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GUIDANCE FOR VISITING USERS OF THE DOA DRY LABORATORY

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FIG Department of Agriculture

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Introduction

The Department of Agriculture (DoA) has long held a policy of allowing non-FIG employees the use of space within its laboratory.

This guidance document aims to lay down the capabilities of the DoA Laboratory to visitors and the limits of support/assistance which the DoA can provide to them, as well as informing them of the equipment available, and the rules which must be agreed to prior to use of the Laboratory.

The Department of Agriculture

Much of the Falklands land mass is used for agriculture. The main product is wool, with an EU approved abattoir producing mutton and lamb for local and export markets and beef for local markets.

There are currently 82 farms, which are mostly family owned, totalling 1,135,663ha of land. In total these farms graze half a million sheep of various breeds including; Polwarth, Texel, Corriedale and an increasing Merino genetics. Approx. 60 of these farms also have a total cattle population approaching 4,500 which consist of Aberdeen Angus, Hereford, Devon and Murray Grey breeds.

The environment here produces exceptionally clean wool. Falkland Islands does have a very good reputation for these traits in their wool trading. The approx. annual wool production for the Falkland is 1,641,819kg of greasy wool with an average weight of 3.85kg and a fibre diameter range of 16.8-32.2µm. There are also a number of farms that have organic certification which is a step towards marketing these attributes internationally.

The uniqueness of the environment also throws up its challenges, and it is towards these that the Department of Agriculture (DoA) directs much of its advisory and research efforts and resources.

The Laboratory

The Department of Agriculture has a large and well-equipped laboratory. It is the responsibility of the Laboratory for the processing of all soil and animal feed samples, along with facial egg counting (FEC).

Soil samples are analysed for a wide range of nutrients including NPK (nitrogen, phosphorous and potassium), trace elements and exchangeable cations (calcium, magnesium, potassium and sodium).

The Laboratory assists with the preparation of fish/squid samples for bacteriology tests. These samples are carried out by the public health Laboratory at the Stanley hospital.

Fish samples are also sent to the UK laboratories of the Government Chemist for heavy metal/PCB tests.

The Laboratory also provides support to the Veterinary Services section with animal disease diagnosis and runs tests such as haematology profiles on blood samples, preparation of blood for biochemistry screening at the hospital and parasitological testing of faeces samples (mainly sheep and cattle).

Opening times

The Department of Agriculture is open normal government hours, Monday to Friday from 08:00 – 16:30, except on Public s and Government Holidays. This is the time which the Laboratory is open for the use of visiting researchers, although it may be possible for the Laboratory to open outside of these times at the express discretion and approval of the DoA staff.

Available assistance

The Falkland Islands DoA Laboratory has a dedicated member of staff. The details are below:

Joshua Anderson-Wheatley, Laboratory Scientist

Email: JWheatley@naturalresources.gov.fk

This Laboratory Scientist is available to help show visiting Laboratory users Laboratory how the equipment within the Laboratory operates, and Laboratory to aid with any dangerous Laboratory work, such as the dilution of concentrated acids.

The Laboratory can provide the visiting users with:

- Bench space for the user to work on.
- Equipment for the user to perform the analysis of samples that they have collected.
- Chemicals to aid with the work that the visiting user is undertaking, the chemicals required are provided at cost recovery for the DoA to be able to maintain its stock of chemicals.
    - The availability of chemicals can be requested from the Laboratory Scientist.

Equipment

The DoA Laboratory is well stock with a variety of equipment that can be used by visiting users, this equipment is available at the discretion of the DoA, provided that the DoA or Veterinary Services do not require the equipment for their standard operations, such as during the Saladero sheep FEC.

We have equipment available for soil testing, with NPK tests, total Carbon, pH and Conductivity as well as several other trace minerals.

There are also several microscopes available to use, and a Vis-UV spectroscope with sample holders for liquid and solid samples.

The equipment available for use in the DoA Laboratory is:

Equipment:	Nº available
Photo spectrometer – Agilent Cary 60 UV-Vis with operation software available	1
Conductivity meter	1
Balance 100g ±0.1mg	1
Balance 4kg ±0.01g	1
Micro Pipettes – ranging from 5µl to 250µl	11
Magnetic Stirrer	1
Magnetic Stirrer and Hotplate	2
Water Still	1
Water De-Ioniser	1
Auto Mixer	2
pH meter	1
Flame photometer – Jenway PFP7	1
Nitrogen analyser – Gerhardt Vapodest 500 (not currently available)	1
Block Digestion apparatus – Seal Analytical BD28S	1
Several ovens of various sizes	3
Incubator oven	1
Air Drying cupboard	1
Sample sieves of various sizes	25
-70 freezer	1
Fume hood	1
Microscope	3
Stereo microscope	1
Centrifuge – Jouan A13	1

Rules and Regulations

The DoA Laboratory has a set of rules that must be followed by all persons who intend to use the laboratory. These rules are also pined to each entrance door to the Laboratory to remind users of their obligations.

Further Laboratory terms and conditions are outlined in the Laboratory Access Form.

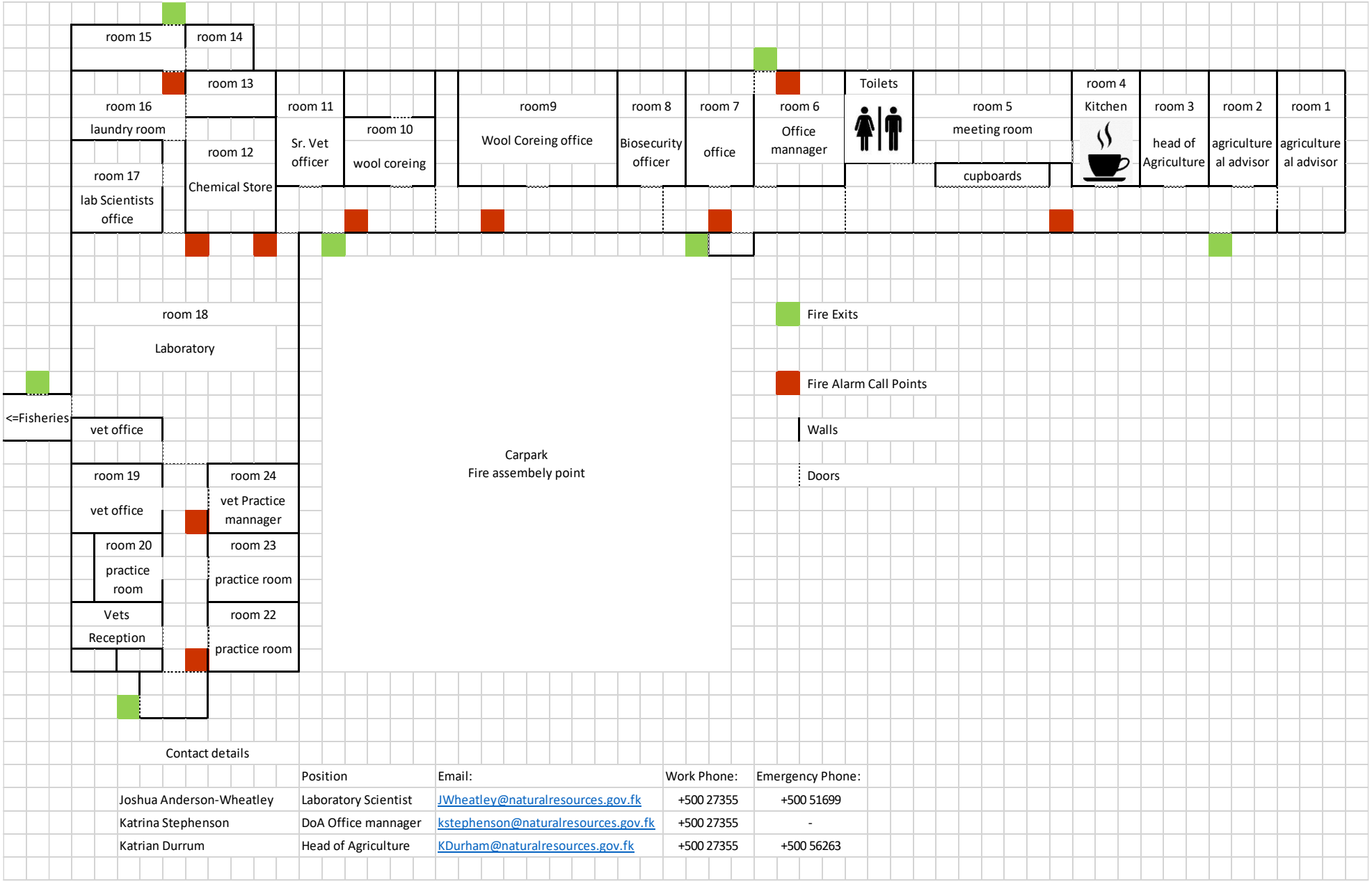
It is also important for visitors and users of the Laboratory to be aware of the fire exits and fire alarm call points that are shown on *Figure 1.*

Laboratory Safety Rules

By entering this Laboratory, you are agreeing to the following rules which you will abide by while you are working in the lab.

- Anybody working in the Lab should have received a general lab induction. This induction will include all relevant safety equipment (lab coats, safety goggles, eye wash stations, first aid kits) it will also have included fire evacuation, Toilets and Tea room.

1. If you are a visitor and not a staff member of DoA or Fisheries ensure that you sign in and out on the Laboratory visitors sign in sheet so that we know your location in the event of a building evacuation.
    - The Visitor sign in sheet is located on the side of the Fume hood next to the Laboratory Scientists office.
2. If there are any problems please let the lab manager know immediately.
3. Food and drink are prohibited within the lab.
4. Appropriate PPE should be worn at all times (i.e. Lab coat, Gloves, safety goggles).
5. Lab coats should be worn within the Lab areas only and not within the general building.
6. Hands should be washed thoroughly before leaving the lab and in-between tasks as to not contaminate equipment.
7. Keep long hair tied back when working with chemicals, heat sources, biohazards, or moving machinery.
8. Loose clothes should not be worn, no ties, hoodies, or tasselled clothing.
9. Before leaving the lab ensure that gas, electricity, and water are turned off.
10. Always clean the microscopes and replace there hoods when they are not in use.
11. Keep your work area clean and free from un needed chemicals, specimens, and idle equipment.
12. Work only with materials once their hazards have been assessed, in the case of chemicals ensure that you have read the Safety data sheet for that chemical.
13. Keep exits and walkways clear at all times, leave bags in the Lab managers office.
14. Laboratory waste should only be disposed of in the appropriate way. – do not mix chemicals in the sink, if a chemical is safe for disposal in the sink ensure it is flushed down with enough water.
15. Examine glassware before use, ensure that it is clean and not cracked or chipped. If damaged glassware is found place it in the hazardous waste bin and inform the Lab manager.
16. Do not lean or sit upon the benches.
17. Please do not use the lab if you are displaying symptoms of an illness such as the flu or Covid-19.



Contact details

	Position	Email:	Work Phone:	Emergency Phone:
Joshua Anderson-Wheatley	Laboratory Scientist	JWheatley@naturalresources.gov.fk	+500 27355	+500 51699
Katrina Stephenson	DoA Office mannager	kstephenson@naturalresources.gov.fk	+500 27355	-
Katrian Durrum	Head of Agriculture	KDurham@naturalresources.gov.fk	+500 27355	+500 56263

Figure 1: DoA and Veterinary Services building plan

Coming to work in the DoA Laboratory

There are several steps that we require visitors undertake before they are able to use the DoA Laboratory, these include filing in the DoA Laboratory Access Form, and completing the DoA Dry Laboratory Risk Assessment.

Laboratory Access form

The DoA has introduced an Access Form which all visitors are required to complete before they are able to use the Laboratory facilities in the DoA. This is to give the DoA a greater understanding of what a visitor may require before they visit as well as reducing the chance that the visitors time within the Laboratory will clash with normal operational use by staff at the DoA and Veterinary services require the Laboratory for.

To complete the Laboratory Access Form, you are requested to provide the following details:

Section 1: Applicants' details

We will require you to complete this section so that we have contact details should we need to contact you.

Section 2: Date of Laboratory access

In this section you will be required to give the time frame within which you intend to access the DoA Laboratory. More specific dates and times will need to be shared and agreed with the Laboratory Scientist nearer the time of your visit.

Section 3: Research Details

This section is to give the DoA Laboratory staff a greater understanding of the work you will undertake while in the Laboratory. This will identify what equipment you need access/use and what additional support you might require. Details provided here will support the smooth running of regular departmental tasks alongside your research time.

If applicable, we also require that you provide us with your Research Permit Number obtained from the FIG Environment Department. This provides assurance that you have the correct permissions to undertake the research within the Falkland Islands and in your intended subject area. We will also require information on your partner organisation within the Falkland Islands so that we have an additional point of contact should we be unable to contact you, or wish to verify any information you have provided in the form.

Section 4: Terms and Conditions

This section contains the terms and conditions that you are agreeing to when you complete this form and that you will follow while working within the laboratory.

Section 5: Date and Signature

By completing this section, you are confirming that you understand all of the terms and conditions and that all the information you have provided to us is correct to your understanding.

General Risk Assessment

The DoA requires that you read add to (if appropriate) and sign the Dry Laboratory risk assessment (Appendix 1) this is to ensure the safety of visitors who are working in the laboratory.

Appendix 1: General Risk Assessment

BASELINE DATA							
Name of hazardous task or condition being assessed: Laboratory Work	**Description of hazardous task or condition being assessed:** General Use of the Dry Laboratory within the DoA by visiting researchers			**Responsible FIG Department, Service Area and manager:** **Natural Resources / DoA / Laboratory Scientist**			
Date of assessment:	**Notes/comments:**			**Name and position of lead assessor:** Joshua Anderson-Wheatley			
Overall risk score (with current mitigation)	**Overall risk rating (with current mitigation)**	**Overall risk score (with further mitigation)**	**Overall risk rating (with further mitigation)**	**Accepted by (HoS or above): above**			
				Name:	**Position:**	**Signature:**	**Date:**
Place where assessment was conducted: DoA Dry Laboratory	**Names and positions of additional members of the assessment team:** [list the names and positions of those who gave their input or active oversight into this particular assessment]			**Limitations:**			
Name of visiting Laboratory user:			**Date:**	**Visiting users' signature:**			

ANALYSIS										
The hazard: **The thing that has the potential to cause harm**. List only **one** hazard per line (a hazardous task or condition is likely to have multiple hazards). Approach chronologically.	**The risk: WHO could be harmed and HOW** Describe the different groups that could be affected by the hazard and the nature of the potential consequence; this **must** relate specifically to the identified hazard.	**Existing controls to mitigate the hazard identified** The existing controls listed here **must** relate specifically to the control of the identified hazard and their level of effectiveness must be accurately assessed.	**Initial risk rating** See key at end of doc.			**Further controls required in order to mitigate the hazard identified** The additional controls listed here **must** relate specifically to the control of the identified hazard and should include consideration of both active and passive control. For example: engineering controls, barriers, signage and demarcation, safe working procedures, training, competency, checklists, inspections and PPE.	**Further control risk rating**		
			L	**S**	**R**		**L**	**S**	**R**
Burns from hot equipment	Users of Laboratory equipment that gets hot such as ovens, receiving 1st 2nd or 3rd degree burns	Appropriate PPE is provided for handling hot equipment	**2**	**4**	**8**				
Slips and Trips	Users of the Laboratory who could slip or trip a fall physically injuring themselves	Laboratory floor is kept clean and dry and walkways are kept free from obsicals	**1**	**3**	**3**				
Cuts from sharp equipment	Users of equipment that is sharp such as Scalpels but also equipment that users may not usually think of as sharp such as foil tins used for drying samples in the oven, and broken glassware	Laboratory is well lit and equipped with secure benches and tables designed for this type of work.	**2**	**2**	**4**				
Electric shock from faulty equipment	Users of equipment that is plugged in to the mains electricity, could receive electrical shock if the equipment is not properly maintained	Appropriate visual inspections of electrical equipment are carried out by a competent person to perform UK PAT within the laboratory	**3**	**4**	**12**				
Heavy equipment falling	Users of the laboratory, Heavy equipment could fall from a height on to or in to lab users causing physical injury	Heavy equipment is placed no higher than bench height and equipment should not be moved be only one individual but by 2 or more people.	**1**	**2**	**2**				
Chemical burns (corrosive chemicals)	Users of chemicals in the Laboratory that are classified as corrosive, they could receive 1st 2nd or 3rd degree burns	Laboratory PPE is provided (lab coats, googles, and gloves), lab is well lit and a fume hood is available for the handling of highly dangerous chemicals, equipped with a flexible water hose for washing spills.	**2**	**3**	**6**				

Toxic chemicals	Users of chemicals in the Laboratory that are classified as toxic or carcinogenic, users of these chemicals could be poisoned by these chemicals with either short-term or long-term health effect	Laboratory is equipped with a fume hood as well as PPE such as goggles, M3 masks, and gloves are available.	**2**	**4**	**8**				
Flammable chemicals	Users of chemicals in the Laboratory that are classified as flammable, these chemicals cause no immediate harm to humans unless they catch fire then users can be at risk of receiving 1st 2nd or 3rd degree burns	Flammable chemicals are stored in a fire-resistant cabinet, they should only be used at distance from heat sources, chemicals with very low flash points should be handled only within the fume hood to remove flammable vapour	**2**	**4**	**8**				
Irritant chemicals	Users of chemicals in the Laboratory that are classified as irritant, users may get a rash or may cause harm to their eyes if contact is made with these chemicals	Laboratory PPE is provided (lab coats, googles, and gloves), lab is well lit, and equipped with secure benches and tables.	**2**	**1**	**2**				
Explosive chemicals	Users of chemicals in the Laboratory that are classified as explosive or oxidiser, these chemicals may explode or cause an explosion effect if to much heat is applied, users may suffer from physical injury caused by debris flung by the explosion or 1st 2nd or 3rd degree burns	These chemicals should not be handled near a heat source or near other highly flammable material such as chemicals that are classified as flammable.	**1**	**4**	**4**				

ACTION PLAN					
Description of the potential harm to which the further control relates (take from WHO could be harmed and HOW)	**Description of proposed further controls (take from further controls required) but DOUBLE CHECK the control will actually address the potential harmed identified**	**Responsible individual**	**Due date for control being in place**	**Evaluation of the effectiveness of additional controls (to be completed after reasonable time has passed to allow for effective evaluation of controls)**	**Date evaluation took place**

KEY	DOCUMENT CONTROL
L (Likelihood): 1= Highly unlikely to occur 2 = Unlikely to occur 3 = Even chance of occurrence 4 = Likely to occur 5 = Certain to occur **S (Severity): 1= Minor harm 2 = Moderate harm 3 = Significant harm 4 = Major harm 5 = Certain fatality** **R (Risk rating = likelihood x severity): 1 – 8 Low risk** **9 – 14 Medium risk** **15 – 25 High risk** **Initial risk rating is likelihood multiplied by severity with the potential hazard judged in the context of existing controls.** **Further control risk rating is likelihood multiplied by severity with the potential hazard judged in the context of the proposed further controls.** **All hazards must be reduced to Low Risk post proposed further controls. If the risk cannot be reduced to Low, alternative measures such as avoidance or substitution must be considered.**	**Document number**: v4 **Document owner**: FIG Health & Safety **Date of last revision**: 11/10/2019