Mineral Resources Tasmania

Mineralogical/Petrology Report

LJN2018-149
LJN2017-039

MINERAL ANALYSES, LITTLE PLAINS QUARRY

An unpublished Mineral Resources Tasmania Report for:

R Bottrill

By: R.S. Bottrill, R Woolleyn

Date: 26/3/2020

Department of Infrastructure, Energy and Resources
Mineral Resources Tasmania

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SUMMARY

The zeolite in the basalt comprises mostly natrolite with lesser thomsonite, and in places has a coating of apophyllite and saponite.

INTRODUCTION

Two samples wer collected by R Bottrill and were submitted for mineralogical analysis by XRD in the MRT laboratories, Rosny Park; details are listed in table 1 below.

TABLE 1: SAMPLE DETAILS.

Reg. No	Location	Description
G407389	Little Plains Qy	Fibrous white zeolite
G407997	Little Plains Qy	Natrolite with apophyllite

The samples were examined by XRD (powder X-ray diffraction) and lower power stereomicroscopy in the MRT petrology laboratories, Rosny Park.

DESCRIPTION

The sample G407389 contains fibrous white zeolites to about 10mm long, partly filling vesicles in fine grained black Tertiary basalt (Fig. 1). Some of the natrolite sample (eg. G407997) contain loose aggregates of white to colourless apophyllite in short prismatic tetragonal crystals to about 1mm in length (Fig. 2).

Fig. 1 Zeolite on basalt, FOV about 80mm.

Fig. 2. Aggregates of white crystalline apophyllite plus white saponite, on fibrous natrolite, on basalt, FOV about 30mm.

XRD

The samples were prepared, examined and analysed in the MRT laboratories, Rosny Park, Tasmania. They were run on an automated Philips X-Ray diffractometer system: PW 1729 generator, PW 1050 goniometer and PW 1710 microprocessor with nickel-filtered copper radiation at 40kV/30mA, a graphite monochromator (PW1752), sample spinner and a proportional detector (sealed gas-filled PW1711). The PW1710 system is presently driven by the CSIRO XRD software: "PW1710 for Windows" and "XPLOT for Windows".

RESULTS AND DISCUSSION

The XRD (X-Ray Diffraction) analyses (Appendix 1) indicate that the fibrous zeolite comprises mostly natrolite with lesser thompsonite. The fine grained overgrowths on G407997 are apophyllite and saponite.

R.S. Bottrill
MINERALOGIST/PETROLOGIST

R.N. Woolley
TECHNICAL OFFICER

Disclaimers

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Appendix 1: XRD Analysis Report

Client: R. Bottrill
Sample Source: Little Plains Quarry
MRT Job Number: LJN2017/039
Analysis: Approximate Mineralogy
Method: X-Ray Diffraction

Results:

Sample	Minerals Identified
G407389 (needles)	major Natrolite, minor Thomsonite

Peak overlap may interfere with identifications and quantitative calculations.
Amorphous minerals and minerals present in trace amounts may not be detected.

Analyst: R.N. Woolley
Date: 4 May 2017

Client: R. Bottrill
Sample Source: Little Plains Quarry
MRT Job Number: LJN2018-149
Analysis: Approximate Mineralogy
Method: X-Ray Diffraction

Results:

Sample	Minerals Identified
G407997	Apophyllite and saponite

Peak overlap may interfere with identifications and quantitative calculations.
Amorphous minerals and minerals present in trace amounts may not be detected.

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Analyst: R.S. Bottrill
Date: 15/5/2018