



ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Geological mapping and sample analysis

TOTAL COST: \$6,757

AUTHOR(S): J. Donald Graham, P. Eng.

A handwritten signature in black ink that reads "J. Donald Graham".

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): N/A
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):

YEAR OF WORK: 2015

PROPERTY NAME: White Marble

CLAIM NAME(S) (on which work was done):

White Marble (title on. 379747)

COMMODITIES SOUGHT: limestone

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Nanaimo

NTS / BCGS: 092 L06W/092L034

LATITUDE: 50 ° 23' N

LONGITUDE: 127° 16' W

UTM Zone: 09 **EASTING:** 622700

Northing 5582600

OWNER(S): Grand Portage Resources Limited.

MAILING ADDRESS: #501 - 595 HOWE STREET
 City VANCOUVER
 Province BC
 Country CANADA
 Postal Code V6C 2T5 8740

OPERATOR(S) [who paid for the work]: J. D. Graham & Associates Ltd.

MAILING ADDRESS: 8740 Brouwer Place, Chemainus, BC. V0R 1K5

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

High purity limestone, Quatsino formation

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

EMPR ASS RPT 26648

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)	600 metres	White Marble	\$6,757
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			

General Nature of Report: Geological Mapping

Geological Mapping and Sample Analysis

Claim: White Marble, Record Number 379747

Mining Division: Nanaimo

NTS 092 L 06

Latitude 50° 23' N Longitude 127° 16' W

Owner: Grande Portage Resources Ltd.
Operator: J. D. Graham & Associates Ltd.
Author: J.D. Graham, P. Eng.

Date Submitted: October 26, 2015

Date of report: October 26, 2015

BC Geological Survey
Assessment Report
35666

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I. Introduction

The subject claim is part of a group of mainly Crown Granted claims located south of Kathleen Lake, 11 km directly east of Port Alice, BC. The property can be accessed via an industrial road (Benson Main) from Port McNeill, BC, a distance of 48 km. The road continues south of Kathleen Lake, then westerly to Port Alice. IMASCO (International Marble and Stone Company) hauls high purity limestone from their pit near Craft Creek, along this road to a loading facility located just south of the pulp met at Port Alice.

The terrain is moderately rugged, especially on the south west boundary of the claim where cliffs reach an elevation of 600 metres. The northern portion of the claim is less steep with elevations between 300 and 450 metres. The topography continues to moderate to the north on the adjacent Crown Grants. The area was logged in 1985 (approximate date) and it is now covered with a thick growth of immature coniferous trees.

The area was claimed in the 1930's when mining attention was centered on the nearby Old Sport, Coast Copper and Merry Widow properties. The Crown Granted claims surrounding the White Marble claim were controlled during the late 1950's into the 1970's by Empire Development Limited.

High purity limestone is now been mined in the area by IMASCO in a pit two kilometres to the east of the White Marble mineral claim. This claim and the surrounding crown grants contain white limestone. The potential therefore exists for development of a high purity, high brightness limestone source on the Grande Portage ground on and surrounding the White Marble claim.

An electric transmission line (2,200 kva?) crosses the Grande Portage ground approximately 300 metres north of the White Marble claim.

Figure 1, Location map



Map Center: 54.4781N 124.7082W

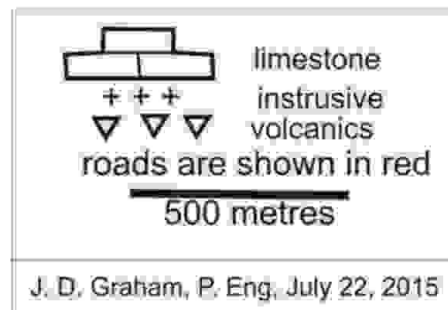
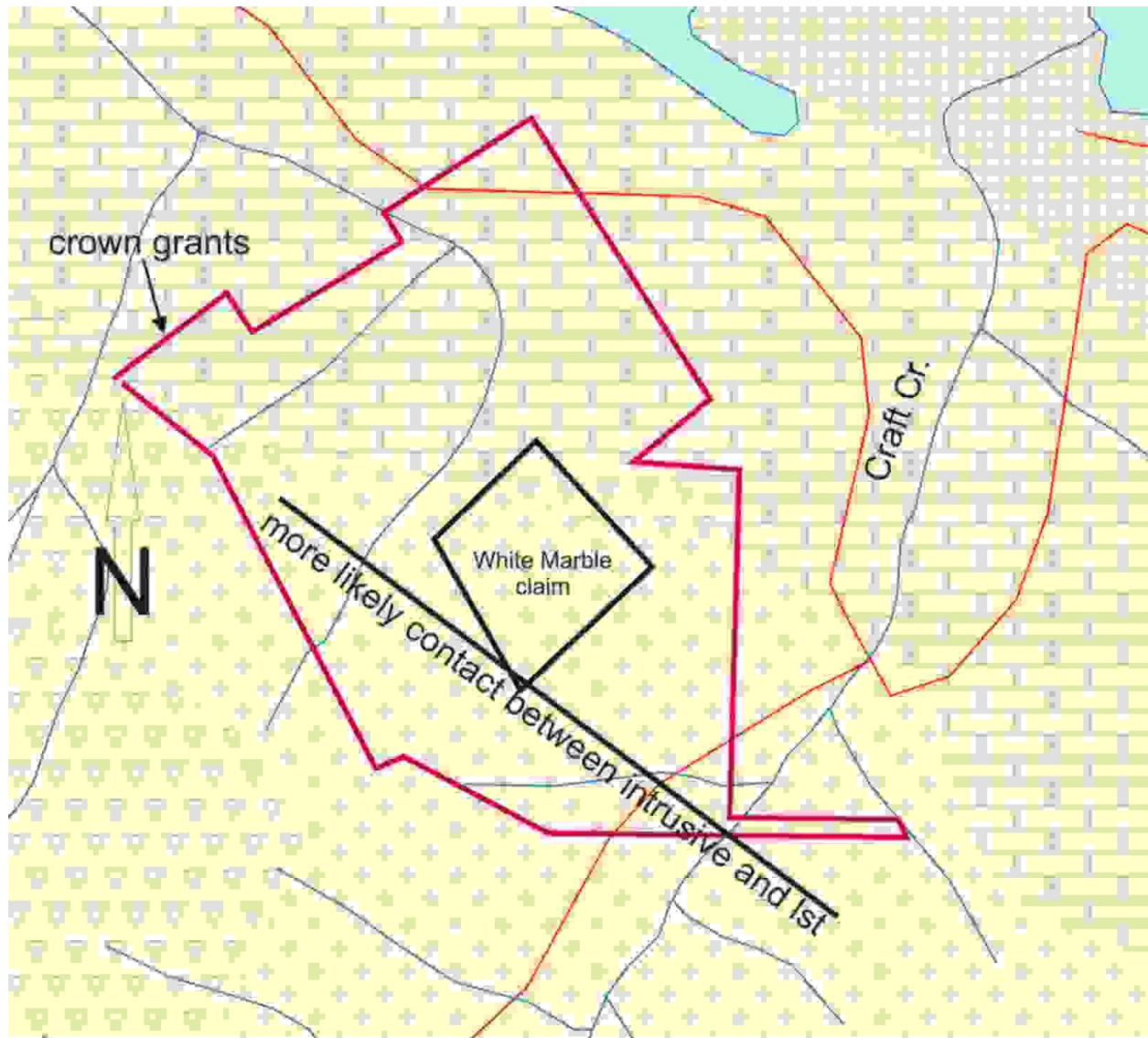
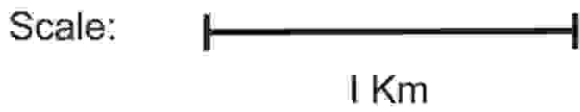
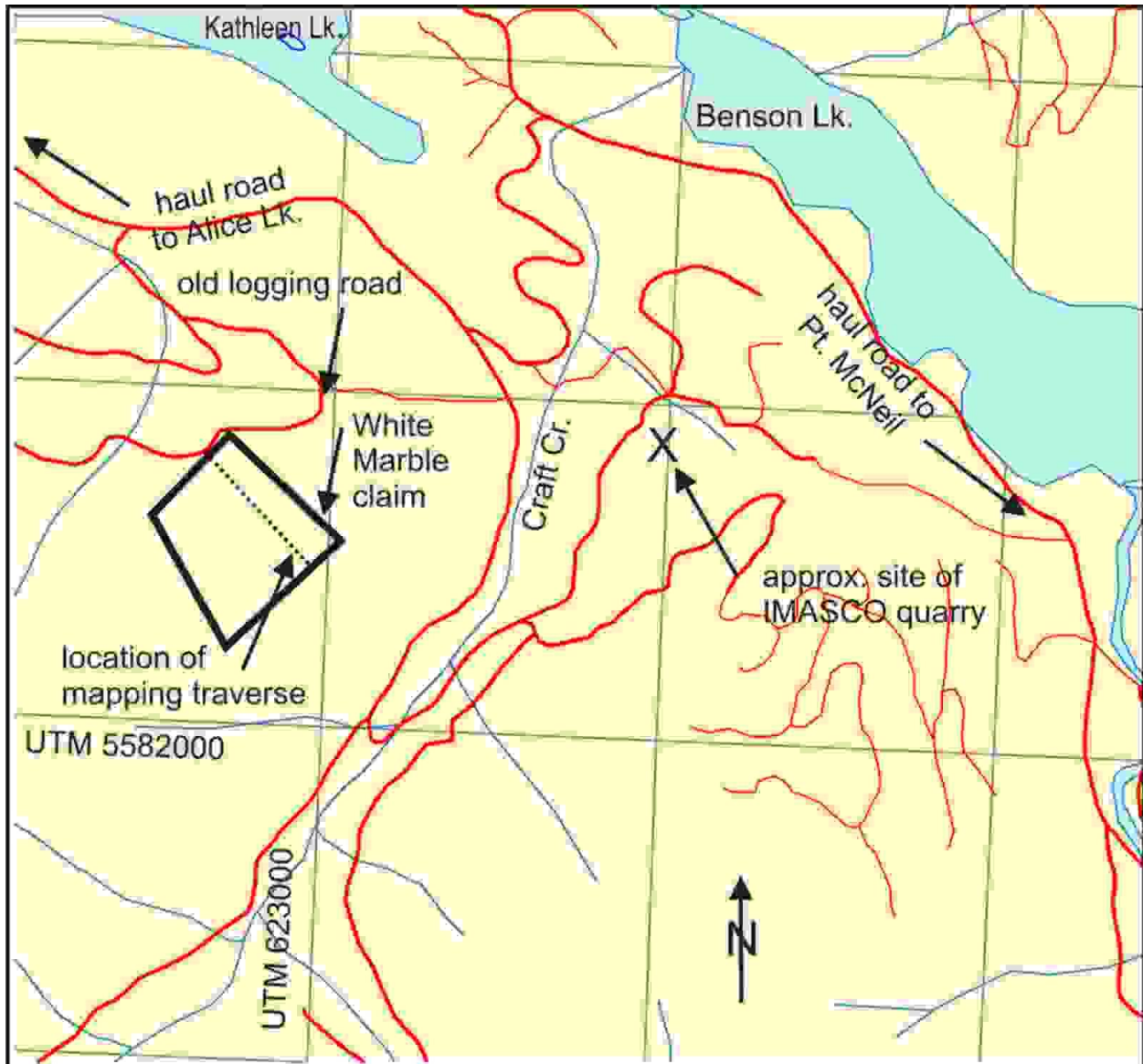


Figure 2 Geology, White Marble Property



J. D. Graham, P. Eng., August 5, 2015

Figure 3 Claim map showing local physiography

2. Detailed Technical Data and Interpretation

2.1 Objective

The objective of the mapping described in this report is to search for high whiteness crystalline limestone suitable for industrial use. Field work was done on May 6 and 7, 2015 on title no. 379747 (White Marble).

2.2.1 Geological Setting

The claim is underlain primarily by Quatsino limestone, but beds of Bonanza Volcanics are also present in the general area. Both units are occasionally cut by greenstone dykes. See Figure 2.

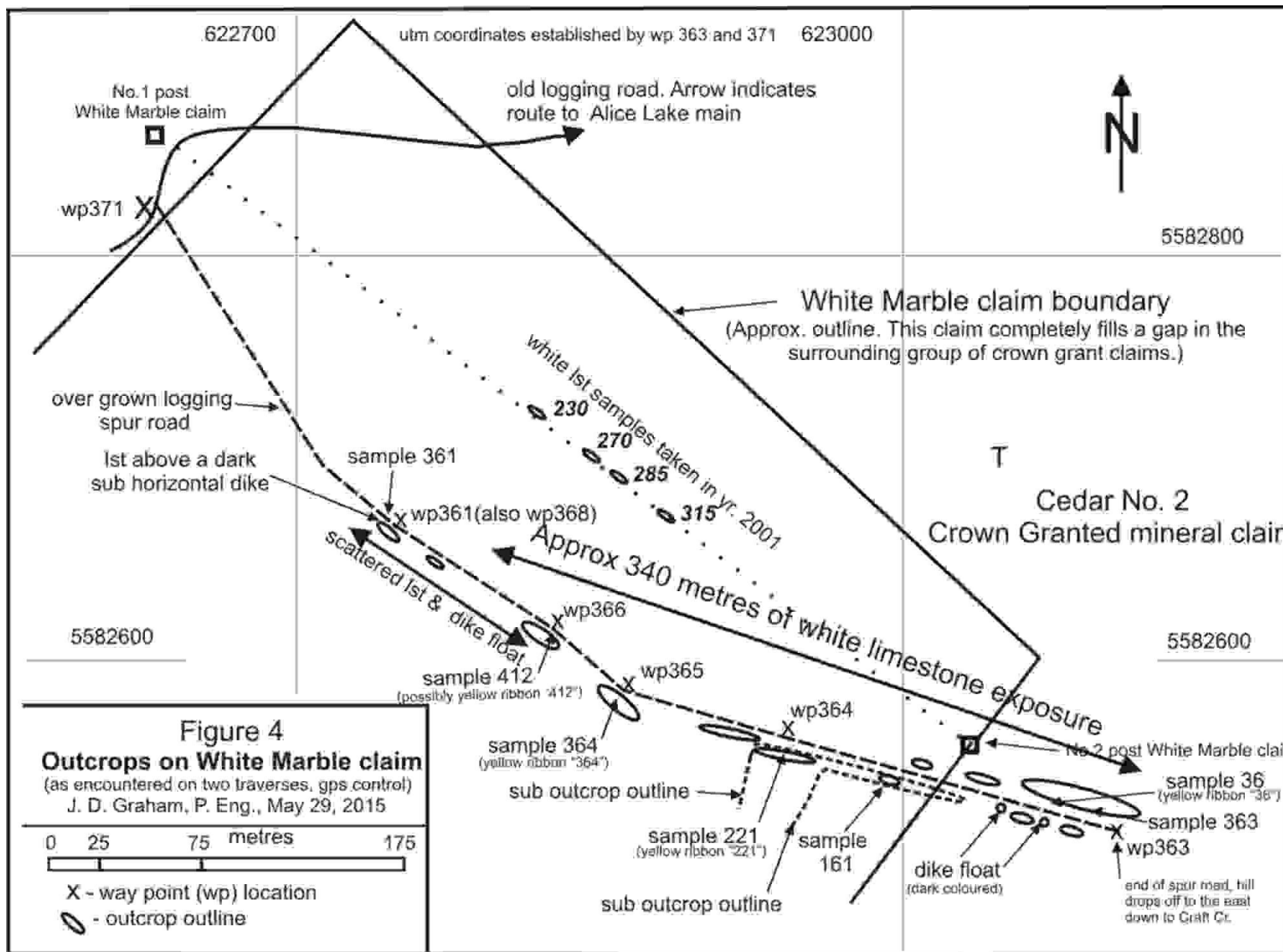
The area mapped is within the alteration front noted by COMINCO on internal company maps. This front emanates from the Coast Copper stock (diorite gabro) which is present on the southern portion of the White Marble mineral claim.

2.2.2 Area Mapped

The area mapped is a 500 metre traverse along an overgrown logging spur road. See Figure 4. This traverse is approximately 75 metres south of the mapping done in year 2000 (Assessment report 26648).

2.2.3 Lithology

Quatsino Limestone: Quatsino Limestone, the principal component of the middle Upper Triassic Quatsino Formation, is a limestone sequence 600 to 1200 metres thick. The colour of this rock type varies from white to grey. Most occurrences are fine grained and recrystallized with cleavage faces in the 0.5 to 1.0 mm. range. Cleavage faces can reach several cm. in some locations. Banding and deformation is not found but occasionally dark grey or brown lines with indistinct boundaries are noted. Bedding is not seen in the area mapped



Bonanza Volcanics: This is a late Upper Triassic formation which overlies the Quatsino Limestone. These volcanic rocks consist of massive andesitic to dacitic flows and tuffs, commonly containing feldspar phenocrysts. Bonanza volcanics were not noted in the area mapped.

Greenstone Dikes: The following description is obtained from various sources. These dikes-grained dikes are understood to intrude both the Quatsino and Bonanza formations. Feldspar phenocrysts are understood to be locally present. The dikes are similar to the Bonanza Volcanics and are difficult to differentiate from the volcanics. One dike and some dike float was noted in the area mapped.

2.2.4 Structure

Structure in the limestone was not detected in the area mapped, probably because the bedding features have been obliterated by metamorphism.

2.2.5 Results

Hand specimens were collected from the outcrops shown in Figure 4. Hand specimen descriptions are shown below. Sample locations from year 2000 work are also shown on Figure 4 to add to the understanding of limestone distribution on the claim. These year 2000 samples, plus a sample taken further north are also described below.

Descriptions of white crystalline limestone (marble) samples collected by J. D. Graham May 6, 2015 from the White Marble mineral claim. Locations shown on Figure 4

Samples shown in the list below are listed in order, starting from the most south east outcrop to the most north west outcrop. During mapping the distance along the traverse was noted by pacing, starting at the south east (wp363) and advancing towards the north west. As seen in the sample identification below,

some samples are named by the pace mark (Sample location was noted by a yellow plastic ribbon tied to a tree.). Other samples are named by the way point number.

Sample 363 (has also been referred to as sample 1) Taken at wp 363. Large outcrop. Fine to coarse grained with cleavage faces up to 4 cm. Slight grey cast seen in coarser material, finer grained specimens (3-5 mm cleavage faces) are very white, possibly best white seen on the traverse.

Sample 36 Taken at pace 36. Small weight sample. Slight grey cast, cleavage faces in the 2-3 mm range are not predominant.

Sample 161 Taken at pace 161. Small weight sample. Slight grey cast, cleavage faces in the 2-3 mm range.

Sample 221 Taken at pace 221. Large outcrop with traces of exposure extending up the hill.

Greyest sample seen on the traverse, one hand specimen contains an indistinct grey band 2 to 5 mm in thickness.

Sample 364 Taken at pace 364 which is also site of wp365. Small weight sample, very white, possibly best white seen on the traverse.

Sample 412 Taken at pace 412 which is also the site of wp366. Colour varies from white to white with a grey cast. Cleavage faces up to 8 mm.

Sample 361 Several small specimens taken at wp 361. Grey cast, cleavage faces 3-4 mm.

Samples of white crystalline limestone collected from White Marble claim in 2000, locations shown on Figure 4

Sample 230 White limestone, grain size 1 to 2 mm.

Sample 270 Very white fine grained (1 mm) limestone, showing one grey-white band 0.5 to 1 mm wide, indistinct borders.

Sample 285 Light grey, grains 1 to 2 mm., faint banding, white elongated en echelon blebs 3 mm. long.

Sample 315 White, fine grained, (0.5 to 1 mm., suggestion of banding about 3 mm. thick.

Sample collected to the north of the White Marble claim

Sample 359 Vehicle parked here, under power line. Location UTM 623068, 5582992 (beyond north boundary of Figure 4.). white, slight grey cast, cleavage faces 2 to 3 mm.

Analysis of hand specimen #363

Table 1

SG31541

Grab Rock Sample	RDTS0002788614	
Product / Sample Info	Rock Samples Sample #363 - Grab Rock Sample	
Sample Date	07/02/2015	
Acid Insol Fraction	0.75N HCL	
Acid Insol	%	1.33
Brightness (DC)270	Thru 270	
Rx	%	93.9
Ry	%	93.5
Rz	%	92.2
R457 TAPPI	%	92.3
Yellowness Index		1.8

XRF Analysis	2 Fluxy	
CaO	%	52.00
MgO	%	4.11
Al ₂ O ₃	%	0.03
Fe ₂ O ₃	%	0.02
SiO ₂	%	0.88
K ₂ O	%	<0.01
LOI	%	43.02

Note: This analysis was conducted as a courtesy in the laboratory of a major industrial minerals producer which has requested that their name not be disclosed.

3. Conclusions and Recommendations:

High whiteness crystalline limestone suitable for industrial use is present on the White Marble claim, as shown by the analysis of hand specimen #363. The area along the traverse described in this report contains outcrops which appear to be of a similar qualities. These outcrops extend for approximately 340 metres along the traverse. Mapping and sampling should be carried out on a grid to determine the extent and quality of this material.

4. References

1. Maps in possession of Grande Portage Resources Ltd., obtained from the files of COMINCO, Equinox Resources Ltd. and Empire Development limited.
2. Muller, J. E. , Northcote, K. E., Carlisle, D., 1974: Geology and Mineral Deposits of Alert-Cape Scott Map Area Vancouver Island, British Columbia. G. S. C. Paper 74-8.
3. Assessment Report 26648.

Itemized Cost Statement

1. April 20 to May 4, 2015 J. D. Graham, P. Eng., prepare working maps, arrangements for field assistant and accommodation	\$810.
2. May 5 and May 8, Travel time, J. D. Graham, P. Eng..	\$900
Travel expenses	\$347
3. May 6 and May 7, J. D. Graham, P. Eng. Map White Marble traverse and collect samples	\$1,980
4. May 9 to August 5, 2015. J. D. Graham, P. Eng. Examine and describe samples, arrange for and ship sample for analysis, map preparation and report writing	\$2205
5. Field assistant, Mr. John Dureen, Port Alice, BC	\$200
6. Value of analysis of sample #363	\$235
Total	<u>\$6,677</u>

Author's Qualifications

I, John Donald Graham, certify that:

1. I am a graduate of the University of British Columbia, holding the following degrees granted by UBC: B. Appl. Sc., Geological Engineering, and M. Appl. Sc., Mining Engineering, and
2. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, and
3. I have practiced my profession continuously since 1964 holding various positions, including title of Chief Mine Engineer, at Lornex Mining Corporation and have managed Canadian and International mining exploration companies.