

# National Argon Map: an AuScope Initiative

## <sup>40</sup>Ar/<sup>39</sup>Ar Geochronology Laboratory Sample Submission Form

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

<b>Person submitting samples:</b> Joan Esterle
<b>Affiliation:</b> SCHOOL OF EARTH AND ENVIRONMENTAL SCIENCES, UNI QLD
<b>Project Title:</b> STRATIGRAPHY AND MINERALOGY OF CENOZOIC SEDIMENTS OVERLYING THE MORANBAH AND RANGAL COAL MEASURES
<b>Sample Number(s) (including IGSN if one exists):</b> DDG275: 34.22-34.38
<b>Mineral separation required? Yes or No:</b> YES
<b>Date submitted:</b> TBA

<b>GEOGRAPHIC AREA/ PROVINCE/ BASIN :</b> CENTRAL QUEENSLAND; BOWEN BASIN (EMERALD; DUARINGA)	
<b>1:250k SHEET NAME:</b> BOWEN BASIN REGIONAL	<b>NUMBER:</b>
<b>1:100k SHEET NAME:</b> HARRYBRANDT	<b>NUMBER:</b> 8554
<b>LOCATION METHOD: (GPS: WGS84 / AGD66 / AGD84 / GDA94)</b> WGS84	
<b>ZONE:</b> 55	
<b>EASTING:</b> 605595.1	<b>NORTHING:</b> 7570214.57
<b>LATITUDE:</b> 21.969335418° S	<b>LONGITUDE:</b> 148.022742584° E

<b>STRATIGRAPHIC UNIT FORMAL NAME *:</b> SUTTOR FORMATION
<b>STRATIGRAPHIC UNIT INFORMAL NAME:</b> Basalt
<b>LITHOLOGY:</b> Basalt

<b>DRILLHOLE ID (if applicable):</b> DDG275
<b>PROSPECT (if applicable):</b> GROSVENOR COAL MINE
<b>DEPTH FROM (metres):</b> 34.22
<b>DEPTH TO (metres):</b> 34.38

\* 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 <sup>40</sup>Ar/<sup>39</sup>Ar analysis will address?**

The timing of basalt flows by absolute age dating to determine age of basalt flows in sequences

**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:** pyroxenes, plagioclase, maybe biotite.

**Estimated <sup>40</sup>Ar/<sup>39</sup>Ar age (e.g. Cenozoic, Mesozoic, Paleozoic, Proterozoic, Archean – provide estimated numerical age range if possible):** Cenozoic

### Sample Information

**Location description (e.g. a sample of x was collected from y, z km from abc town):**

At Grosvenor coal mine

**Lithological characteristics (rock description):**

Aphanitic basalt, fresh, medium grey, strong rock, quartzitic, nodules, gradational basalcontact.

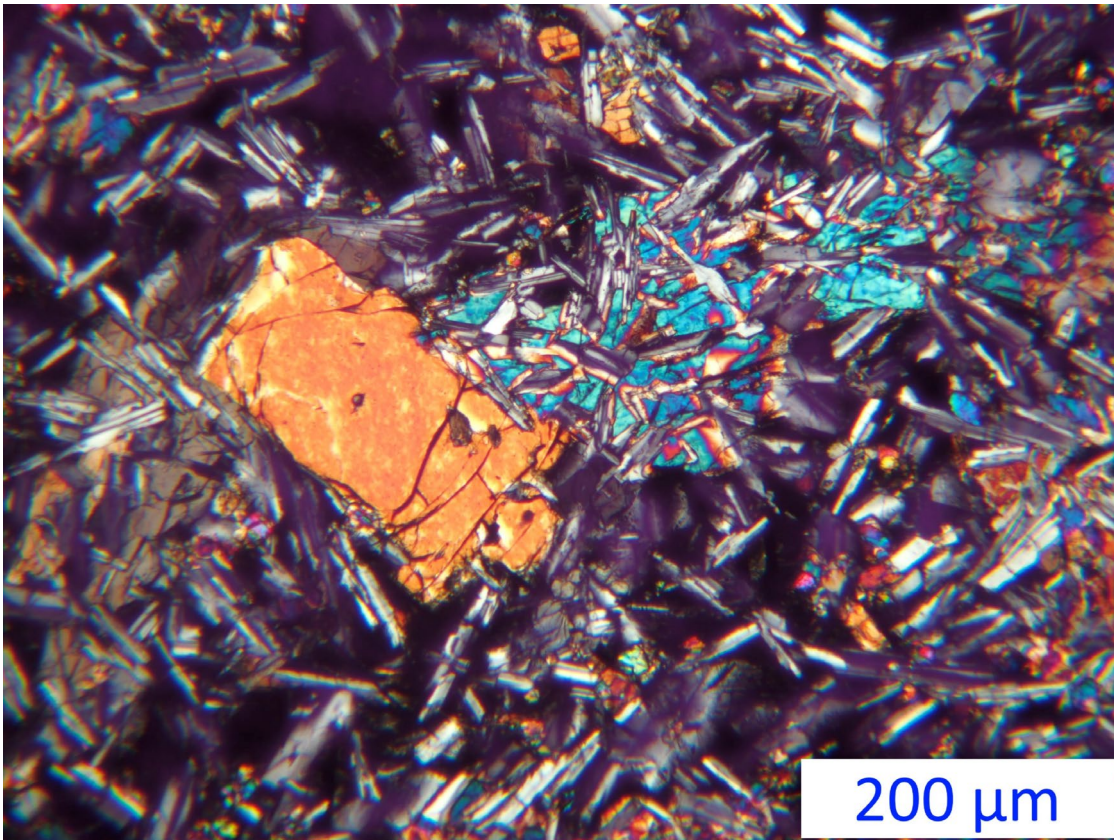
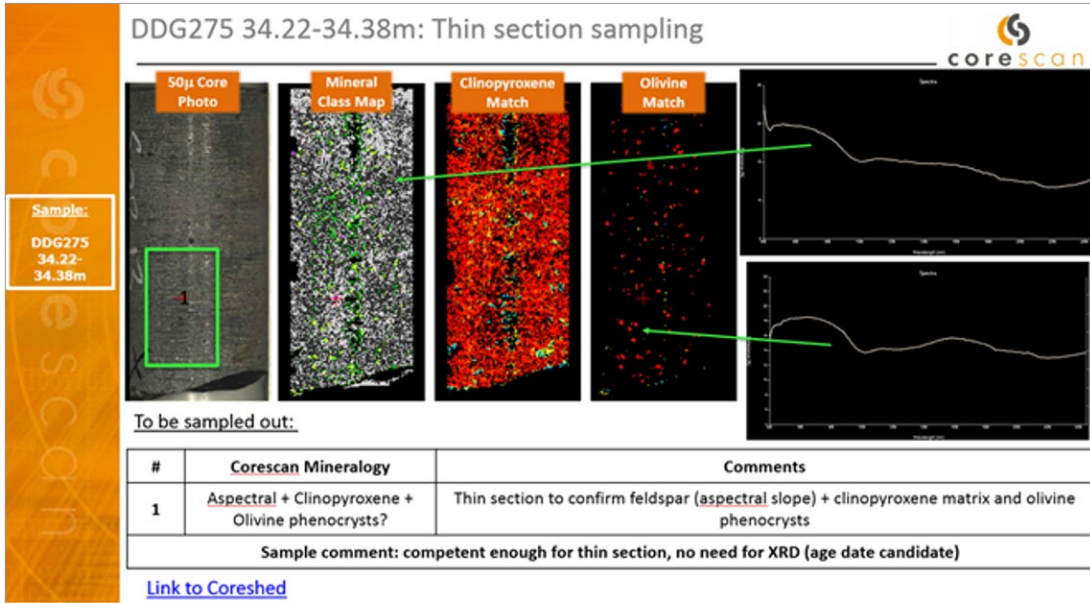
**Relative age constraints (pertinent geological relationships with surrounding rock units and any previous geochronology):**

Neogene, from palynology study of lower sedimentary unit

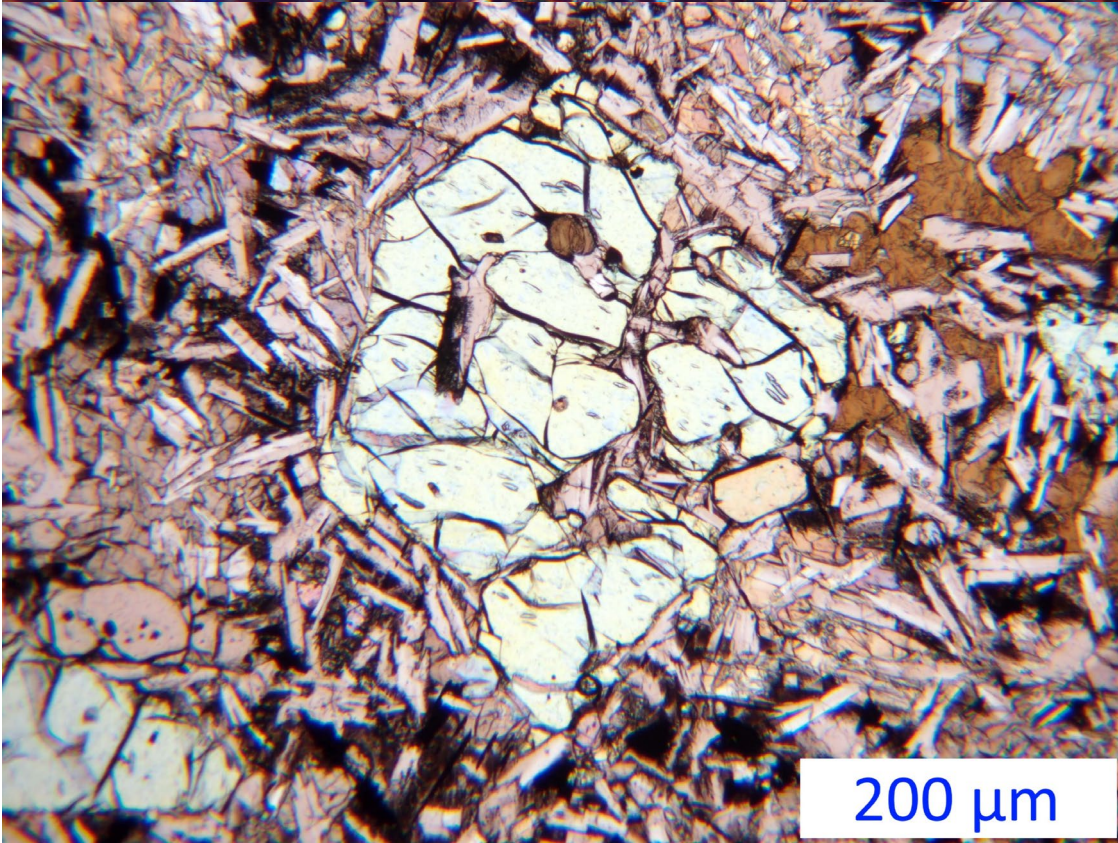
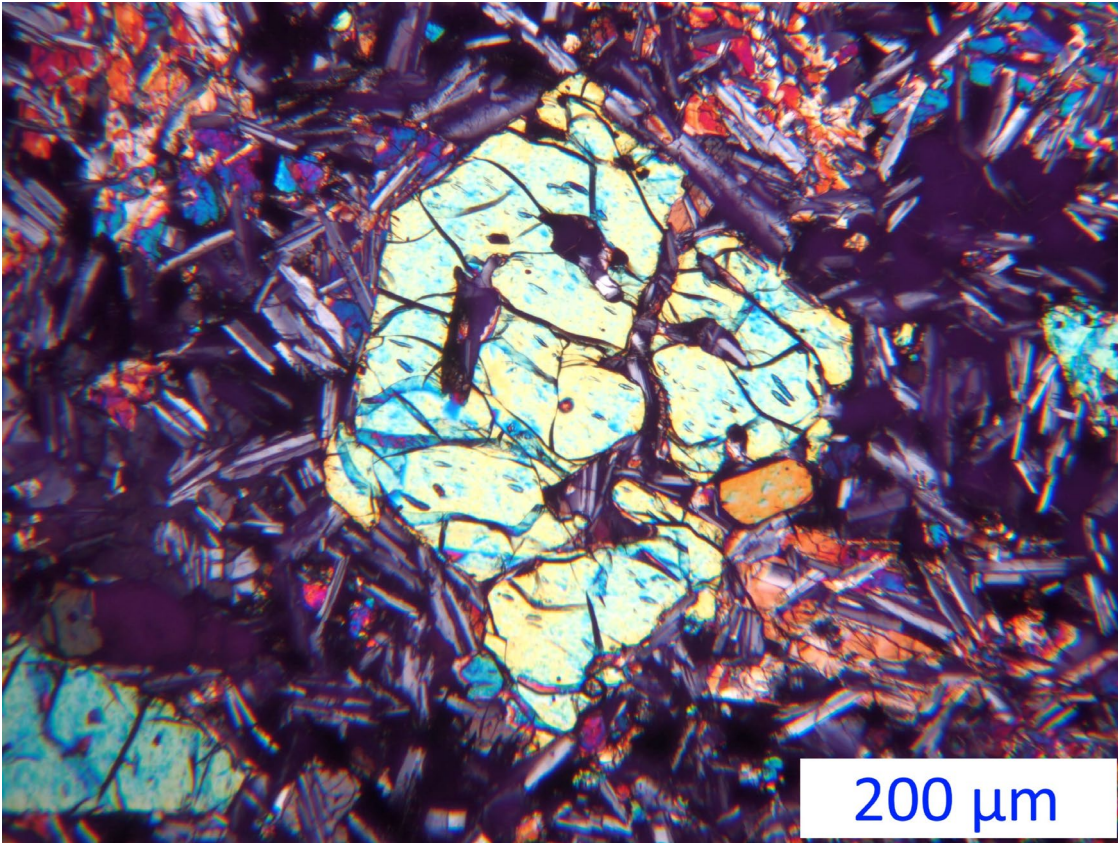
**Thin section description (if available):**

Clinopyroxene (subhedral, some are weathered), olivine phenocryst, plagioclase

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



(xpl)



*Relevant bibliographic references:*