Using Quarantine Materials in SEES

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1. Introduction
Are you bringing material into Australia for the purpose of research? Are you sending material overseas for analysis that will then return to Australia? Do you know if this material poses a quarantine risk? If this material has a quarantine risk there are strict procedures you must follow both on importation into Australia and while it is handled within the School. This document provides guidance concerning meeting obligations in regards to quarantine material.

2. Definitions
AQIS - Australian Quarantine and Inspection Service
Co-located QAP - Multiple QAPs may be ‘co-located’ meaning they are operating within a single physical site, share a common ABN and senior manager and may be approved by AQIS under a single approval fee.
DAFF – Department of Agriculture, Fisheries and Forestry
DAFF Biosecurity – ‘DAFF Biosecurity is part of the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF). DAFF Biosecurity manages quarantine controls at our borders to minimise the risk of exotic pests and diseases entering the country and also provides import and export inspection and certification.
Import Permit - A permit issued to an importer of quarantine material pursuant to the Quarantine Act 1908. There are specific conditions on an import permit which must be observed.
Key QAP Person – Nominated SEES personnel who are QAP accredited and have primary responsibility for monitoring a QAP. All importers must contact the Key QAP Person before placing quarantine material into a SEES QAP.

The QAP and contacts within SEES are as follows:

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Nominated Senior Manager – Head of School, Colin Murray-Wallace

QAP - A Quarantine Approved Premises is a place that AQIS has approved for performing specified activities with specified imported items (goods, materials, equipment, plants etc.) that have the potential to carry pest organisms of quarantine concern. Not all QAPs are approved for all purposes.

QAP Accredited Person – is a person that has completed appropriate training which is available online at [http://www.daff.gov.au/aqis/import/general-info/qap/training](http://www.daff.gov.au/aqis/import/general-info/qap/training). A QAP Accredited Person must be able to identify items that are subject to quarantine and manage these items appropriately.

Traceability - is ensuring that the key details of all items subject to quarantine are traceable. Traceability makes good record keeping essential. All items subject to quarantine at a QAP must be traceable in terms of the following (as a minimum):

- Quarantine Entry number (if applicable)
- Import Permit number (if applicable)
- Air waybill number (if applicable)
- Date of arrival
- Processing (including inspection, treatment and testing) details
- Quarantine release or disposal details
- Storage location
3. What is Quarantine Material?
Quarantine material is material that has a risk of allowing a pest organism to escape into the Australian environment. Quarantine risk can occur in:

- the original imported items;
- products of the original items;
- by-products and waste products of the original imported items and
- items that have been contaminated by items belonging to the first 3 categories including packaging boxes and plastic bags holding quarantine material.

In SEES we have materials or ‘commodities’ arriving from overseas that are a quarantine risk. These materials include:

- Soil and sediments samples
- Water samples
- Archaeological specimens e.g. soil, pottery, stone, charcoal, shell, bone, sediment
- Rock samples that have adhering soil

To determine whether the material you wish to bring into the country poses a quarantine risk and specific import conditions you can use the DAFF Biosecurity ICON database. Go to ICON at http://www.aqis.gov.au/icon32/asp/ex_querycontent.asp

ICON is AQIS’s import conditions database. It is a simple and convenient way to access information about Australian import conditions for more than 20,000 plant, animal, microbial, mineral and human commodities. It can be used to determine if a commodity intended for import to Australia needs a quarantine permit and/or treatment or if there are any other quarantine prerequisites.

4. What is not Quarantine Material?
Some items may not be considered quarantine material and an import permit is not required. For example:

a) non-organic material sourced from greater than 2 metres below the Earth’s surface and does not have any adhering or extraneous material;

b) rock, sand or pebbles;

The rocks must be free of adhering soil, organic material or other material of quarantine risk. It is the responsibility of the importer to demonstrate that these materials are clean and free of soil. Documentation can be provided through a Self Assessment Clearance Declaration. Detailed descriptions of the material should be provided to ensure that consignments are correctly profiled. For example, declare "pure copper concentrate" instead of "Mineral". The School has a standard letter template which can assist in producing this documentation which is available from the School Office.

5. Your responsibility
If you are importing quarantine material into Australia and using this material at UOW you have responsibility to ensure that you are aware of and follow correct procedures regarding the:

- Importing;
- Transport;
- Storage;
- Treatment and
- Disposal

of the quarantine material and associated packaging, by-products or waste.
All SEES workers handling quarantine material must either:

   a) Undertake the AQIS training – Quarantine Awareness QA01 and Quarantine Approved Premises for Accredited Persons (Classes 2 to 9) QAP02. This is an on-line training package with registration at http://www.iwgq.com.au/app/MainFrame.asp. The course will take between 3-4 hours.

   b) Work under the direct line of sight Supervision of a QAP Accredited person.

Be aware of local QAP procedures. Each QAP has Standard Operating Procedures which should be followed. A local induction should be undertaken with the Key QAP contact. You also have the responsibility to make sure other laboratory workers are quarantine aware. Awareness means that people in the QAP / laboratory, who are not QAP Accredited Persons, are aware that items identified as being subject to quarantine must only be handled by a QAP Accredited Person or under the direct supervision of a QAP Accredited Person.

Complying with the QAP Conditions of Approval is a mandatory requirement for QAPs and that the QAP Conditions of Approval are legally enforceable.

6. Importing

The first step when bringing quarantine material into Australia is to:-

- Identify the category of the material and
- Ensure, before leaving for fieldwork, that you have a current import permit which is valid for the category of material you are importing.

Use the DAFF ICON database (see Section 2) to determine if an Import Permit is required or to see if there is specific information that you should include with your import permit application form. ICON can also be used to check your import permit status, if you enter your Import Permit number.

Applications for import permits can be found at http://www.daff.gov.au/aqis/import/application

Examples of Import permit conditions held within the School include:

- Soil samples and related material ( samples for destructive analysis)
- Soil samples and related material, water- samples for testing, Algae samples – charophytes
- Archaeological specimens (soil, pottery, stone, charcoal, shell, bone, geological material – for destructive analysis), Dried plant material
- Soil and water samples and related material ( samples for destructive analysis)

Also note that frequently, when imported goods are to undergo processing that will address quarantine risks, the type of processing and the conditions under which the goods may be released from quarantine are specified on the Import Permit.

When travelling overseas for fieldwork, always take a copy of your import permit. On arrival declare your material and AQIS Inspectors will determine if a material is deemed is a quarantine item. You will be issued with a Order into Quarantine document. Be sure the retain this document and pass on to the SEES Key QAP person for archiving as it has a Quarantine Entry reference which must be logged in the SEES quarantine register.

If you import quarantine material and use a SEES QAP, you have a responsibility to:

- Ensure your import is current and appropriate for the material you wish to import
- Notify the key SEES Key QAP person for the QAP where it is to be stored
- Submit any import documentation to the SEES Key QAP person for archiving
- Ensure that it is correctly entered into relevant QAP logbooks;
- Ensure that all packaging material is dispose of as quarantine material.
Are you carrying any archaeological materials or animal remains?

Yes
You must present any material to be inspected by AQIS officials at the airport

No
You are free!

Are you carrying sediment samples or does any of your material have adhering dirt and/or organic material?

Yes
You can proceed to have the material 'ordered into quarantine'. If so, you'll be given a filled-out 'Order into Quarantine' form with unique tracking numbers. Keep this paperwork safe. You can get the material sent directly for gamma irradiation treatment. Any material treated in such a way can be released from quarantine afterwards, and you will be free. CHECK that it will not damage your sample for an subsequent analysis. Irradiation is done by Steritech (AQIS officials will have the details).

No
You are free. AQIS concerns regarding archaeological materials are not the materials themselves but adhering dirt.
Once material is in a specific QAP, it can be analysed within that area, or any of the co-located areas immediately adjacent (e.g. the OSL labs and the AAR lab next door). If you need to move samples any further than this, transport procedures should be followed.

7. Movement between Quarantine Approved Premises

Movement of items subject to quarantine are only permitted between registered QAPs.

7.1. Transport procedures to an external QAP outside of SEES

If quarantine material is to be transported to a QAP external to SEES then AQIS permission must be obtained by completing an application form for the transfer of quarantine material at: 

Quarantine risk must be minimised when items under quarantine are moved from one QAP to another. All movement of quarantine items requires QAP operators (at the forwarding and receiving QAPs) as well as transport drivers to be aware of their responsibilities.

During transport (as at other times), goods under quarantine must be kept isolated from goods not under quarantine and in a manner that prevents transfer of pests and diseases from one to the other. Consequently, the goods under quarantine must be isolated from the environment through which the vehicle is travelling as well as being isolated from any other goods inside the vehicle. During transport vehicles or containers should not be left unattended and unsecured.

7.2. Transfer procedures between co-located premises in SEES

A QAP accredited AQIS person must inspect and pack imported sample material for transfer to a co-located premise, within building 41. Only small amounts of sample are to be transferred between co-located premises.

- **Pack** - The material to be transferred is packed using secondary containment methods e.g. into two heavy-plastic ziplock bags (one inside another) or a plastic back inside a plastic crate/ box which has a lid. The packaging is checked for integrity.
- **Log out** - The samples are then marked as removed from the current QAP on the log-sheet, and a note is made on the documentation of the transfer details (i.e. location, reason, analysis method etc.).
- **Transfer** - The outer container is sealed and carried by an AQIS-approved person to the new quarantine location.
- **Log in** - The sample (clearly labelled as quarantine material) is then logged and placed into the quarantine storage area QAP at the co-located premise until required for destructive processing and analysis.
- **Dispose** – Packaging material if no longer required must be disposed of as per quarantine waste protocols. Disposal of packaging material must be logged into the QAP waste log.

8. Labelling and identification

‘Identification’ is ensuring that items subject to quarantine are clearly and visibly identified as being under quarantine. It is essential that all persons who could potentially have access to an imported item under quarantine can easily identify it as such. This helps to ensure that items under quarantine
are dealt with appropriately and that they are only handled by, or under the supervision of, people who understand and can manage those risks (i.e. QAP Accredited Persons).

All QAPs are identified with the appropriate AQIS signage, and all quarantine sample materials are recorded on quarantine register log sheets (which are in the quarantine storage cupboards). Each sample is assigned a unique tracking number.

9. Quarantine Approved Premises
It is essential that items under quarantine are adequately isolated in a QAP. QAPs are approved for dealing with specific items subject to quarantine in specific ways. Some QAPs specialise in conducting treatments, others are approved for just one purpose while others are approved for multiple purposes. Complying with the QAP Conditions of Approval is a mandatory requirement for QAPs and are legally enforceable. The QAPs in SEES are all Quarantine Class 5, Containment Level 1 (QC1) Facilities.

Access to quarantine material is restricted to a QAP accredited person or to those under their direct supervision and line of sight. The following procedures are undertaken by an accredited QAP person when unpacking and inspecting imported material:
- Upon receipt, imported materials are moved IMMEDIATELY to the quarantine area;
- An AQIS-approved person checks the packaging for integrity, contamination, and pests;
- Quantities (and types) of imported material are checked against any accompanying import documentation. They are then logged into a quarantine register sheet, and assigned an accompanying tracking number (for both tracking and waste disposal purposes);
- The material is labelled as quarantine material and placed in the quarantine storage area until required for processing and analysis;
- Import documentation is filed.

10. Quarantine Waste Management
Quarantine waste management means dealing with waste items (which can be spillage, residues, by-products or waste products) that are subject to quarantine in a way that ensures that the quarantine risk is minimised. The waste and processing by-products from imported items often present the same sort of quarantine risk as the original imported items. For example, sediment sample may be transported in plastic bags inside sealed cardboard boxes. The plastic and cardboard packaging now poses a quarantine risk and must be treated or disposed of in a way that neutralises the threat of pests and diseases.

Quarantine waste (and by-products) must be handled ‘under quarantine’ with as much care as the original imported items. Quarantine waste must be handled and stored in a manner that contains the quarantine risk until it is treated (or disposed of) in a manner that effectively neutralises the quarantine risk.

In QAP N2104 (41.273) there are located locked yellow SULO bins which are quarantine waste bins. Disposal of the contents of these bins is undertaken by a quarantine waste contractor (REDLAM WASTE SERVICES P/L, 10 Industrial Road, Unanderra, NSW, 2526). All waste items must be listed in a ‘Quarantine Waste Log Book’, which includes details of tracking numbers, quantities, contents of waste bags, dates, and disposal method.

11. Quarantine Treatment
Another way to release an item from quarantine is thorough treatment. Processing an item through treatment changes an item physically, chemically or biologically. Generally speaking, the processing will help to address quarantine risks if it either:
a) physically removes material that harbours the organisms that pose the quarantine risk (e.g. cleaning dirt from used machinery); or  

b) it kills the organisms that pose the quarantine risk (e.g. fumigation with methyl bromide to kill live insects).

11.1. Irradiation  
Irradiation is another form of treatment that can be arranged on importation. Irradiation means exposing items to gamma rays from radioactive isotopes such as Cobalt-60. Gamma rays cause a breakdown of molecules such as DNA and RNA that are essential for all living organisms (including viruses). Gamma rays also have an extremely short wavelength therefore can easy penetrate packaging materials. Also, gamma irradiation does not significantly increase the temperature of the items being treated and does not make the treated items radioactive.

Gamma irradiation

A sticker is placed on goods to be irradated by gamma irradiation to show that appropriate treatment has been given  
The sticker on irradiated goods will change colour to show that the appropriate level of exposure to gamma irradiation has been given

Irradiation is an effective method of treatment providing it does not change the nature of the sample for subsequent analysis. **It is unsuitable for samples to be analysed in the OSL laboratory.** Irradiation can be organised through Steritech (http://www.steritech.com.au/ 5 Widemere Road, Wetherill Park NSW 2164, P.O. Box 6632 Wetherill Park, NSW 2164, Telephone: (61) 02 8785 4400) and AQIS officials will have details at the airport.

11.2. Heat Treatment  
Another common method in SEES to release an item from a QAP is to undertake heat treatment in a small hot air laboratory oven dedicated to AQIS material. The common SEES heat treatment method (heated in a calibrated oven, for no less than 2 hours at no less than 160° C) is also used on some equipment that has been in contact with quarantine materials i.e. used on steel tubes prior to re-use. All heat treatments must be conducted at a QAP. Ovens must be regularly calibrated with an accredited temperature probe and these calibrations records logged. Calibrated ovens are available in 41.270A (see Terry Lachlan) and 41.G58 (contact Lili Yu). **This treatment is not appropriate for samples undergoing amino acid racemisation analysis**

A laboratory oven of a type commonly used to heat treat soil and mineral samples  
A small heat treatment oven in use
AQIS prescribes a range of heat treatments for different products. For example, soil imported for analysis or other special purposes may pose very serious quarantine risks. It can contain all sorts of insects, mites, fungi, bacteria, seeds etc. Small samples of soil can be treated at high temperatures (121°C for 2 hours) to take care of these quarantine risks. Moist heat treatment (95°C for 24 hours or 85°C for 48 hours) can be used to devitalise (kill) seeds. Heat treatment at the same or lower temperature and shorter time (85°C for 8 hours) is often prescribed by AQIS to take care of plant disease concerns associated with dried plant material, bark, timber and fungi. These temperatures would also take care of insect pests. Heat treatment should not be used when the use of dry heat can pose a risk of a dry material (e.g. straw) smouldering or igniting or if it will damage the product.

11.3. **Autoclaving**

Autoclaving uses high temperature, high pressure and steam to kill organisms. It kills fungi, bacteria, viruses, insects, snails and seeds. Autoclaving can therefore be used to treat high-risk material such as soil (which may contain all of the quarantine risks listed above), any contaminated equipment and a diverse range of waste materials. Autoclaving effectively destroys any quarantine concerns without the use of toxic chemicals and with no harmful emissions or by-products to be disposed of following treatment.

Places like hospitals and dentists often use autoclaving for sterilising equipment and laboratories that handle with materials such as cell cultures have traditionally used small bench top autoclaves for sterilisation of growth media and equipment. The same equipment can be used to neutralise quarantine risks associated with contaminated equipment or waste. SEES does not have an autoclave, but there are autoclave facilities on campus.

The effectiveness of autoclaving depends on steam so it is essential that the steam be able to penetrate the material being autoclaved. This means that goods that are packed in impervious packaging cannot be autoclaved. If dry goods are autoclaved, they will absorb water. Consequently, dry goods should not be autoclaved, unless they are being autoclaved prior to disposal. **Finally autoclaving should not be used on a material if the process will affect subsequent analysis.**

The School of Biological Sciences has an autoclave which may be used for quarantine material. Queries should be directed to Julie Gray, School Manager, X3441).
**Document Control and Change History**

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