National Argon Map: an AuScope Initiative
$^{40}Ar/^{39}Ar$ Geochronology Laboratory Sample Submission Form

This form must be completed and returned to Marnie Forster (Marnie.Forster@anu.edu.au) before any work can be commenced in the Argon Laboratories.

Person submitting samples: Ian T Graham
Affiliation: UNSW Sydney
Project Title: Geology, Petrology and Gem Minerals of the Anakie Gemfields, central Queensland
Sample Number(s) (including IGSN if one exists): BL-R1
Mineral separation required? Yes or No: **No**
Date submitted:

GEOGRAPHIC AREA/ PROVINCE/ BASIN : Drummond Basin	
1:250k SHEET NAME: Emerald	**NUMBER:** SE-55-15
1:100k SHEET NAME: Zig Zag	**NUMBER: 8351**
LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94) GDA-94	
ZONE: 55	
EASTING: 147.29237E	**NORTHING:** 23.53890S
LATITUDE:	**LONGITUDE:**

STRATIGRAPHIC UNIT FORMAL NAME *:
STRATIGRAPHIC UNIT INFORMAL NAME: Billaboo Volcanics
LITHOLOGY: Rhyolite

DRILLHOLE ID (if applicable):
PROSPECT (if applicable):
DEPTH FROM (metres):
DEPTH TO (metres):

* Stratigraphic Unit names can be searched and checked within the Australian Stratigraphic Units Database via the following link: https://asud.ga.gov.au/

Dating Objective

What is the geological question $^{40}Ar/^{39}Ar$ analysis will address? The volcanic edifice on Billaboo property consists of rhyolite domes and flows, diorite plugs, basalt flows, lamprophyre and volcaniclastic rocks. Age-dating of a basalt, lamprophyre and rhyolite will indicate both the timing of different volcanic events and the relationship of these to broader-scale magmatic and tectonic events.

What type of age(s) are expected? (e.g. magmatic crystallisation, metamorphism, fluid alteration/mineralisation, cooling, shearing etc): Magmatic crystallisation.

Mineral target(s) for dating: NONE (whole rock).

Estimated $^{40}Ar/^{39}Ar$ age (e.g. Cenozoic, Mesozoic, Paleozoic, Proterozoic, Archean – provide estimated numerical age range if possible): The age is expected to be in the Paleogene Period of the Cenozoic.

Sample Information

Location description (e.g. a sample of x was collected from y, z km from abc town): In the Drummond Ramnge, 44.4km SW of Rubyvale.

Lithological characteristics (rock description): Cream coloured fine grained rhyolite displaying a flow-banded texture in parts of the outcrop.

Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology): The volcanic edifice intrudes upper Devonian to lower Carboniferous sedimentary rocks of the Drummond Basin.

Thin section description (if available): Sample is currently being thin-sectioned..

Photograph(s) e.g. field site, hand-specimen, photomicrograph:

Relevant bibliographic references: