

Mineral Resources Tasmania

Laboratory Report

LJN2020-020

MINERALOGICAL ANALYSES, BLINKING BILLY PT, SANDY BAY



An unpublished Mineral
Resources Tasmania Report for:

R Bottrill

By: R S Bottrill & T Coyte

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SUMMARY

A sample from one of the siliceous dykes at Blinking Billy Point, Sandy Bay was analysed mineralogically and found to contain opal, quartz, calcite and goethite.

INTRODUCTION

Several dykes of siliceous rock cut the basalt at Blinking Billy Point, Sandy Bay (Fig. 1). A loose sample of this material was submitted for analysis to determine its mineralogy (details in Table 1).

Table 1. Sample details

MRT Reg. No.	Location	Sample Description
G409319	Blinking Billy Pt	Siliceous vein in basalt



Figure 1: Siliceous dyke in basalt Sandy Bay, FOV (field of view) ~3m.

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PROCESS

To determine the mineralogy of the rock, some representative parts of the material were crushed and analysed by X-ray Diffraction (XRD) in the Mineral Resources Tasmania (MRT) Laboratories, Rosny Park and Mornington.

DESCRIPTION

In hand specimen, the sample G409319 consists of a silica-cemented breccia from white to pale brown in colour. Siliceous rock fragments, mostly white, are up to 30 mm in size, and is in a pale brown, siliceous matrix, with a few white patches of probable calcite. There are no identifiable primary minerals or rock fragments visible.



Figure 2: Sample G409319, Opaline breccia, Plain light, FOV (field of view) ~100mm.

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Figure 3: Sample G409319, Opaline breccia, Plain light, FOV (field of view) ~100mm.

XRD ANALYSES

The samples were prepared, examined and analysed in the MRT laboratories, Rosny Park, Tasmania. They were run on a Rigaku Miniflex 600 X-Ray Diffractometer system: a 600W generator 150mm goniometer with a Cu tube; 40kV/15mA, sample spinner and a Scintillation counter (SC) with Be window, -3° to 145° 2θ scanning range and 2° - 145° 2θ measuring range, with a scanning speed of 0.01 to 100°/min, a graphite counter monochromator and a K β Ni- filter. The analysis software used is the PDXL2 using the ICCD database.

The results are shown in Appendix 1.

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DISCUSSION AND CONCLUSIONS

The XRD indicates mostly opal (probably Opal-A), plus quartz, calcite and goethite. The origin of the veins is enigmatic, they do not appear to be altered igneous dykes. Presumably they are due to heated ground-waters entering small fault zones in the basalt, shortly after its deposition, and replacing some of the fragmental basaltic clasts in them?

R.S. Bottrill

MINERALOGIST/PETROLOGIST

T Coyte

LABORATORY ASSISTANT

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Appendix 1: XRD Analyses

Client: R Bottrill

Sample Source: Blinking Billy Pt, Sandy Bay

MRT Job Number: LJN2020-020

Analysis: Approximate Mineralogy

Method: X-Ray Diffraction

Analysis Results – G409319

General information

Analysis date	2020/03/5	XRD	Rigaku Miniflex 600
Job Number	LJN2020-020		
Sample ID	G409319	Operator:	T.Coyte
Comment:	RIR Method		

Analysis results

Phase name	Content %	Formula
Opal	76(±10)	SiO ₂ xH ₂ O
Calcite	12(±4)	CaCO ₃
Quartz	6(±3)	SiO ₂
Goethite	6(±3)	Fe ⁺³ O(OH)

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

Phase data pattern

