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INITIAL ASSESSMENT OF THE TIA PROPERTY

Victoria Mining Division
Vancouver Island, B.C.

FOR

MAMMOTH GEOLOGICAL LTD.

By: R.Tim Henneberry, P.Geo.
June 15, 1995

SUMMARY

The Tia property lies within the Leech River Formation of southern Vancouver Island, a Jurassic-Cretaceous meta-sedimentary sequence. The target is "slate" for use as landscaping and decorative stone. Numerous south Island masons continue to gather "slate" from rock pits within the formation, primarily for their own use. As would be expected, little documentation of these efforts exist.

The Tia property was staked to cover an existing road ballast pit, containing a tan, rusty weathering, siltstone. The vertically dipping sediment readily breaks along convergent bedding planes in thicknesses from 1-8 cm. The stone has potential in landscaping applications and as facing stone for fireplaces.

Exploration to date consisted of preliminary prospecting and sampling. The sampling consisted of collecting two tons of random pieces and completing a marketing survey of south Island masons. The "slate" was shown to the masons and comments on color, texture and potential end uses were gathered.

As with most dimension stone properties, little actual exploration is required. The remaining program will consist of collecting a 20-50 ton sample and supplying the stone to end users (masons and landscapers) for marketing tests, namely for use on a few job sites.

The second step then involves a larger bulk sample of ± 500 tons. Again, this stone will be supplied to end users for marketing tests and for specification for job sites. The purpose is to ensure a consistent supply of stone can be obtained from the quarry site and to ensure the stone will meet (or exceed) the required specifications of end users.

Phase I	$6,843
Phase II	$31,361
TOTAL BUDGET	**$38,204**

The initial prospecting program completed on the Tia property cost $1,300.

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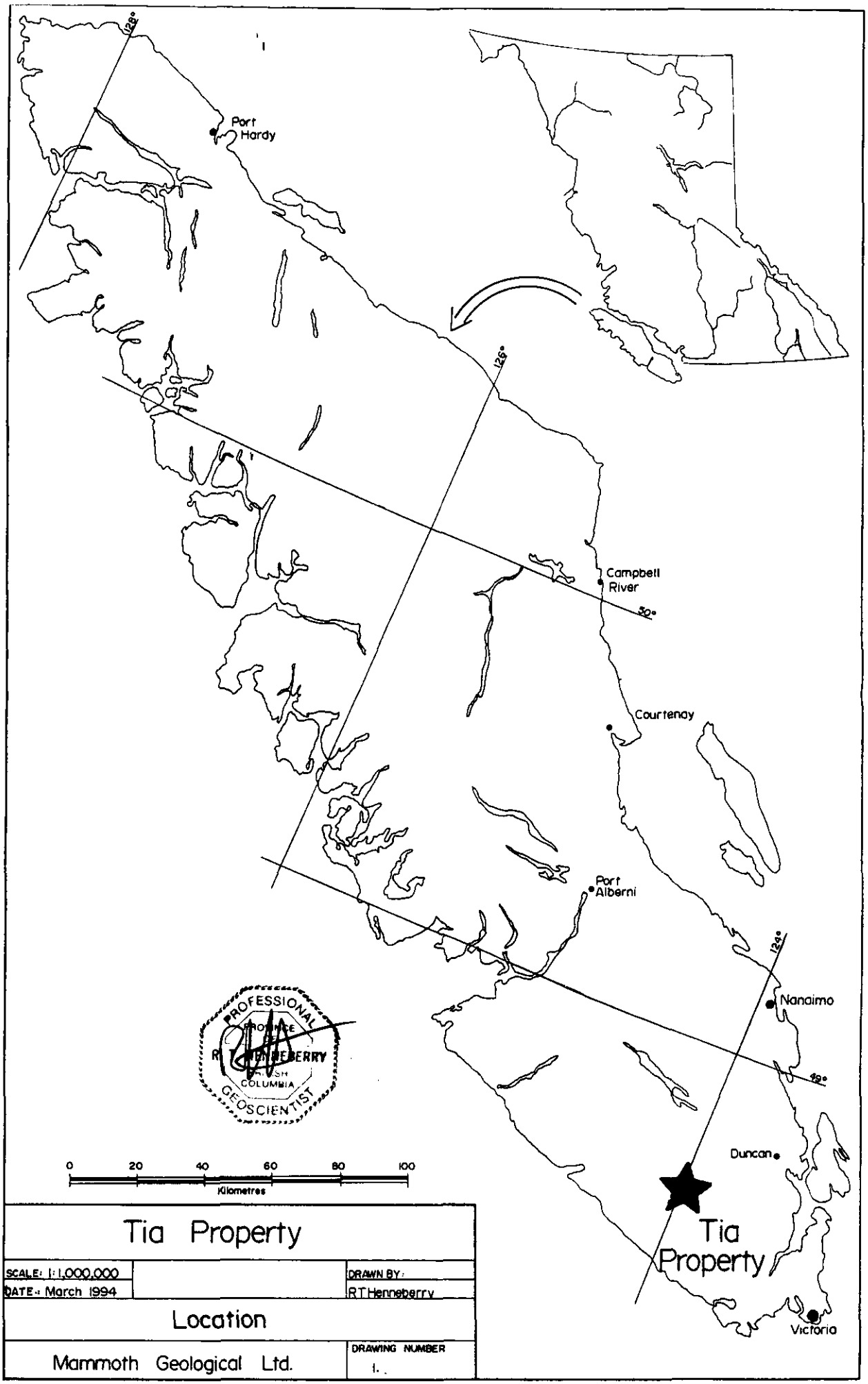
INTRODUCTION

The purpose of this report is to document the exploration completed to date on the Tia property for assessment credits. The property was examined and staked on July 6, 1994. This examination consisted of preliminary prospecting of the main showing area, an existing road ballast pit. A second day of prospecting and preliminary mapping of the main showing area was completed on May 31, 1995.

The target on this property is "slate" for use as landscaping and rough facing stone. Though the term "slate" is used throughout this report, the stone on the Tia property and in the Leech River Formation generally, is not a true slate, in the geological sense. These rocks are more accurately described as metamorphosed mudstones, siltstones and finer sandstones. Of equal importance, the Leech River Formation meta-sediments split along convergent planes as opposed to true slates, which split along parallel planes.

The "slate" potential of the Leech River Formation is well known to local masons and landscapers, but poorly documented. Numerous residences on the south Island exhibit the "slate" in use, namely as facing stone for fireplaces and chimneys, facing stone for rock walls and home foundations, and landscape stone for patios, paths and dry-stack rock walls.

Preliminary prospecting within the Leech River Formation has located additional colors, including greens and blacks. In general, these colors seem to be friable and "chippy" along edges, severely curtailing any potential application. Nevertheless, further prospecting should be undertaken to locate more competent sections, as these colors represent unrealized potential.



Tia Property

SCALE: 1:1,000,000		DRAWN BY:
DATE: March 1994		RT Henneberry

Location

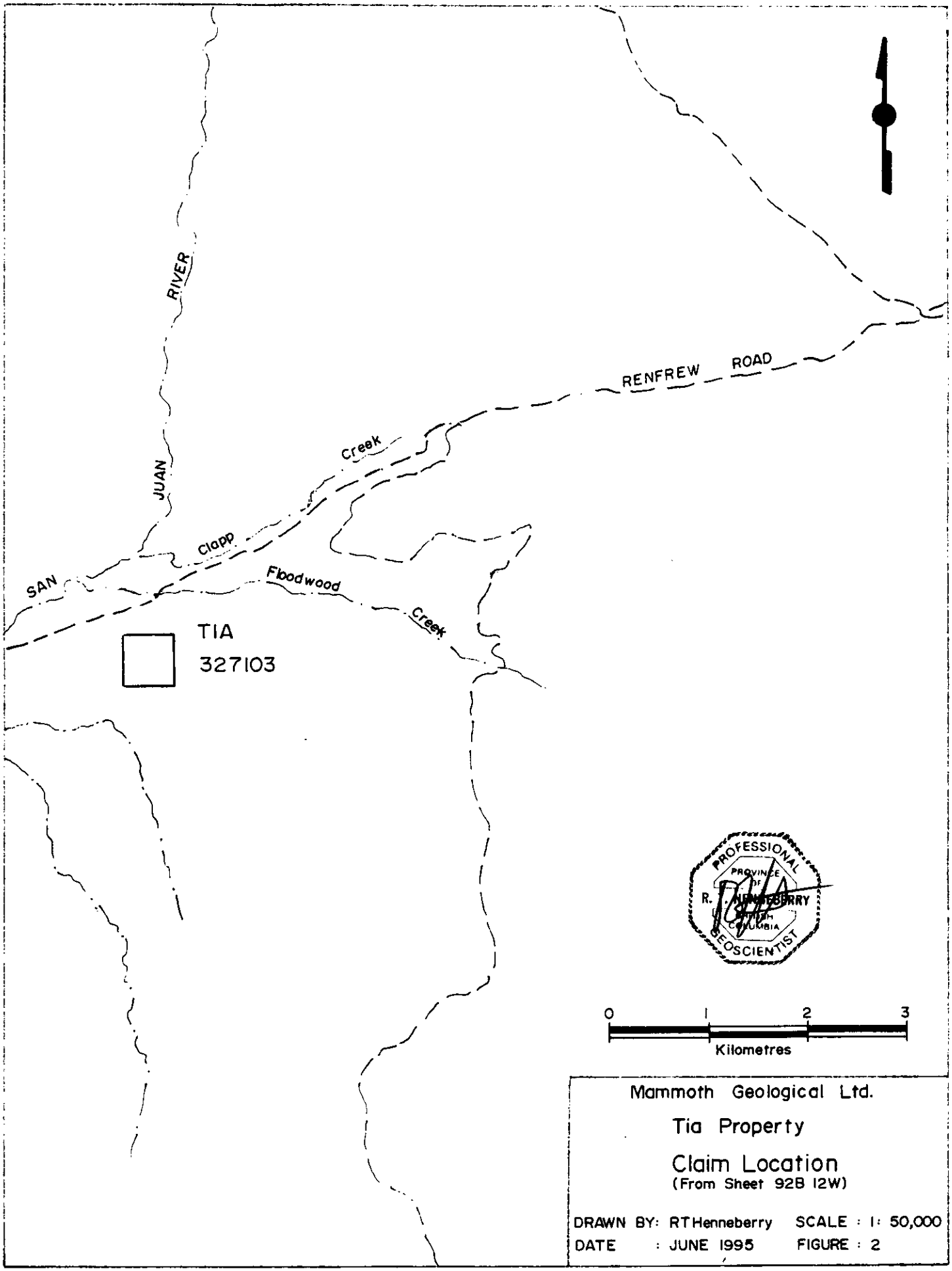
Mammoth Geological Ltd.	DRAWING NUMBER 1.

LOCATION, ACCESS

The Leech River Formation outcrops on southern Vancouver Island between the Leech and San Juan Rivers. The latitudinal boundaries are 48° 30' to 48° 35' while the longitudinal boundaries are 123° 45' and 124° 35'. Topography is quite rugged ranging from Sea Level on the west coast to 1020 metres. Access is generally fair to good as the area is transected by a myriad of logging roads, originating in Victoria, Shawnigan Lake and Lake Cowichan.

The climate on the south island is relatively mild. The summers are warm and generally dry, while the winters are cool and wet. Snow will accumulate on the higher peaks, but generally the valley bottoms and lower hills are clear for year round work. Access into the area is presently over mountain passes, limiting work to a period from May to November.

The Tia property lies on NTS Sheet 92B/12W, approximately 32 kilometres west of Shawnigan Lake. Access to the property is via SSJ Main logging road leaving Renfrew Road 32 kilometres west of Shawnigan Lake. The property lies 2 kilometres along SSJ Main. The property is covered by mature second generation forest. Elevations range from 240 to 480 metres, with the topography of the property generally considered quite steep.



Mammoth Geological Ltd.

Tia Property

Claim Location

(From Sheet 92B 12W)

DRAWN BY: RT Henneberry SCALE : 1: 50,000

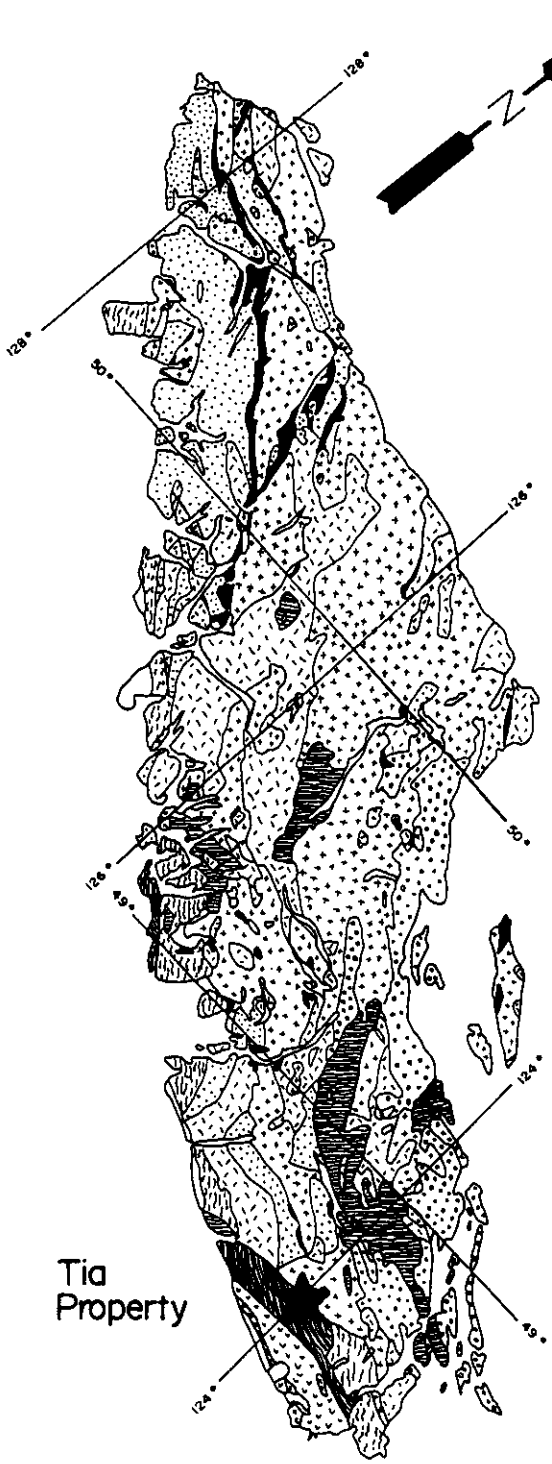
DATE : JUNE 1995 FIGURE : 2

CLAIM HOLDINGS

The Tia property consists of 1 two-post mineral claims encompassing an area 500 metres by 500 metres, including the main showing area.

Name	Record Number	Anniversary Date
Tia	327103	July 6, 1995

The registered owner is R.Tim Henneberry of Port Hardy, B.C.



LEGEND

TERTIARY

- CARMANAH GROUP
- CATFACE INTRUSIONS
- METCHOSIN VOLCANICS

LATE CRETACEOUS

- NANAIMO GROUP

EARLY JURASSIC TO EARLY CRETACEOUS

- QUEEN CHARLOTTE GROUP
  KYUQUOT GROUP
- LEECH RIVER FORMATION
  PACIFIC RIM COMPLEX
- ISLAND INTRUSIONS
- BONANZA GROUP

JURASSIC AND OLDER

- METAMORPHIC COMPLEXES

LATE AND MIDDLE TRIASSIC

VANCOUVER GROUP

- PARSON BAY FORMATION
  QUATSINO FORMATION
- KARMUTSEN FORMATION

PALEOZOIC

- SICKER GROUP

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
R. [illegible] EBERRY

KILOMETERS
0 30 60 90 120

FROM MULLER 1977 GEOLOGY OF VANCOUVER ISLAND; GSC OPEN FILE 463

GEOLOGY OF VANCOUVER ISLAND

DRAWN BY: A. STANTA	SCALE:
CHECKED BY:	DATE:
APPROVED BY:	DRAWING NO: 3

REGIONAL GEOLOGY

The geology of the south end of Vancouver Island has been described by Muller (1975, 1976, 1977). The Island lies in the Insular Belt of the Canadian Cordillera, within the Wrangellia terrane which on Vancouver Island comprises three thick volcano-sedimentary cycles (Paleozoic Sicker Group, Upper Triassic Vancouver Group and Jurassic Bonanza Group). These cycles are intruded by the Jurassic Island Intrusions and overlain by epiclastic sediments of the Jurassic-Cretaceous Leech River Formation and Upper Cretaceous Nanaimo Group. The youngest rocks in the south Island are the Tertiary Metchosin and Sooke Formations and intrusions. Typical of Vancouver Island the south Island has been heavily faulted.

The oldest rocks in the area are the Paleozoic Colquitz Gneiss and Wark Diorite, speculated by Muller (1975) to be recrystallized Sicker and also possibly Vancouver volcanics. The Paleozoic Sicker Group consists of basaltic to rhyolitic volcanics and volcaniclastic sediments overlain by epiclastic sediments and limestones. The Sicker Group defines three broad geosynclines in the south and central Vancouver Island.

The Sicker Group is overlain by the Triassic Vancouver Group, comprised of the lower Karmutsen Formation, middle Quatsino Formation and upper Parson Bay Formation. The Karmutsen Formation, the thickest and most widespread of the Vancouver Group formations, consists of basaltic pillow lavas, pillow breccias and lava flows with minor interbedded limestones, primarily in the upper part of the formation. Coeval mafic sills and dykes intrude the Sicker Group units. The Quatsino Formation Limestones and Parson Bay Formation calcareous sediments overlie the Karmutsen volcanics, though through erosion they are limited in extent on the southern Island. The one exception is the Gordon River area, where 300 metres of dark grey to black Quatsino limestones have been mapped by Muller (1976).

The Bonanza Group overlies the Vancouver Group. Bonanza Group rocks are primarily a Jurassic assemblage of interbedded lava, breccia and tuff with compositions ranging from basalt through andesite and dacite to rhyolite, deposited in a volcanic island arc environment. The Bonanza Group outcrop primarily on the west side of southern Vancouver Island.

The Westcoast Complex is a heterogeneous assemblage of amphibolite and basic migmatite with minor metasedimentary and metavolcanic rocks of greenschist metamorphic grade. The Westcoast Complex outcrops in a loosely defined belt on the west coast of Vancouver Island.

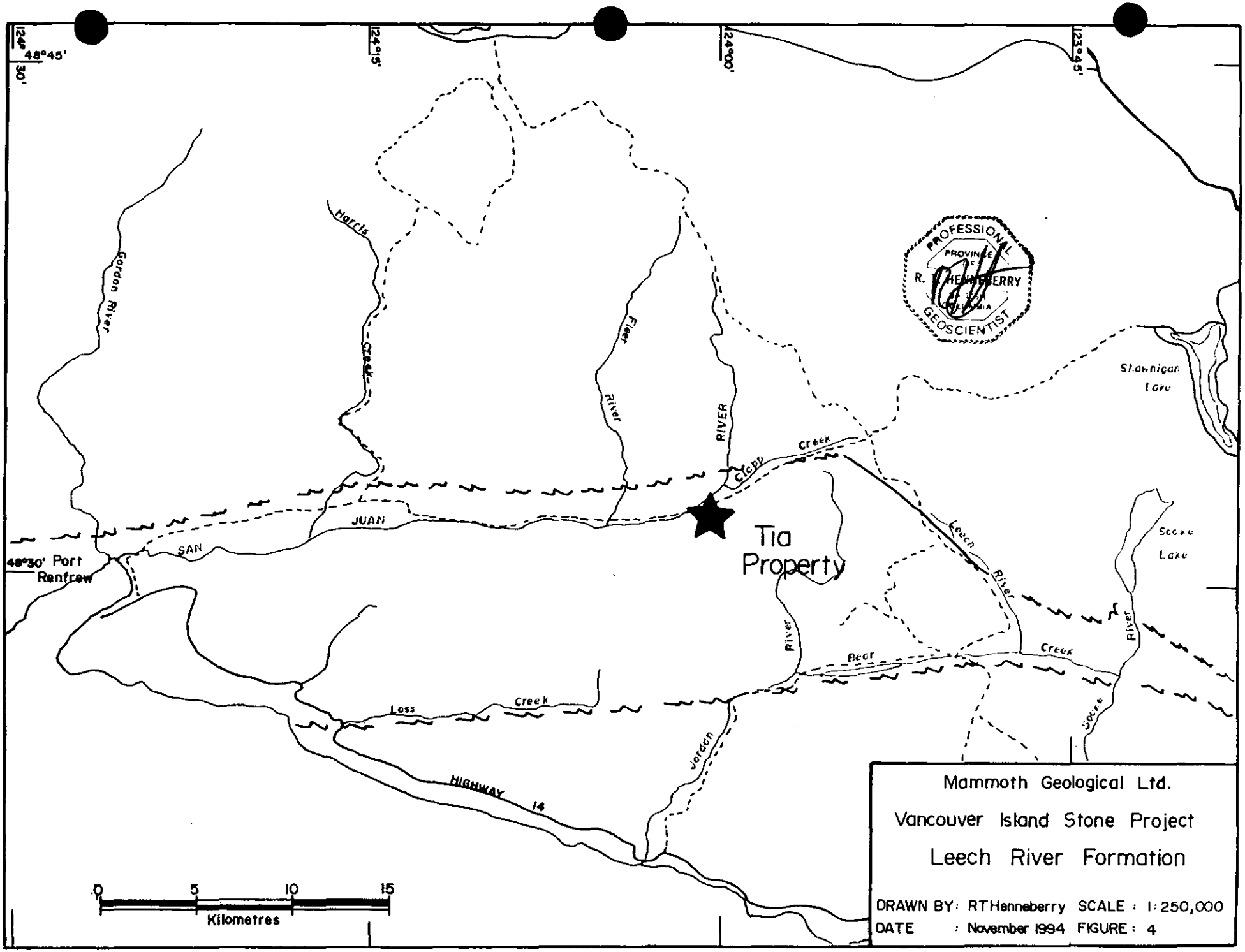
Granitoid batholiths and stocks of the Island Intrusions underlie large parts of Vancouver Island. These intrusions range in composition from quartz diorite and tonalite to granodiorite and granite. Island Intrusions outcrop in a belt through the central section of Vancouver Island.

The Leech River Formation of suspected late-Jurassic, early-Cretaceous age is exposed in a wide, eastward narrowing belt of uplands between the San Juan and Leech River Faults. The Formation consists of turbiditic greywacke-argillite sequences that have been metamorphosed to schist and slate.

The Cretaceous Nanaimo Group epiclastic sediments outcrop throughout the eastern side of south Island. The group consist of cyclical successions of sandstone, conglomerate and shale, with interbedded coal.

Eocene basic volcanics of the Metchosin volcanics and basic intrusive rocks of the Sooke Intrusions underlie the entire area south of the Leech River Fault. These units are overlain by epiclastic sediments of the Sooke Formation.

Block faulting of the crystalline and volcanic rocks is dominant. The network of faults displayed on the south end of Vancouver Island appears to be the super position of two or more fracture patterns, each with a characteristic directions and of different age and origin.


124° 48°45' 30'
124°15'
124°00'
123°45'
Gordon River
Harris Creek
Fleet River
RIVER
Clapp Creek
Stamnigan Lake
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R. T. HENNEBERRY
JUAN
SAN
48°30' Port Renfrew
Tia Property
Leech River
Sooke Lake
River
Creek
Bear
Loss
Jordan
HIGHWAY 14
0 5 10 15
Kilometres
Mammoth Geological Ltd.
Vancouver Island Stone Project
Leech River Formation
DRAWN BY: RTHenneberry SCALE : 1:250,000
DATE : November 1994 FIGURE : 4

Quatsino Formation

Quatsino limestone outcrops in the Gordon River area, south of Cowichan Lake, thinning eastward. Typically, the rock is a dark grey to black, blue grey weathering fine crystalline limestone. Where the formation is thin bedding is commonly obscure, but thick sections exhibit distinct beds of 1 to 10 cm separated by calcarenitic layers. Muller (1976) speculated this limestone was probably algal reefs with limited extent suggesting they may have been atoll-like structures or seamounts rather than the basin deposits typical of the north Island.

Matrix Marble Corporation of Duncan, B.C. is presently bulk testing these limestones for their marble potential, processing the test blocks at their Duncan plant.

Leech River Formation

The Leech River Formation is exposed in a belt, 2 to 12 kilometres wide, between San Juan and Leech River Faults. The rocks are greywacke, argillite and minor chert and volcanic rocks largely metamorphosed to schist and slate. Axial plane cleavage and rodding in the direction of fold axes are generally distinct, and their attitudes vary only gradually over large areas.

Metamorphic grade increases from phyllite in the north to garnet-biotite schist with andalusite porphyroblasts near Leech River Fault in the south.

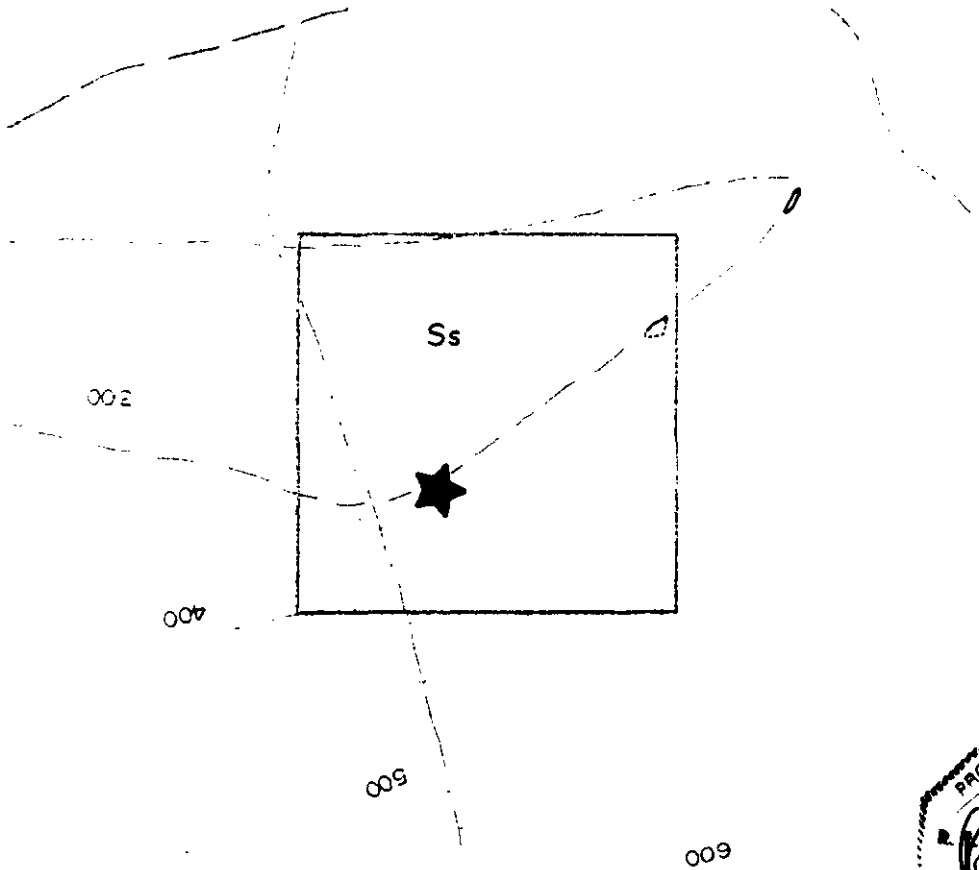
Muller (1975) stated the difference between the Sicker schists and Leech River schists is much greater consolidation, mainly by silicification in the Sicker. Sicker schists are hard, with block fracture and with smooth joint planes perpendicular to bedding and schistocity, whereas Leech River schists are platy to flaky, poorly jointed and friable.

The slates under investigation are targeted for use in low end applications, namely landscaping and fireplaces. These slates are not suitable for high end uses as gauged slates or roofing slates. The targeted low end use is a function of the nature of the Leech River deposits.

Dimensional slate should split along parallel planes in consistent thicknesses down to 1 cm. The Leech River slates are more accurately described as siltstones. Generally these stones split along convergent planes, leaving most pieces with a wedge shape in profile.

The Leech River Formation has been the source of slate for local masons since the turn of the century. Most acquired small sites for their own personal use. No records were found to indicate these slates have ever been quarried on a larger or commercial scale.

A preliminary reconnaissance of the general area identified colors ranging from black, through brown to green. The Tia property is underlain by the brown siltstone. This slate weathers a rusty brown color on fracture surfaces yielding interesting patterns on the individual pieces.



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LEGEND

Ss Siltstone

Creek

Outcrop

Quarry site

Road

20 metre contour interval

0 100 200 300 400 500
Metres

Mammoth Geological Ltd.

Tia Property

Geology

DRAWN BY : RT Henneberry SCALE : 1 : 10,000

DATE : June 1995 FIGURE : 5

PRELIMINARY PROPERTY GEOLOGY

The Tia Property is located in the northeastern section of the Leech River Formation Belt. The property lies along the steep, north-facing slope of the valley of the San Juan River. The stone outcrops in a large "pit" used as a source for road fill during construction of the logging roads.

The 1994 exploration program consisted of preliminary prospecting and mapping, concentrated primarily in the main showing area. Roughly two tons of individual slate pieces was collected for an initial marketing assessment.

Tan-Brown Siltstone

The stone of interest is best described as a schist, likely originally a siltstone. The color ranges from blue-grey to tan-brown with the brown being dominant. Weathering has penetrated well into the mass of stone along bedding-plane fractures, creating the attractive "rusting" patterns evident when the stone is actually split, especially along the eastern end of the quarry. The schist is cleaner toward the western half of the quarry. The slate itself is steeply dipping with a strike parallel to the hillside. This geology will provide a face from which the slate can easily be peeled, requiring minimum site development.

Bedding plane fracturing ranges from 5 to 15 cm. The schist can be readily split into sheets ranging in thickness from 2-5 cm (1-2 inches). The patterned schist can be readily removed in sheets up to 100 by 50 centimetres (3-5 square feet). The problem with the patterned schist is the bedding planes are not parallel, so the schist has a wedge shape in profile.

The cleaner schist can be taken out in sheets in excess of 150-200 centimetres (5-10 square feet) in thickness of 2-5 centimetres (1-2 inches). The bedding planes are more defined, allowing the stone to split more along parallel planes.

The pit itself is approximately 60 metres long by 20 metres wide, with the present face in excess of 15 metres high. There is 200-300 tons of loose material lying on the sill and against the sides of the face.

Marketing

Marketing carries almost an equal importance to geology for any industrial mineral property. The two key aspects of marketing are: acceptability of the stone in the marketplace and transportation of the stone from quarry to fabrication or job site.

The marketing assessment of the south Island "slate" is a three step process. The first step involves acquiring and prospecting a property, resulting in the identification of a potential quarry site. A few tons of "slate" is then quarried and shown to masons and landscapers, to assess the potential of the "slate".

In the next step a small amount (20 to 50 tons) of "slate", is produced. This stone is then shown to end users, namely masons and landscapers, for opinions and general comments. The most important function of this phase of the marketing is to get some of the end users to agree to try the stone on a few job sites.

The final step is to produce a small volume, ± 500 tons to be supplied to a few job sites. This will provide frank opinions of the stone and allow the initial compilation of a photo portfolio for future marketing and eventual sales. A sample of this size should allow an accurate assessment of the potential of the quarry site to produce consistent product.

The other key aspect to be completed by this time is to establish firm numbers for transportation. The "slate" will be quarried and loaded onto 1 or 2 ton pallets for shipment. Bridge load restrictions limit the amount trucked along the logging roads to 16 tonnes including the gross vehicle weight. Pallets can then be stockpiled for shipment on 46 ton super "B" trains to Island markets.

On the Tia property, step one has been completed. The initial assessment of the stone by masons and landscapers was favorable. The next step is to quarry 20 to 50 tons and have the "slate" specified on a few job sites.

DISCUSSION

The initial results from the Tia property are encouraging. The "slate" received a positive initial market assessment with favourable responses in color, texture and overall appearance. The wedge shaped nature of the individual "slate" pieces appears to be only a minor impediment to the projected end uses as rough facing and landscape stone.

The geology of the quarry site is also favourable. The vertical dip combined with the strike paralleling the hillside should facilitate simple, cost efficient quarrying, like requiring little more than a pry bar, or a small excavator at most.

As part of any future exploration effort on the property, an assessment of the Leech River Formation "slate" belt itself should be completed. The green and black "slates" both generated positive responses for color. Though the appearance and texture of these two slates is poor, there is a good possibility more competent sections could be located.

The next step of the Tia property program is to quarry 20 to 50 tons of the "slate". This stone will then be aggressively marketed to secure its use on a few job sites. The purpose of this stage is to get the stone known and used, as well as provide documentation for further marketing programs.

The final step will be to quarry approximately 500 tons of slate. The first purpose is to ensure the stone is consistent in appearance throughout the 500 tons. The second purpose is to ensure the stone will be accepted in the marketplace, before a final production decision is made.

CONCLUSIONS AND RECOMMENDATIONS

The slate located on the Tia property has potential use as both rough facing stone and landscape stone. The exploration and marketing programs completed to date have met with success, suggesting further work is warranted. A staged, two-stage exploration / marketing program is recommended.

The first stage will consist of collecting a 20-50 ton sample and supplying the stone to end users (masons and landscapers) for marketing tests, namely for use on a few job sites. The goal is to have the "slate" used on actual job sites to get both feedback on the stone and exposure for it. The cost of this phase is estimated at $6,843.

The second stage then involves a larger bulk sample of ± 500 tons. Again, this stone will be supplied to end users for marketing tests and for specification for job sites. The purpose is to ensure a consistent supply of stone can be obtained from the quarry site and to ensure the stone will meet (or exceed) the specifications of end users. This phase is estimated to cost $31,361.

Phase I	$6,843
Phase II	$31,361
TOTAL BUDGET	**$38,204**

The initial prospecting program completed on the Tia property cost $1,300.

REFERENCES

Muller,J.E. (1975). Victoria Map-Area, British Columbia (92B). Geological Survey of Canada Paper 75-1A. pp.21-26.

Muller,J.E. (1976). Cape Flattery Map-Area, British Columbia (92C). Geological Survey of Canada Paper 76-1A. pp.107-112.

Muller,J.E. (1977). Geology of Vancouver Island. Geological Survey of Canada Open File 463.

STATEMENT OF QUALIFICATIONS

I, R.Tim Henneberry, am the principle of Mammoth Geological Ltd., a geological consulting firm with offices at 9250 Carnarvon Road, Port Hardy, B.C. The mailing address is Box 5250, Port Hardy, B.C. V0N 2P0.

I earned a Bachelor of Science Degree majoring in geology from Dalhousie University, graduating in May 1980.

I have practiced my profession continuously since graduation.

I am registered with the Association of Professional Engineers and Geoscientists in the Province of British Columbia as a Professional Geoscientist. I am also a Fellow of the Geological Association of Canada.

I staked and examined the Tia property on July 6, 1994 and further examined the property on May 31, 1995. I am presently the owner of the Tia mineral claim.

I am the principle of Mammoth Geological Ltd.

This report may be used for any purpose normal to the business of Mammoth Geological Ltd., provided no part is used in such a manner to convey a meaning different than that set out in the whole.

Dated this 29 day of June in the Town of Port Hardy, British Columbia.

PROFESSIONAL ENGINEERS AND GEOSCIENTISTS PROVINCE OF BRITISH COLUMBIA R. TIM HENNEBERRY

R. Tim Henneberry, P.Geo

STATEMENT OF COST

The only costs to be applied are the actual property exploration costs, as the results of the marketing survey will remain confidential. Hence, the costs associated with the survey will not be included.

Tia Property

Exploration dates: Jul 6. May 31
Report dates: Jun 5, Jun 6

Project Manager	2 days	@	300.00 /day	$600.00
Vehicles	2 days	@	50.00 /day	$100.00
Documentation	2 days	@	300.00 /day	$600.00
Tia Property Costs				**$1,300.00**

COST ESTIMATES

Phase I - Initial Sampling (3 days)	
Quarrying Costs (Equipment)	$900
Manpower Costs (Quarrier and Helper)	$1,350
Support Costs (Room and Board, Vehicles)	$600
Market Assessment	$1,600
Documentation (Reports)	$1,500
Contingency (15%)	$892
Phase I Subtotal	**$6,843**
Phase II - Bulk Test (20 days)	
Contractor Cost (Cat or Hoe)	$2,120
Quarrying Cost (Equipment)	$10,650
Manpower Cost (Quarrier and Helper)	$9,000
Support Costs (Room and Board, Vehicles)	$4,000
Documentation (Reports)	$1,500
Contingency (15%)	$4,091
Phase II Subtotal	**$31,361**
TOTAL BUDGET FOR TIA PROPERTY	**$38,204**

SAMPLE DESCRIPTION

No samples for analysis or polished specimens were taken. The purpose of the program was to collect a sample in the range of two tons for market analysis. There were no geological studies undertaken on the collective two ton sample.