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

PROGRAM YEAR:2000/2001REPORT #:PAP 00-21NAME:ANTON NIJHUIS

## **D. TECHNICAL REPORT** (continued)



# **REPORT ON RESULTS**

- Those submitting a copy of an Assessment Report or a report of similar quality that covers all the key elements listed below are not required to fill out this section.
- Refer to Program Regulation 17D on page 6 for details before filling this section out (use extra pages if necessary)
- Supporting data must be submitted with the following TECHNICAL REPORT or any report accepted in lieu of.

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

\_Reference Number 2000/2001 P7/ Name 1. LOCATION OF PROJECT AREA [Outline clearly on accompanying maps of appropriate scale.] O  $\overline{\mathcal{Q}}$ DOC 2. PROGRAM OBJECTIVE [Include original exploration target.]

**3. PROSPECTING RESULTS** [Describe areas prospected and significant outcrops/float encountered. Mineralization must be described in terms of specific minerals and how they occur. These details must be shown on accompanying map(s) of appropriate scale; prospecting traverses should be clearly marked.]

<ul> <li>D. TECHNICAL REPORT</li> <li>One technical report to be completed for each project area.</li> <li>Refer to Program Regulations 15 to 17, pages 6 and 7.</li> <li>SUMMARY OF RESULTS</li> <li>This summary section must be filled out by all grantees, one for each project area</li> </ul>	Ministry of Energy and Mines Energy and Minerals Division Information on this form is confidential subject to the provisions of the Freedom of Information Act.
Name Reference	Number 2000/2001/P1/
LOCATION/COMMODITIES	<u> </u>
Project Area (as listed in Part A) MINFILE N	o. if applicable
Location of Project Area NTS Lat	Long
Description of Location and Access	
Prospecting Assistants(s) - give name(s) and qualifications of assistant(s) (see Program Regula	ation 13, page 6)
Main Commodities Searched For Dimension Ston-e	
Known Mineral Occurrences in Project Area Quatsino lignestone	Formation
WORK PERFORMED         1. Conventional Prospecting (area) <u>traverses</u> 2. Geological Mapping (hectares/scale) <u>100 hectares</u> 1. Conventional Prospecting (area) <u>traverses</u> 2. Geological Mapping (hectares/scale) <u>100 hectares</u> 3. Geochemical (type and no. of samples)         4. Geophysical (type and line km)         5. Physical Work (type and amount) <u>Trenching Sampling</u> 6. Drilling (no. holes, size, depth in m, total m)         7. Other (specify)	
Best Discovery Project/Claim Name Popl Commodities Dimen Location (show on map) Lat. Long E. Best assay/sample type	sion Stone. levation
Description of mineralization, host rocks, anomalies	
FEEDBACK: comments and suggestions for Prospector Assistance Program	·
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Dec 1, 2000 Anton Nijhuis 1954 Lawson Grove Campbell River BC V9W 1L3 250-923-3350

# 2000/20001 P71

Introduction and Review 2001-01-26

I attended the Cordilleran Roundup for the Prospector's Showcase and the response was very good. I brought with me a truckload of samples that were shown to several stone companies in Vancouver and have made arrangements with Quadra Stone for a large consignment shipment this spring. They were very excited over the samples and wish to do some marketing and promotion.

#### **Geological Overview**

The limestone is found in colours from black, grey, light grey to white. Being Upper Triassic in age and formed 200 million years ago. Assays of the stones were compared to similar stones that are treasured in China today. There were no differences in any of the elements. The stones contain calcite, iron oxides and sulphides. Densities of the stones are about 3.0g/cm3 darker stones are denser as they may contain iron oxides and organic material. White calcite veining and iron sulphides are believed to be from a fluid phase that filled the cracks in the rocks. Some stones possess a very desirable sheen and that is due to the microcrystalline structure of the grains.

Prospecting was done and the most desired stones contained iron oxides and calcite veining. The proximity to a heat source (volcanics) was instrumental in finding the zones were desired material occurred. The distance away from the contact zone was similar in all cases of discovery during the entire season. About 100 to 200 meters away was the ideal distance depending on bedding planes etc. Once I was in an outcropping of Quatsino limestone I would try and find the contact zone of volcanics if possible. Where Granite was involved the stone became more marbleized and less desirable as a scholar type stone.

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SAMPLE#	Si02	Al203	Fe203	MgO	CaO	Na20	к20	TiO2	P205	MnO Cr2	03 Ba	Cu	Zn	Nī Co	o Sr	Zr	Ce	Y	Nb	Sc	Ta	LOI	TOT/C	TOT/S	SUM
	%	%	%	%	%	%	%	%	%	%	% ppm	ppm	ppm p	pm ppi	n ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%
MEM 1	.64	.04	.12	.18	55.34	<.01	<.04	.02	.04	.02 <.0	01 <5	<20	24	20 <20	) 569	<10	<20	<10	<10	<1	<20	43.6	12.19	03	100.09
MEM 2	.51	.05	.07	.22	55.56	.05	<.04	<.01	.03	.02 .0	01 10	<20	23	28 <20	) 641	<10	<20	<10	<10	<1	<20	43.6	12.19	02	100.22
IRON 1	2.67	.27	78.88	.14	1.30	.01	.04	.04	.06	.06 .0	01 14	<20	36	20 <20	) 31	<10	<20	<10	<10	<1	<20	16.7	.99	94	100.19
BLACK MARBLE 1	1.41	.17	.25	.22	54.17	.04	<.04	.02	.02	.01 <.0	01 8	<20	<20	20 <20	) 679	24	73	<10	10	1	<20	43.3	12.39	<.01	99.74
DSY 1	.96	.10	.14	.14	55.19	.06	<.04	.02	<.01	.02 <.0	01 <5	<20	<20	42 <20	) 1812	<10	27	<10	<10	<1	<20	43.3	12.29	.01	100.18
RE OSY 1	.99	.08	.15	.14	55.11	.02	<.04	.03	_04	.02 <.0	01 5	<20	<20	:20 <20	) 1839	<10	<20	<10	<10	<1	<20	43.3	12.29	<.01	100.13
STANDARD SO-15/CSB	49.57	12.39	7.28	7.41	5.80	2.40	1.85	1.77	2.66	1.36 1.0	53 2034	110	240	78 23	2 <b>39</b> 1	986	47	22	25	12	<20	5.9	2.35	5.31	99.92
DATE RECEIVED	: JAN	1 3 20	1 <u>5</u> 01 <b>1</b> 0.	TOTAL SAMF Sample	C & S PLE TY PS beg	BY LE PE: RC inning	GM SA ECO. ( DCK R1 <u>3 'RE'</u>	ED:	BY LII NCLUDI C <u>Rerun</u>	BO2 FUSI ED IN TH <u>s and 'R</u> ( ( <b>9</b> /	ON, ANAI E SUM) <u>RE' are</u> / / / /	<u>Rejec</u> SIGN	3Y ICP- <u>t Reru</u> ED B3	<u>15.</u>	Г ВҮ L	p	. TOY	Έ, C.	LEONG	, J. <sup>1</sup>	WANG;	CERT	IFIED	B.C. /	ASSAYERS
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All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

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Project 1 Claims POP1 and POP2 NTS 92K4W – 126 53' 50 03' Nanaimo Mining Division Objective: To find a quantity and qual

To find a quantity and quality of dimension limestone that would be appropriate for landscape design and art design that is relative to Chinese classical gardens.

### Work done:

A series of traverses was conducted at right angles to the claim boundary every 100m for 500m long. All outcrops and were plotted using a GPS and samples taken.

A geology map was prepared defining the contact zones between igneous, metamorphic and sedimentary rocks. The limestones belong to the Quatsino formation and are in the Upper Triassic.

Trenches were hand dug to expose potential dimension stone randomly within the claims to determine the value and type of limestone at bedrock.

A definite zone of good dimension stone was found using the above methods. The proximity of the limestone to igneous rock has a bearing on the iron nodules within the rock.

Since I was searching for stone that was naturally sculptured I had to determine what and how were the shapes formed. Natural erosion is the major factor but not all limestones eroded the same within a square kilometer of each other. Not all limestones were similar in composition even though they looked the same. In order to determine differences between similar looking stones I had to cut samples with a saw and lightly polish the cut surfaces with dilute HCL. On examining the surfaces the type of limestone that produced the valued shapes were a deep black with calcite veining and inclusions of limonite throughout the matrix. There is a probability that the dark black color is due to iron and manganese. Where the limonite was almost completely eroded away, small to large holes were present in the rocks. Assay results between two differently coloured rocks showed no real significant differences in elements other than a slight increase in manganese in the darker rock.

After hand digging many trenches I discovered quantities of limonite pieces in and around the best commercially viable stones.

I surmised that in order for the limestone to be iron and manganese rich there had to be an igneous intrusion close by. By prospecting and making traverses I found basalt and andesite intrusions nearby. Probably the Karmutsen group of volcanics. At the contact zone the limestone is very dark and marbleized with many fractures. There are no inclusions or calcite veining in any of the rock near the contact. At 50 to 100 meters away from the contact zone the limestone exhibited the qualities that I was looking for. This trend would continue for another 100 meters and the limestone would slowly grade from black to grey to light grey without calcite veining and iron inclusions. After doing a large survey of the claim area by traverses and hand trenching I refined my search area by the proximity of a nearby intrusion, within 100 meters or so. Geophysical survey with a VLF would definitely outline the contact area but not necessary at this time. The northern portion of the claim area the sediments come to an end and Karmutsen volcanics are dominant for several kilometers with minor limestone outcroppings. At this contact zone at about 600 meters north of the main showings is the Karmutsen volcanics and various colors of marble ranging from white, greys to blues and blacks. The marble is coarse-grained close to the contact and gradually diminishes in grain size the further away from the zone. Some the samples taken here may be viable for marble carvers and for marble type art. There are fractures, inclusions throughout the deposit that would not be good for construction use.

Trenches were dug and samples taken in this area also. The marble is localized near the volcanics and is limited in size to 300 meters long and 30 meters wide.

Final results: An area of 200meters by 100 meters by 2 meters deep is defined containing appropriate marketable dimension stone. This translates to 40,000 cubic meters or 40,000 tonnes, with waste, damaged rocks at 25% would translate to approximately 10,000 tonnes of highly marketable material. I would envision that at least 100 tonnes would be select #1 material that markets at about \$10 US per kg. or \$10,000 per ton.

I took ten tonnes of samples by hand digging and using a come-along to drag out larger rocks with wooden rollers. 1 ton of rock was delivered to Seattle as samples and for evaluation. The sampling took about 2 weeks to complete.

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NTS 92K4W - from 126 to 126 51' From 50 00' to 50 10' Nanaimo Mining Division Objective: To continue to find similar deposits in the same Quatsino formation within the same map sheet but outside of the Pop1 and Pop2 claim boundaries.

#### Prospecting done:

The Quatsino limestone band extends about 12 kilometers long and 5 kilometers wide following the Memekay River. Conventional prospecting was done by traverses following east to west or west to east across as many areas as possible. In general traverses were run every 100 meters running east and west between 100 and 200 meter lengths. Traverses were closed by pace and compass with GPS recordings of any outcrops. Generalized mapping was done afterwards and search refinements done after initial searches were preformed to locate limestone outcroppings.

After an extensive search through out the map area no significant finds were made in the search of dimension stone. Some black marble was discovered and minor trenching was done with about 400 lbs of samples taken. The marble is interbedded with argillites, grey limestones and chert nodules. Marble occurs in layers and the layers discovered were less than a meter wide. Samples were cut and polished to highlight the matrix; even though the color is very attractive the samples were highly fractured with many inclusions. Further exploration will be done in the future time permitting. Other areas showed a generalized grey limestone with out any significant features. Samples taken home were cut with a diamond saw polished to highlight the matrix. Limestones in these areas were homogenous without any calcite veining, grey in color, fine grained and did not display any surficial improvements.

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Project 3

NTS 92K4W – 126 51' 50 07' Nanaimo Mining Division Objective: Dimension Stone

Prospecting results:

On the Westside of the Memekay is a large exposed bed of black marble that is interlayered with granite and minor volcanics. I dug several trenches exposing some very fine ebony marble but unfortunately it is only .6 of a meter thick. Samples taken home were cut with a saw and the matrix polished showing a very beautiful black marble that is fine grained much like sugar. This marble would be of high quality for artists etc. Ten traverses were made across the outcrop but the only exposed areas are the steep hillside and the road cuts. This area was staked but not recorded and I will have to restake it as soon as the weather permits it. Several hundred kilograms of samples were taken from trenches. The more significant marble is layered between granite and is only 1 meter wide. Access is excellent on a good logging road.





by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF MINES AND RESOURCES. Updated from aerial photographs 372, provided by the SURVEYS AND MAPPING BRANCH, DEPART F LANDS. FORESTS AND WATER RESOURCES. BRITISH

Routes.

00-21 pG 17.



Traverse lines across claim 500m long Forest nestone first of out in 13 trenches - Imx Im. XIm. a-trench - 10mx 30mx 2m 10 tonnes of samples b-trench - 10m X10m X4m C-trench - 10m×10m×1m. Marketable Stone

- sampled outcrops enches Legend River

20-21 pc 18

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Project 4

NTS 92F/14W UTM: 5515815 325103 Nanaimo Mining Division Objective: Dimension stone

**Results:** 

Forest cover maps showing the location of Karst areas showed an area up the Oyster River as containing karst and karrens. Access is on an old cross ditched logging road but recent surveys show new logging to be done and culverts installed across the cross ditching. After conventional prospecting was done a large karst area was discovered containing the type of dimension stone that I was looking for. Many traverses were done, with trenches dug and finally the area was staked using two claim units to secure the main showing. The overburden in the entire area is very limited and outcrops were pretty much continuous. Hand trenching that was done was removal of moss and the exposure of karrens that were evident from surface topography. Once the karrens were exposed I removed large loose pieces of bedrock exposing very delicately shaped limestone. The area that I concentrated on has been clear-cut making exploration easier.

The limestone is almost similar to the pop claims but lacks the limonite inclusions that erode out leaving the desired holes in the stones. However the shapes of the stones would do great for landscape purposes, pond edging, walls and statues. The geology is fairly similar being Quatsino limestone interbedded with Karmutsen volcanics. Once again the main showings are within 300 meters of the volcanic contact zone. About two tonnes of samples were taken; some were cut and polished to expose the matrix. The limestone displayed a good dark black color and was very fine grained. This Quatsino formation runs for several kilometers long and about a kilometer wide interspersed with Karmutsen volcanics. The further one gets away from the western contact zone the lighter the color of the limestone and less desirable the features. On the eastern contact zone several kilometers away the limestone does not exhibit the same qualities. I ran 10 long traverses about 800 meters long north to south and two hundred meters apart. Trenching and sampling was done on promising areas and with the sampling and trenching done an area was delineated at about 700 meters long 300 meters wide and about 4 meters deep. Since almost all of the rock would be usable for landscaping there is approximately 800,000 tons. I dug out trenches in a random order to try and not miss anything by being too smart. Several truckloads of samples were taken about 2 tons of material. This was cleaned up with pressure washing, wire brush and cut with a diamond saw on a bottom surface.  $\frac{4.10}{100} \frac{100}{100} \frac{$ 

The value of this material would be  $\frac{1}{kg}$  or a  $\frac{1}{000}$  tonne retail.







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Project 5

NTS 92L2W 127 00' to 127 56' 55 07' to 55 14' Nanaimo Mining Division Objective: Dimension Stone

Prospecting results: Basic prospecting was done on a very large area to pin point other areas that may be of value. Surface topography was searched for to indicate karst and karrens. Using a truck and ATV to locate all limestone outcrops I covered a lot of ground. Once outcrops were found, samples were taken and split to expose the matrix and contact zones or rock changes were looked for. Two days were spent searching the upper Artlish River system, many of the logging roads were decommissioned and access was not available to some areas that I had wished to explore at this time, lots of dead ends. The only area of interest in the upper Artlish was a small skarn outcropping that had minor mineralization in it with magnetite and hematite and some scattered pyrites. Several traverses were done in this area but the limestone was plain grey without any significant shapes or forms and the skarn was very limited in size. Even though I was looking for dimension stone any mineralization that may be economical was looked at.

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Project 6

NTS 92L3W 92L6E Nanaimo Mining Division Objective: Dimension Stone

Prospecting results:

I continued searching up the Tashish River system starting at Atluck Lake and ending up at Benson Lake. The area between is vast and I will return in the future to search more. Even though this area has been prospected over quite thoroughly it still needs further looks. I spent several days doing basic prospecting traveling on every road and side road I could find using my ATV as most roads were decommissioned. The Quatsino formation is quite large in this area I concentrated my efforts along known contact zones and facies. Several small showings were found but the extent of surficial erosion was limited to about 1 foot deep and on the edges of large outcrops. Most limestones encountered were grey in color; color was determined for fresh broken surfaces only. Areas of greater interests were already staked and in good standing. I have a portable cut off saw that I use regularly to cut samples. By cutting and polishing the cut surface I have very good idea if the rock in a certain area is worth prospecting for.





Coordinate Conversion NAN 27 to NAN 92 AVCS ST



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Project 7

NTS 92F/14W UTM: 5527601 322927 Nanaimo Mining Division Objective: Dimension stone

Results: Looking for outcroppings of Quatsino limestone I discovered a very large area of 'flaggy sandstone'. I ran several traverses by pace and compass, did some minor trenching and sampling. I staked 2 - 2 post claims in the area that had the best showing of stone. Two tons of thin flat sandstone samples were taken. Thickness varied from 1 inch to 6 inches. The sandstone is layered flat lying and the desired fracturing does not go to depth beyond 15 feet. Due to environmental factors production would be limited to about 100 tons per year. Samples that were shown to landscape suppliers were well received and small tonnages were asked for.

