18	3-6	X		*		same
18-21	3-7	X				some
21-24	3-8	X			24'	some Fe flecks on grains, seems to be confined as con smear, fractured, but is given problems

X full recovery
/ partial

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 1981
LOCATION Somus BORE HOLE NO. #4 TOT. DEPTH 48 ft / 14.6 m
BORE HOLE COORDINATES Somus 2 DEPTH OF CASING 0 m
TEMPERATURE 20 WEATHER Sunny SURF. ELEV. m
SURFACE CONDITION Crag and talus, logged of vegetation, 1 gal. pail samples PLUNGE ϕ °
AZIMUTH ϕ °

CONTRACTOR Spartan SHEET 1 OF 1
DRILLER R. Lee
TYPE OF RIG TP 438
DRILLING METHOD Rotary Hammer with cyclone catcher 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	10:45	12:00
DATE					DATE		

INTERVAL ~~feet~~	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH ~~metres~~ feet	DESCRIPTION
0-1		/				soil, bit air top 1 foot.
1-4	4-1	X				pink colored dacite, limonite in fractures
		X				and on hand specimens brown + pink-orthoclase
4-7	4-2	X				phenocrysts, resembles #3 for color, black
		X				(limonite) grains, paramorphic
7-10	4-3	X				Fe rich in fractures
10-13	4-4	X				some
13-16	4-5	X				becomes less pink, more white, less
16-19	4-6	X		*		Fe brown, more black phenocrysts, now on
19-22	4-7	X				fractures only, not in or on grains
22-25	4-8	X				
25-27	4-9	/		*		some, seems fractured
27-29	4-10	/				some
29-31	4-11	/				some
31-33	4-12	/				"
33-36	4-13	X				" more pink phenocrysts
36-39	4-14	X				some
39-42	4-15	X				some
42-45	4-16	X				some, less phenos upto 9.5 mm.
45-47	4-17	X				dulls harder, less fractured. 50% of
47-48	4-18	X			48' / 14.6m	all fragments now are bone white

X full recovery
/ partial recovery

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 14 1981

LOCATION Sunus BORE HOLE NO. #5 TOT. DEPTH 48 ft 1/46 m

BORE HOLE COORDINATES Sunus 1 DEPTH OF CASING 0 m

TEMPERATURE 20 WEATHER Sunny SURF. ELEV. m

SURFACE CONDITION Crag and talus, logged of vegetation, 1gal pail samples unless noted PLUNGE ¢ °

AZIMUTH 9 °

CONTRACTOR Spartan SHEET 1 OF

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher, 2 3/4"

WATER LEVEL REFERENCE ELEVATION				
TIME				
DATE				

DRILLING	START	FINISH
TIME	12.45	03:00.
DATE		

INTERVAL meters / feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH meters / feet	DESCRIPTION
						unit #5 – best stuff
0–1		/				dulled to set bit, put collar on.
1 4	5-1	X	bag			light green white, lenomit, fracture, brown
4–7	5-2	X	bag			green specs, lenomit + K fsp. epidote / prisms
		X	"			fr clear, translucent, glassy at 16'
7–10	5-3	X	"			& leucocrat; fg dacit, cream to white w
10–13	5-4	X	"			phenocrysts of lenomit, epidote? plagio
13–16	5-5	/	"	*?		class or orthoclase, fracture at 16', poor
16–21	5-6	/	"			recovery
21–25	5-7	X	"			some no lenomit
25–28	5-8	X	"	*		some, phenocrysts of orthoclase / sanidine
28–31	5-9	X	"			some
31–34	5-10	X	"			some,
–35	5-11	/	"			pale green pyroxene
– 38	5-12	X	"			some
–41	5-13	X	"			"
–45	5-14	X	"			"
–48	5-15	X	"			dark mafic HB? phenocrysts.
					48 / 14.6m.	

X full recovery
/ partial recovery

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 14 1981

LOCATION Sonus BORE HOLE NO. #6 TOT. DEPTH 48 ft / 14.6 m

BORE HOLE COORDINATES Sonus 3 DEPTH OF CASING 0 m

TEMPERATURE 20 WEATHER sunny SURF. ELEV. m

SURFACE CONDITION Creek and trail; logged of vegetation, bagged samples PLUNGE ϕ °

AZIMUTH ϕ °

EASY #5 about 21 m. along road. rocks dipping to east.

CONTRACTOR Spartan SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Retary Hammer with cyclone catches 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	3:00	4:00 p.m.
DATE					DATE		

INTERVAL ~~metres~~ feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH metres	DESCRIPTION
0-3	6-1	X				dacite, translucent, glossy, cream to bone white, w K-fsp phenocrysts, lemonite, green pyroxene, dip 84° E, seems to be a bndry clay at 9-10', darker minerals of pyroxene or HB? lemonite coating on rock samples, plagioclase fldsp > 80%
3-6	6-2	X				
6-9	6-3	X				
		X				
		X				
9-12	6-4	X				phenocrysts of pale green pyroxene; rare lemonite
12-15	6-5	X				
15-18	6-6	X				
18-21	6-7	X				
21-24	6-8	X		*		some K-fsp phenocrysts. + lemonite, translucent glossy
24-27	6-9	X				
27-30	6-10	X				some, rare lemonite (metallic)
30-33	6-11	X				"
33-36	6-12	X				"
36-39	6-13	X				"
39-42	6-14	X				bone white, glossy, pyroxene,
42-45	6-15	X				"
44-47	6-16	X				"
47-48	6-17	X		*	48' 14.6m	"

X full recovery
/ partial

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 14 1981

LOCATION Sunny BORE HOLE NO. # 7 TOT. DEPTH 24 ~~ft~~ 7.3 m

BORE HOLE COORDINATES Nicks DEPTH OF CASING — m

TEMPERATURE 22 WEATHER Sunny SURF. ELEV. — m

SURFACE CONDITION Clay and till, logged of vegetation, near # 104, 50m in from road. Chicken Smith's Farm PLUNGE ϕ °

AZIMUTH ϕ °

CONTRACTOR Spartan SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher 2 3/4"

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	4:30	5:00pm
DATE					DATE		

INTERVAL metres feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH metres	DESCRIPTION
0-3	7-1	X				Dacite, dk to pale green phenocrysts of pyroxene/augite w numerous Remnant HB/amphibole crysts giving matrix dk brown/green color.
3-6	7-2	X				same
6-9	7-3	X				same
9-12	7-4	X				HB common, dark (s possible)
12-15	7-5	X				same
15-18	7-6	X				
18-21	7-7	X				
21-24	7-8	X			7.3m 24	

X full recovery

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 14 1981

LOCATION Sunny BORE HOLE NO. # 8 TOT. DEPTH 18.5 m ~~ft~~

BORE HOLE COORDINATES Nicks DEPTH OF CASING ____ m

TEMPERATURE 22 WEATHER Sunny SURF. ELEV. 0 m

SURFACE CONDITION Crag and tail, logged of vegetation, sample down road abse Road 104. PLUNGE ϕ °

AZIMUTH 9 °

CONTRACTOR Spartan SHEET 1 OF 1

DRILLER R. Lee

TYPE OF RIG TP 438

DRILLING METHOD Rotary Hammer with cyclone catcher, 2 3/4

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	5:00	5:45
DATE					DATE		

INTERVAL ~~meters~~ feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH ~~meters~~ feet	DESCRIPTION
0-3	8-1	X				granodiorite/diorite, w kfsp amphiboles, HB but still relatively light in color overall,
		X				some
3-6	8-2	X				"
6-9	8-3	X				"
9-12	8-4	X				"
12-15	8-5	X				"
15-18	8-6	X				"
					94' 6m	

X full recovery

FIELD LOGGING FORM

Assistant J. Reimchen

JOB NO. 211-04 RECORDED BY Ted Reimchen DATE July 1981 (J 23 m)
LOCATION Sunny BORE HOLE NO. # 9 TOT. DEPTH 24 ~~ft~~ m
BORE HOLE COORDINATES Nick B DEPTH OF CASING —o— m
TEMPERATURE 20 WEATHER sunny SURF. ELEV. ____ m
SURFACE CONDITION Crag and tuff, logged of vegetation. PLUNGE ϕ °
AZIMUTH ϕ °

CONTRACTOR Spartan SHEET 1 OF 1
DRILLER R. Lee
TYPE OF RIG TP 438
DRILLING METHOD Rotary Hammer with cyclone catcher, 2¾

WATER LEVEL REFERENCE ELEVATION					DRILLING	START	FINISH
TIME					TIME	6:00	7:30
DATE					DATE		

INTERVAL ~~metres~~ feet	SAMPLE NO.	SAMPLE TYPE	RECOVERY	Lab	DEPTH ~~metres~~ feet	DESCRIPTION
0-3	9-1	X				Dacite, porphyritic, dark coloured rock
		X				Can't see how we get a reasonable assay
3-6	9-2	X		*		on this one, lt green to gray pyrex phenocrysts, clay coatings on fractures, limonite
6-9	9-3	X				in stringers along fractures and as
9-12	9-4	X				blebs
12-15	9-5	X				
15-18	9-6	X				same
18-21	9-7	X				same
21-24	9-8	X			6m 24'	