

Vertebrate Pesticides Residue Database



Standard Operating Procedure

This document has been written for Department of Conservation (DOC) staff. As a result, it includes DOC-specific terms and makes reference to internal documents that are only accessible to DOC staff. It is being made available to external groups and organisations to demonstrate departmental best practice. As these procedures have been prepared for the use of DOC staff, other users may require authorisation or caveats may apply. Any use by members of the public is at their own risk and DOC disclaims all liability in reference to any risk. For further information, please email sop@doc.govt.nz.

This SOP was last reviewed on 6/10/2015

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Contents

1.	Purpose and scope	3
2.	Process	4
3.	Accountabilities	5
4.	Terminology and definitions	5
5.	Procedure	6
	Start point	6
	Step 1: Decide whether to test for residues	6
	Step 2: Design a sampling strategy	6
	Step 3: Decide where to send samples	7
	Step 4: Collect and prepare the sample	9
	Step 5: Receive laboratory report	10
	Step 6: Send residue results to S&P to be entered into the VPRD	10
6.	Appendices	11
7.	Related resources	11
8.	About this document	12

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1. Purpose and scope

This SOP provides a process to capture the most useful information from samples tested for vertebrate pesticide residues for the DOC Vertebrate Pesticide Residue Database [docdm-32812](#) and to coordinate with other interests in native animal carcasses.

This SOP **applies** to samples taken for pesticide residue testing by DOC staff or as required by a DOC permission including:

- Dead animals handed in to DOC or collected by staff
- Animals killed for the purpose of sampling for residues
- Sampling from live animals
- Water or soil samples taken during or post a pesticide operation
- Samples taken for residue testing as part of a DOC research investigation
- Weathered bait samples taken after pesticide operations.

This SOP **does not apply** to:

- Toxic bait samples taken for quality assurance pre or during an operation
- Samples taken as part of Employee Health Monitoring for 1080 operations.

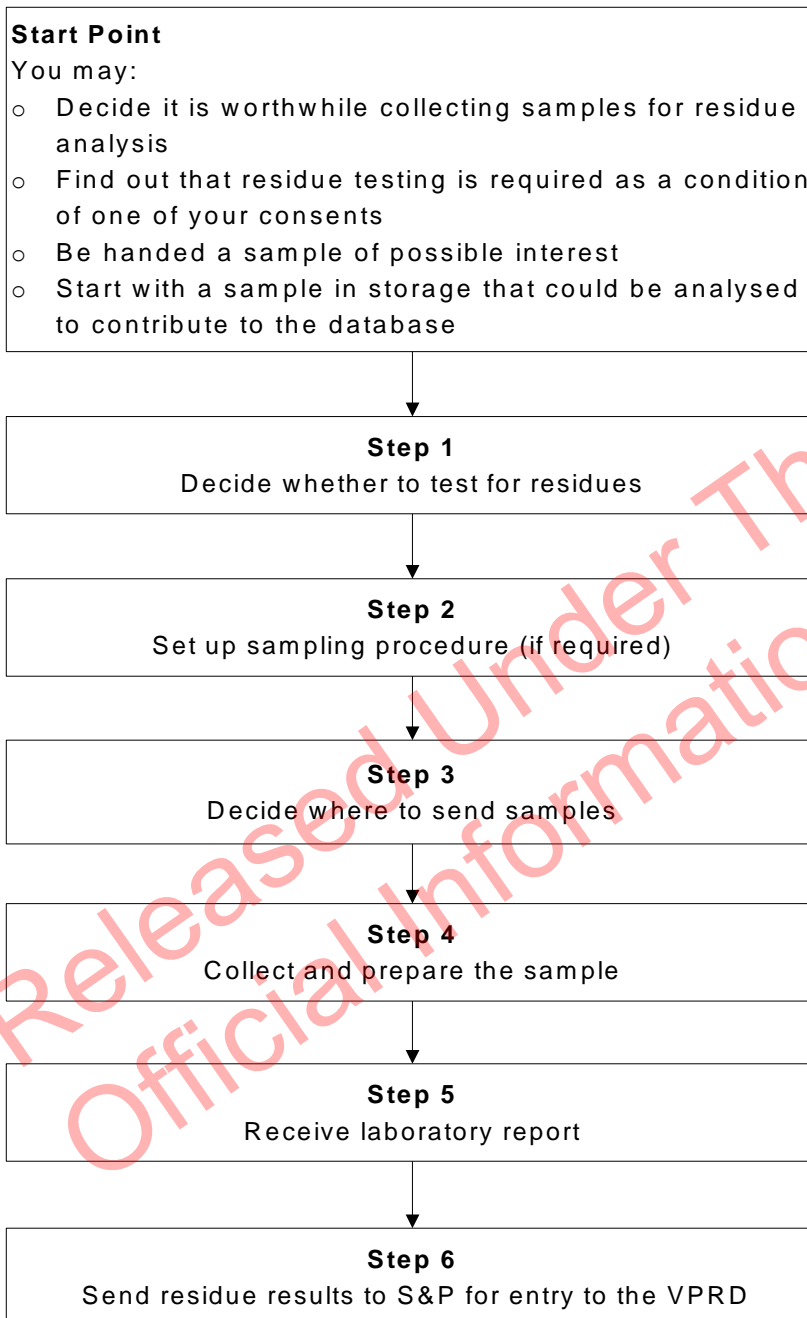
The Department of Conservation Vertebrate Pesticides Residue Database (VPRD) [docdm-32812](#) has been in existence since 1998. The original intention of the database was to bring together the results of all residue testing done in association with field application of vertebrate pesticides so that an overview of residues being found in the environment could be gained. This knowledge is useful for identifying non-target species that may be at risk and other issues arising from field use of pesticides that may require further investigation. It also serves to identify gaps in our knowledge.

The database is used to support the DOC Pesticide Information Reviews [docdm-25413](#) used by DOC's Pesticides Advisory Group to undertake risk assessments for pesticide uses.

This SOP is designed to address these issues by providing staff with a clear process for dealing with samples and getting the information into the database.

2. Process

The steps below are explained in detail in the [Procedure](#).



3. Accountabilities

Managers are authorised to approve a variation from SOP standards and are accountable for those decisions. They are required to use their professional judgement and seek advice or escalate when in doubt. All decisions should be documented. It is expected that variations from standards will be the exception rather than the norm, and that **legal (i.e., legislation and judge-made laws), and health and safety requirements are compulsory**. Common sense should prevail in the case of exceptional or emergency field situations.

Once assigned a task by their manager, the user of an SOP is accountable for following the standards (mandatory tasks) contained in the relevant SOP – not their manager, not the Operations Manager, nor any other staff member. If you wish to vary from a requirement you must get authorisation to do so from a Manager or higher. The person authorising the variation is accountable for that decision and must document it, the user is accountable for carrying it out.

Standards are designed to achieve residue results that are accurate and accessible via the DOC Pesticide Information Reviews [docdm-25413](#). False residue results create a risk that a pesticide may no longer be accepted for use, either within DOC or more generally.

4. Terminology and definitions

Refer to Animal Pests SOP Definitions and FAQs [docdm-51708](#) for terminology and definitions.

5. Procedure

Start point

There are a range of situations where you might consider testing samples for pesticide residues:

- In Steps 1 or 3 of the Planning phase of the Operational Planning for Animal Pest Operations SOP [docdm-1488532](#), you may decide it is worthwhile collecting samples for residue analysis. For example, your operation may offer an opportunity to contribute to the Priority list for samples [docdm-735506](#)
- In Step 2 of the Pre-operational phase of the Operational Planning for Animal Pest Operations SOP, you may find out that residue testing is required as a condition of one of your consents. In this situation, residue testing is compulsory
- In the Post-operational phase of the Operational Planning for Animal Pest Operations SOP, you may be handed a sample of possible interest. Alternatively, you may start with a sample in storage that could be analysed to contribute to the database. Step 2 and parts of Step 4 of this SOP are not relevant where you have been handed a sample or start out with a stored sample.

Step 1: Decide whether to test for residues

Residue testing is compulsory where it is required as a condition of one of your consents. In other situations, consider the value of the potential results relative to the costs of collection, analysis, interpretation and entering the results in the database.

Step 2: Design a sampling strategy

This step does not apply to you if you were handed a sample of possible interest or have got a sample out of storage to be analysed.

The key to designing an effective sampling strategy is identifying and defining the question you want to answer with the results, in the same way as described in the Field Trials for Animal Pests Operations SOP [docdm-51573](#).

Strategy for tissue sampling

There is no general guidance on how to design a sampling strategy for tissue sampling. If tissue sampling is planned, include this in the operational plan for the operation and consider creating a task specification to be clear on how you want it done.

Strategy for water sampling

Any water-sampling programme is planned with due consideration for the local conditions, water users, the hydrology of the area, and the conditions set out in the public health permission or other consents. The model permit condition for public health permission requires that sampling be designed to conform to the Landcare Research [Guideline for sampling and testing of water associated with monitoring of aerial 1080 baiting operations](#) (2nd edition).

You may want to contract specialist advice for your specific situation. Contact [NIWA](#) (0800 746 464) for advice on designing water sampling from surface waters or [ESR Water Science](#) (03 351 6019) for advice on designing sampling from ground water.

Compulsory standards	
1	The sample size is sufficient to detect the pesticide if present.
2	The sampling design meets any relevant consent conditions.

Step 3: Decide where to send samples

This step has three main considerations:

- Which laboratory to send it to?
- Does it need to go anywhere else?
- Who pays?

Which laboratory to send it to?

The choice of lab is up to you. It is preferable to use an International Accreditation New Zealand (IANZ) accredited laboratory that uses IANZ approved techniques. It may be worth asking for quotes as prices can vary. When seeking quotes ask the lab for guidance on the methodology and minimum level of detection (MDL) that they will use.

Two labs commonly used are:

- [AsureQuality Lab](#)
1C Quadrant Drive, Gracefield
Phone: (04) 570 8800
- [Landcare Research Centox Laboratory](#)
Gerald St, Lincoln, Canterbury 7640
Phone: (03) 321 9617

Tissue or blood samples to be tested for cholecalciferol should be sent to:

- Dr Peter Elder
[Canterbury Health Laboratories](#)
Corner Hagley Ave and Tuam Street, Christchurch, New Zealand
Phone: (03) 364 0888

The preferred laboratory for water samples to be tested for rotenone is:

- [Cawthron Institute](#)
98 Halifax Street East, Nelson
Phone: 0800 502 525

Does it need to go anywhere else?

A dead carcass from a threatened species can potentially provide valuable information to other people – particularly if it is in good condition (for a dead thing!). Besides pesticide residue analysis, the body could be:

- Examined by Wildlife Health experts for an alternative cause of death and to collect baseline data on the health (disease and parasite) status of native wildlife. It is crucial that the lab at Massey University receives the carcass in good condition and should be instructed to remove relevant samples for sending on to the toxicology lab you have arranged to receive them. Consult The collection, storage and transport of diagnostic samples from birds and reptiles [docdm-54407](#). The submission form can be found in Appendix 2.3 of the Wildlife Health Management SOP [docdm-442078](#).
- Of interest to Museum of NZ staff at Te Papa. Refer to Appendix 2.3 of the Wildlife Health Management SOP [docdm-442078](#)
- Useful to local Iwi groups for cultural uses such as feathers for cloak repair (Contact your local Pou Tairangahau).

Who Pays?

In most cases the costs of collecting, transporting and analysing samples lies with your cost centre. Result data is entered and the database maintained by Science and Policy without charge.

There is a fund available to have priority samples tested to fill gaps in our knowledge of vertebrate pesticides. Funding for this is held in Threats Management Section, S&P. Contact [REDACTED] for a project code if your samples meet the priority criteria in Appendix 1 [docdm-735506](#) . The project code will be supplied upon receipt of results as outlined in step 6 of this process.

Samples not on the priority list can sometimes be funded toward the end of the year if you are prepared to wait and store the samples.

Step 4: Collect and prepare the sample

The collecting part of this step does not apply to you if you were handed a sample of possible interest or have got a sample out of storage to be analysed.

Sampling procedures

- For tissue sampling (for pesticides other than cholecalciferol), follow the Landcare Research [Protocol for tissue sampling and testing for vertebrate pesticides in animals](#)
- For tissue or blood sampling to test for cholecalciferol, follow the Protocol for sampling and testing blood and tissue samples for cholecalciferol concentrations [docdm-635274](#)
- For water sampling (for pesticides other than rotenone), follow the Landcare Research [Guideline for sampling and testing of water associated with monitoring of aerial 1080 baiting operations](#) (2nd edition)
- For water sampling after a rotenone operation, follow the rotenone sampling advice in the Pest fish eradication best practice– Handlaying or aerial application of rotenone [docdm-23925](#).

Compulsory standards	
1	Samples must not be contaminated by other tissues or by pesticide-contaminated surroundings during collection and storage.
2	For all tissue sampling, dissecting equipment must be thoroughly cleaned between samples.
3	When packaging a sample for storage or transport, each sample must be placed in its own container, labelled externally with as much information as necessary to fully identify the sample on the test report and must not be mixed with other samples.
4	Water samples must be taken from each site in a way that ensures that samples are not contaminated by the sampler, sample containers, or subsequent handling.
5	To avoid contamination of water sampling, ensure: <ul style="list-style-type: none">• Containers are absolutely clean and thoroughly flushed inside and out several times with water during filling.• No 1080 bait or other contaminated material, such as bait containers, is in vehicles used in the transport of water samples.• The process of sample collection is isolated from the poison operation and the personnel involved in it.
6	Water samples must be kept frozen to ensure the 1080 does not break down.

Step 5: Receive laboratory report

Interpretation of results for tissue sampling

The following guidance is taken from the Landcare Research [Protocol for tissue sampling and testing for vertebrate pesticides in animals](#):

A number of variables will affect the concentration of pesticide residue present in animal tissue after death. Ambient temperature will play a part, but the main factors are biological considerations such as the amount of pesticide ingested, the age and condition of the animal, time-to-death, age of the carcass, and the processes of absorption, distribution, metabolism and excretion of the pesticide prior to death and degradation characteristics in the carcass. The concentration found in tissue or blood is not related to the lethal dose value of the pesticide for particular animal species.

The presence of any measurable pesticide in a dead animal is an indication of exposure, but not necessarily proof of cause of death.

The limit of detection of the method is influenced by the size and quality of the sample.

Interpretation of results for water

There is no general guidance on how to interpret residue results from water samples.

Supply a copy of the results report to any consent providers where this is required as a consent condition.

Compulsory standards

- | | |
|---|---|
| 1 | Laboratory results are supplied to consent providers where this is required as a consent condition. |
|---|---|

Step 6: Send residue results to S&P to be entered into the VPRD

Once you have results back from the lab it is important to get them into the Vertebrate Pesticides Residue Database [docdm-32812](#) even if no residues were detected. It is also vital for the VPRD to collect some basic facts about the pesticide use in the area where the sample was taken.

To achieve this you can send the result submission form [docdm-33319](#) to [REDACTED]

Compulsory standards

- | | |
|---|--|
| 1 | A submission form docdm-33319 is completed to communicate the residue results to Science & Policy. |
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6. Appendices

1. Priority list of samples [docdm-735506](#)
2. Protocol for sampling and testing blood and tissue samples for cholecalciferol concentrations [docdm-635274](#)
3. Result submission form for VPRD [docdm-33319](#)
4. DOC Vertebrate Pesticide Residue Database [docdm-32812](#)

7. Related resources

- Animal Pests SOP Definitions and FAQs [docdm-51708](#)
- [AsureQuality Lab website](#)
- [Cawthron Institute](#)
- [ESR Water Science](#)
- Field Trials for Animal Pests Operations SOP [docdm-51573](#)
- [Landcare Research Centox Laboratory](#)
- Landcare Research [Guideline for sampling and testing of water associated with monitoring of aerial 1080 baiting operations](#) (2nd edition)
- Landcare Research [Protocol for tissue sampling and testing for vertebrate pesticides in animals](#)
- [NIWA Environmental Information](#)
- Operational Planning for Animal Pest Operations SOP [docdm-735506](#)
- Pest fish eradication best practice– Handlaying or aerial application of rotenone [docdm-23925](#)
- Pesticide Information Reviews [docdm-25413](#)
- The collection, storage and transport of diagnostic samples from birds and reptiles [docdm-54407](#)
- Wildlife Health SOP [docdm-442078](#)

8. About this document

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Date 20/7/11

Amendments

Amendment date	Amendment details	SOP version	Amended by
20/7/2011	The previous version of this SOP is archived on docdm-745855	2.0	██████████
15/5/2012	Job and unit title amendments as per Organisational Review.	2.1	██████████
10/9/2013	Job title amendments as per Delivery Review.	2.2	██████████
6/10/2015	New SOP format and job title amendments as per Pilot Implementation. Links updated.	2.3	██████████