

Guide for Submitting Water Samples to the Division of Analytical Laboratories for Analysis

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Abbreviations	
ADWG	Australian Drinking Water Guidelines, 2004
°C	Degrees Celsius
cm	Centimetre
DAL	The Division of Analytical Laboratories
DWMP	NSW Health Drinking Water Monitoring Program
L	Litre
mg/L	Milligrams per litre
mL	Millilitres
PHU	Public Health Unit
Water Unit	A unit of the NSW Health Environmental Health Branch

Introduction

The **“Guide for Submitting Water Samples to the Division of Analytical Laboratories for Analysis”** (the Guide) has been prepared for reference when collecting and submitting water samples to the Division of Analytical Laboratories (DAL) for analysis. It also sets out the reporting mechanisms used by DAL for the different categories of water samples.

A companion document, **“Guide for Submitting Water Samples to the Division of Analytical Laboratories for Analysis – Quick Reference Guide”**, summarises sampling and submission procedures.

The Guides have been jointly prepared by DAL and the NSW Health Water Unit. They are designed for use by Water Utilities and Public Health Units (PHUs) and apply only to samples submitted to DAL. The information contained in the documents is current at the time of printing. The content will be periodically reviewed and updated as required.

All general enquiries regarding the Guide should be directed to the DAL Water Project Coordinator. Specific enquiries should be directed to the appropriate laboratory manager (refer to Appendix 1).

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Sampling

This section sets out the procedures for collecting samples for microbiological and inorganic chemical analysis at DAL.

1.1 Sample Containers

Separate samples are required for microbiology and chemistry.

Microbiology Samples

For microbiology samples use a clean, dry, leak-proof, sterile sample container capable of holding at least 150 mL of water.

Chlorinated water samples for microbiological analysis must be collected in sterile sample bottles containing sufficient sodium thiosulphate to provide an approximate concentration of 100 mg/L in the sample, in order to neutralise residual chlorine or other halogens.

Sterile disposable sample bottles containing sodium thiosulphate are commercially available. Bottles made of polyethylene are preferred, as they are less likely to be damaged during transport to the laboratory, and are less likely to become cross-threaded, allowing sample leakage.

Chemistry Samples

Two bottles of sample are required for inorganic chemical analysis. Use 2 high-density polyethylene screw-capped bottles, one 250 mL in volume and the other 1 L. Sample containers must be clean and free of contaminants.

Water from the 1 L bottle will be tested for nutrients, anions, pH, conductivity and physical characteristics. The second smaller bottle will be used for the analysis of trace metals. When unpreserved water samples are collected in plastic or glass bottles, some trace metals will be lost by adsorption to the inner walls of the bottles. Addition of acid to the sample at the laboratory allows recovery of metals adsorbed to the container. This smaller bottle will be acid preserved upon receipt at DAL.

For a fluoride sample, only one bottle is required. The smaller sized chemistry bottle (250 mL) can be used for collection of a fluoride sample.

Note: Bottle descriptions, product codes and a list of suppliers of microbiology and chemistry sample bottles are given in Appendix 2.

1.2 Instructions for Sample Collection

General Instructions

Appropriate collection and transportation of samples to the laboratory are critical to the outcome of the analysis of any water sample.

Samples should be collected by a person trained in correct sampling techniques.

Ensure that the samples collected are representative of the water under examination. DWMP samples must be representative of the supply to the customer.

Where samples are being collected for chemical and microbiological analysis from the same source, the sample for microbiological analysis must be collected first. This is to avoid contaminating the sampling point prior to taking the microbiology sample, which may lead to an error in sample results.

If carrying out field tests (pH, total chlorine, free chlorine and turbidity), take a separate sample for these tests. Do not use the microbiology sample for this testing, as the sample will become contaminated during the process and will be unsuitable for microbiological analysis.

Sampling for Microbiological Analysis

Samples must be taken aseptically. Precautions must be taken to ensure contamination is not introduced into the sample. Keep the lid on the sample bottle until you are ready to take the sample. During sampling, the container lid should not come in contact with anything that will contaminate the sample. The sample should be taken without rinsing the container, and the lid replaced immediately. Ensure that the lid is not cross-threaded, as the sample will leak during transport to the laboratory, and there may be insufficient water remaining for analysis.

A minimum of 150 mL is required. The container should not be completely filled, as some headspace is required to allow mixing of the sample at the laboratory. As a guide, leave at least 2.5 cm air space.

When sampling from a tap, it should be clean, free of attachments and in good repair. All taps should be disinfected before samples are taken (refer to page 6). After disinfecting the tap let the water run to waste for 2-3 minutes. Reduce the water flow to prevent splashing and collect the sample.

Wells, Bores

When sampling from a hand pump, it should be operated for at least 5 minutes before sampling. Mechanical pumps should be run for at least 2-3 minutes before sampling. If appropriate, taps should be disinfected using one of the methods described on page 6.

Rivers, Lakes and Reservoirs

Collect the sample by holding the bottle near its base and plunging it, neck downward, below the surface. Turn the bottle until the neck points slightly upward and the mouth is directed toward the current. If there is no current, as in the case of a reservoir, create a current artificially by pushing the bottle forward horizontally in a direction away from the hand. When sampling from a boat, obtain samples from the upstream side of the boat.

FAQ: How do I disinfect a tap prior to sample collection?

Use one of the following three methods:

- ◆ Swab or spray the nozzle and part of the body liberally with 100% absolute alcohol or methylated spirits and flame it. Open the tap fully and let the water run to waste for 2-3 minutes, or for a time sufficient to permit clearing of the service line. The tap should be sufficiently cooled before taking the sample.
- ◆ Swab or spray the inside and outside of the tap thoroughly with hypochlorite solution (bleach) made up freshly to 1% available chlorine. Leave for 2-3 minutes to allow disinfection to take place. Run the water to waste for a sufficient period to ensure that all hypochlorite solution has been removed before collecting the sample.
- ◆ Using a butane or propane burner, disinfect the tap by flaming, starting at the nozzle and working back to the body of the tap until the water in the nozzle boils. After flaming, water from the tap should be run to waste until cool before a sample is taken. Disinfection by flaming is suitable for metal taps without plastic fittings or other heat-sensitive components.

Sampling for Chemical Analysis

Lines should be flushed for 2-3 minutes before collecting the samples. The sample containers should be rinsed twice with the water to be collected before taking the samples. The 1 L bottle should be filled to the brim, to prevent oxidation of analytes. The 250 mL

bottle should be filled only to the bottom of the neck, to allow sufficient space to add nitric acid to the sample at the laboratory prior to analysis of trace metals.

For a fluoride-only sample, fill the bottle to the brim.

1.3 Transporting Samples to the Laboratory

Packaging

Once samples have been appropriately collected it is equally important that they are delivered to the laboratory so that their condition on arrival is as close as possible to that at the time of sampling. For microbiology samples, it is important that there has been no microbial growth or reduction in numbers during transport. This is achieved by prompt cooling and despatch of the samples to the laboratory. All microbiology samples should reach DAL to allow analysis to begin within 24 hours of sample collection. The preferred days for samples to arrive at the laboratory are Monday to Thursday.

Place samples in an insulated container, together with sufficient freezer bricks to keep the samples cool (2-10°C) during transport.

FAQ: How should I keep the samples cool?

Frozen freezer bricks should be used to keep samples cool during transport. Ice should not be used, as melted ice may contaminate the samples or may damage the labels so that they cannot be scanned or read at the laboratory. Makeshift freezer bricks, such as frozen bags of water, should not be used as they will melt in transit and can cause the same problems as ice when melted. Sample bottles filled with water and frozen to act as freezer bricks can create confusion on receipt, and you may be contacted to check if they are melted ice or unlabelled samples. Dry ice should not be used to rapidly chill microbiology samples as this may result in a decline in bacterial populations.

Sample containers should be packed so as to prevent damage to sample labels. If paperwork is included, it should be placed in a plastic bag. During transport in a sampling officer's car, samples should be stored in a refrigerator unit if available.

The insulated container should be sealed to prevent tampering during transport and be clearly marked as "Urgent Water Samples".

Delivery

Send samples to:

Division of Analytical Laboratories
480 Weeroona Rd
Lidcombe NSW 2141

QUICK TIP!

An enlarged copy of the address is given in Appendix 3. It may be photocopied and attached to the insulated container for delivery.

All transport and delivery charges must be pre-paid by the sender.

FAQ: Can I get insulated containers returned from DAL?

Arrangements can be made with DAL for the return of insulated containers. Hard insulated containers will be returned provided the sampling authority pays the freight cost. The insulated container needs to be labelled with the name of the water utility and a consignment note (with courier account number) included.

DAL can send foam insulated containers and freezer bricks to water utilities for future sampling, providing the freight cost is met by the water utility. Contact the DAL Stores Manager to make arrangements (refer to Appendix 1: Contacting the Laboratories).

1.4 Samples Unable to be Analysed

On some occasions the samples submitted to the laboratory are unsuitable for analysis. There are a number of reasons why this may occur, including:

- ◆ Damage to containers during transport to the laboratory, resulting in loss of the sample.
- ◆ Insufficient sample for analysis due to leakage or collection of too small a volume.
- ◆ Excessive time delays between sampling and arrival at the laboratory. Microbiology samples should be tested within 24 hours of collection. Samples will be accepted for analysis up to 72 hours after sampling. However the results obtained may not reflect the quality of the sample at the time of collection. Microbiology samples received more than 72 hours after collection will not be tested.
- ◆ The incorrect sample container is used for the selected analysis e.g. a microbiology sample container containing thiosulphate is used for a chemical sample.
- ◆ Use of a non-sterile container for collecting a microbiology sample.

Water utilities will be notified by fax (refer to Section 6) if a sample is unable to be analysed.

FAQ: Where can I get more information about sampling?

For additional information refer to:

- ◆ Australian/New Zealand Standard AS/NZS 5667:1998 Water quality – Sampling.
- ◆ Australian/New Zealand Standard AS/NZS 2031:2001 Selection of containers and preservation of water samples for microbiological analysis.
- ◆ Australian Drinking Water Guidelines, 2004. Part 4 Information Sheet 2.1 Sampling Information – handling requirements and preservation.

OR Talk to the staff at DAL or your local PHU.

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NSW Health Drinking Water Monitoring Program

This section outlines the procedures for submitting samples to DAL under the NSW Health Drinking Water Monitoring Program (DWMP), and explains how the results of analyses will be provided.

2.1 The Drinking Water Monitoring Program

The NSW Health DWMP enables all regional and rural water utilities to monitor their water in line with the *Australian Drinking Water Guidelines, 2004 (ADWG)*. Samples are taken in the distribution system and are representative of the water supplied to consumers. NSW Health provides water utilities with labels to identify samples collected under the DWMP. The labels carry a barcode that allows results to be recorded in the NSW Drinking Water Database.

Samples in the DWMP are classified as **Allocated**, **Additional** or **Repeat** samples.

Allocated microbiology and chemistry samples are the routine samples taken to assess the quality of water in distribution systems as supplied to the consumer (system performance samples). These samples are tested free-of-charge for indicator bacteria, physical characteristics and inorganic chemicals.

Microbiology samples are routinely tested for *Escherichia coli* (*E. coli*) and total coliforms. The presence of *E. coli* indicates faecal contamination of water and the possible presence of enteric disease-causing organisms. Total coliforms can occur naturally in the environment and may be present in the absence of faecal contamination. While there is no Guideline value for total coliforms in the *ADWG*, results can be useful for assessing the efficiency of treatment and disinfection processes.

Chemistry samples are tested for the various chemical and physical parameters listed in Section 5.

A **Repeat** sample is one taken after a Guideline value is exceeded in a test on a previous sample.

An **Additional** sample is one that is taken in addition to the allocated number of samples.

Allocated samples are tested free of charge. Repeat and additional samples are analysed on a fee-for-service basis.

2.2 Sample Submission

Samples submitted under this program must have a barcoded label. A submission form is not required, unless analysis of a non - standard characteristic is being requested.

2.3 DWMP Labels

Each year the Water Unit prints DWMP sample labels for Allocated microbiology, chemistry and fluoride samples. Labels are also provided for Repeat or Additional samples.

FAQ: What information is provided within the DWMP barcode?

Each DWMP barcode is made up of a number of fields that supply information about the sample. If you take the barcode **110CO0243780** as an example, this barcode is made up of the following fields:

1	The first digit represents the analysis type – 1 for a microbiology sample, 3 for fluoride, 6 for repeat/additional and 7 for chemistry
10	The next 2 digits give the year the sample was collected – 10 represents 2010
CO	The 2 letters identify the Water Utility – CO represents Cowra Shire Council
02	These 2 digits represent the water supply system – 02 represents Wyangala, the second of five supply systems maintained by Cowra Shire Council
43780	These 5 digits form the unique identifier number.

The DWMP labels should only be used for samples of **drinking water** taken in the distribution system.

Note: The following sample types are **NOT** included in the DWMP, and DWMP barcoded labels should not be used:

- ◆ Samples taken for operational monitoring
- ◆ Swimming pool / spa pool samples
- ◆ Private water samples
- ◆ *Legionella* samples
- ◆ Wastewater and recycled water
- ◆ Raw water
- ◆ Recreational water
- ◆ Project/survey samples
- ◆ Bottled water
- ◆ Packaged ice.

These types of samples may be submitted under another sample category type or on a fee-for-service basis.

General Instructions for the Use of DWMP Labels

Select an appropriate label according to sample type. Make sure the label is for the current year. If you use a label from previous years the results will be rejected from the Database.

The label should be attached to the sample container, not the lid. When applying the label ensure it is smooth (not wrinkled) so the barcode can be scanned at the laboratory and all the information on the label can be read.

Details relating to the sample are to be written on the sample label. Use a pen with waterproof ink to add the information immediately before the sample is taken.

Each label has a space for recording the:

- ◆ Date and time of sampling, and
- ◆ Site code. The site must be registered in the Database before use and the code be made up of three digits. If the site code is not known, use the default site code of 999.

Record further required details according to the label used.

FAQ: How can I obtain more labels when I run out?

Every year NSW Health issues Water Utilities with sufficient Allocated labels for the recommended **minimum** number of microbiological and chemical samples, and these are tested free-of-charge. NSW Health also issues a number of Repeat/Additional sample labels for samples submitted above the recommended minimum number. These samples are tested on a fee-for-service basis. For extra Repeat/Additional labels, contact the Water Unit.

If your labels become damaged or lost, contact the Water Unit for replacement labels. Labels will also be re-issued for samples that cannot be tested by DAL (because of late arrival or containers broken in transit).

For further information or help with label problems, phone the Water Unit on 02 9816 0589.

2.4 Allocated Microbiology Sample

Allocated microbiology labels are white and the barcode begins with “1”.

Record on the label any field results such as pH, turbidity, free chlorine and total chlorine taken at the same time that the sample is collected. DAL will enter these field results into the Database.

Label for an Allocated Microbiology Sample

The diagram shows a label for an allocated microbiology sample. The label includes the following information:

- Water Utility 2-letter code:** HA
- Water supply system 2-digit code:** 03
- Water Utility:** Hastings Council
- Water supply system:** Comboyne
- Unique barcode:** 109HA0349096
- Analysis type:** pH, Turbidity, Free Chlorine, Total Chlorine
- Form fields:** Comments-, pH, Turbidity, Free Chlorine, Total Chlorine
- Date:** _____
- Time:** _____
- AM/PM:** _____
- Is the system chlorinated (Y/N)?**

Instructions for recording information:

- Record the sampling date and time (noting if AM or PM)
- Record the three-digit site code
- Record any comments and field results
- Record Y (yes) or N (no) as to whether the system is chlorinated

2.5 Allocated Chemistry Sample

Allocated chemistry labels are yellow and the barcode begins with “7”.

Place the barcoded label on the 1 L bottle and add the required information. Attach a plain label to the 250 mL bottle. Copy the supply system code (2 letters followed by 2 numerals) and the sampling time and date from the barcoded label to the plain label.



For supply systems that serve populations of 5000 or more, 12

Allocated chemistry labels are provided. One Allocated chemistry sample should be submitted for each month of the year. For water supply systems that serve populations of fewer than 5000, 2 Allocated chemistry labels are provided. These samples should be submitted approximately 6 months apart.

The *Code of Practice for the Fluoridation of Public Water Supplies* requires utilities that fluoridate to submit a comparative monthly sample to DAL for analysis. Comparative testing checks the accuracy of the testing procedure at the water treatment plant. When samples are being collected from a fluoridated supply, take a third sample of at least

50 mL in addition to the samples to be sent to DAL. Conduct a fluoride test on the third sample, record the result (the “fluoride field result”) on the barcoded label, and discard the sample you have used to measure the fluoride field result. DAL will enter this result into the Database. DAL will also carry out a fluoride test on the sample. The two results are compared to give a “fluoride ratio”.

$$\text{Fluoride ratio} = \frac{\text{Water Utility fluoride reading}}{\text{DAL fluoride reading}}$$

The ratio should be as close as possible to 1, indicating that the fluoride measurement at the Water Utility is close to the measurement at DAL. A ratio above 1 shows that the instrument at the treatment plant is reading too high, which may result in under dosing of fluoride. A ratio of less than 1 shows that the instrument at the treatment plant is underestimating the fluoride present and this may lead to excessive concentrations of fluoride. Results that differ by more than 20% from the DAL result will be notified to the Water Utility and PHU by fax.

If the supply receives fluoridated water from another water utility (bulk supplier) there is no need to conduct a fluoride field measurement.

Those authorities submitting 12 Allocated Chemistry samples per year fulfil this requirement of the *Code of Practice for the Fluoridation of Public Water Supplies*, provided the fluoride field result is recorded on the label.

Label for an Allocated Chemistry Sample

The diagram shows a yellow label for an allocated chemistry sample. The label contains the following information and fields:

- NSW HEALTH** logo at the top.
- Drinking water monitoring program 2009** title.
- Allocated chemistry sample** text.
- Tweed Shire Council** and **Tyalgum** location information.
- Analysis type**: TD
- Water utility 2-letter code**: 03
- Water supply system 2-digit code**: (blank)
- Unique barcode**: 709TD0353706
- Date**: (blank)
- Time**: (blank)
- AM/PM**: (blank)
- Comments**: (blank)
- Is the system fluoridated (Y/N)?**:
- If so, what is the field result?**: (blank)

Four red-bordered boxes provide instructions for recording data on the label:

- Record the sampling date and time (noting if AM or PM)**: Points to the Date and Time fields.
- Record the three-digit site code**: Points to the Water supply system 2-digit code field.
- Record any comments**: Points to the Comments field.
- Record Y (yes) or N (no) as to whether the system is fluoridated. If yes, enter the field result.**: Points to the fluoridation checkbox and field result field.

2.6 Allocated Fluoride Sample

Allocated fluoride labels are yellow and the barcode begins with “3”.

For fluoridated water supply systems that serve populations of fewer than 5000 a further 10 Allocated fluoride labels are provided to meet the requirements of the *Code of Practice for the Fluoridation of Public Water Supplies*. These labels should be used in the months when an Allocated chemistry sample is not submitted.

When taking an Allocated fluoride sample, collect an extra sample of at least 50 mL in addition to the one to be sent to DAL. Conduct a fluoride test on the extra sample, record the result (the “fluoride field result”) on the barcoded label, and discard the sample you have used to measure the fluoride field result. DAL will enter this result into the Database. DAL will also carry out a fluoride analysis on the sample to check the calibration of the meter at the treatment plant. The two results are compared to give a fluoride ratio. A second bottle is not required for fluoride samples.

Label for an Allocated Fluoride Sample

The diagram shows a yellow label for an allocated fluoride sample. The label contains the following information:

- Analysis type:** Allocated fluoride sample
- Water Utility 2-letter code:** SR
- Water supply system 2-digit code:** 05
- Unique barcode:** 309SR0586899
- Water Utility:** Snowy River Shire Council
- Water supply system:** Adaminaby
- Comments:** A box for recording any comments.
- Date and Time:** Fields for recording the sampling date and time (noting if AM or PM).
- Field Fluoride Result:** A field for recording the plant fluoride result.

Below the label, four red boxes provide recording instructions:

- Record the sampling date and time (noting if AM or PM)** (points to Date and Time fields)
- Record the 3-digit site code** (points to the barcode)
- Record any comments** (points to the Comments box)
- Record the plant fluoride result** (points to the field fluoride result field)

FAQ: How many chemistry labels will I receive?

The number of labels depends on whether the supply is fluoridated and on the size of the population, as shown in the following table.

Population	Allocated Chemistry	Allocated Fluoride	Total
<5000 (not fluoridated)	2	0	2
<5000 (fluoridated)	2	10	12
>5000	12	0	12

2.7 Repeat or Additional Sample

A Repeat/Additional sample label is white and the barcode begins with “6”.

Repeat/Additional sample labels should be used for:

- ◆ Repeat samples taken after a previous sample has been found to not comply with the ADWG
- ◆ Additional samples taken above the recommended minimum number.

It is necessary to indicate on the label if the sample is a repeat or additional sample.

These labels can be used for microbiology or chemistry samples and the analysis type must also be recorded on the label.

Repeat samples will be analysed for the full range of characteristics for which Allocated samples are tested.

Label for a Repeat/Additional Fluoride Sample

NSW HEALTH Drinking water monitoring program
Repeat/Additional Sample 2010

Water utility 2-letter code: **EC**
 Water supply system 2-digit code: **03**
 Unique sample barcode: **610EC0313548**
 Water Utility: **Palerang Council**
 Water supply system: **Captains Flat**

Type of analysis: **EC 03**

Repeat Additional

Is the system chlorinated (Y/N)?

Is the system fluoridated (Y/N)?

Date _____ Time _____ AM/PM If so, what is the field result? _____

Record

the analysis type i.e. microbiology or chemistry

Record

the sampling date and time (noting if AM or PM)

Record

the 3-digit site code

Record

if the sample is Repeat OR Additional

Record

Y (yes) or N (no) as to whether the system is chlorinated.

Record

Y (yes) or N (no) as to whether the system is fluoridated.
If yes, enter the field result.

2.8 Reporting Results for DWMP Samples

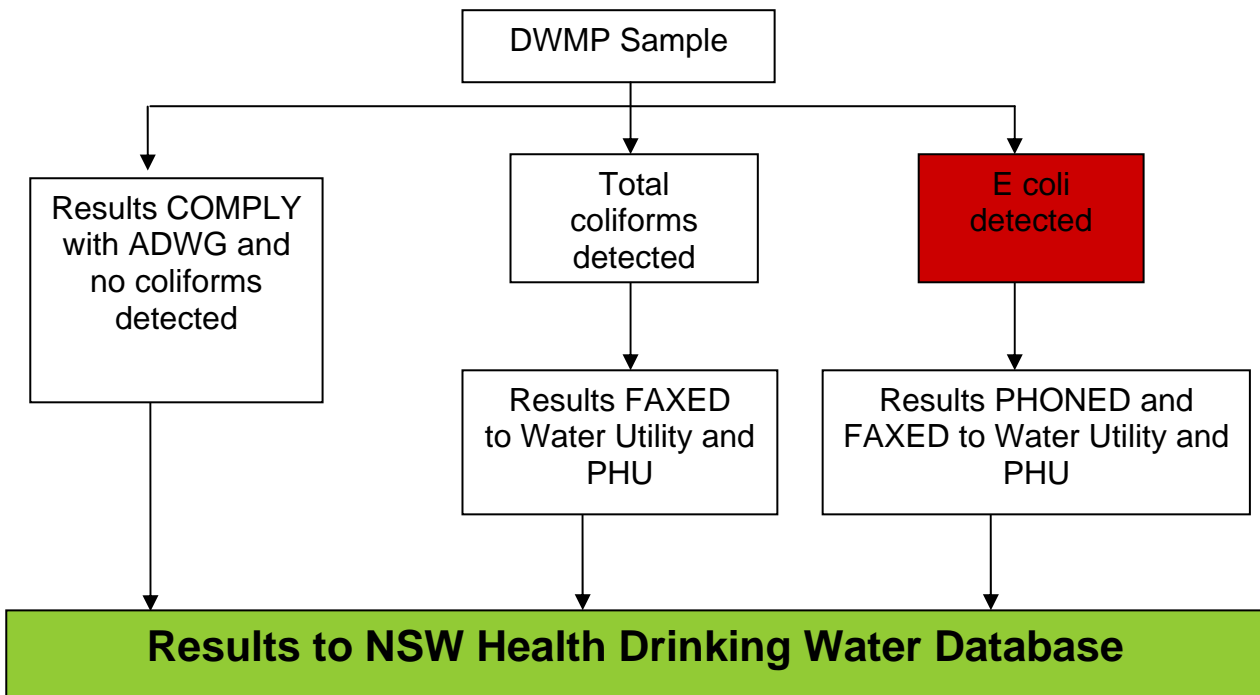
All results will be entered directly into the NSW Drinking Water Database. Hard copy reports for samples that comply with the ADWG are not routinely issued.

Results that do not comply with the ADWG will be telephoned and/or faxed according to the protocols set out below. The non-compliance report will state the relevant Guideline value. Results sent to Water Utilities will be addressed to the General Manager. Results sent to PHUs will be addressed to the Senior Environmental Health Officer.

Microbiology Results

When *E. coli* is detected in a microbiology sample, the Water Utility and PHU will be notified by telephone and fax. When coliforms are detected Water Utilities and PHUs will be notified by fax.

Reporting Microbiology Results for a DWMP Sample



Chemistry Results

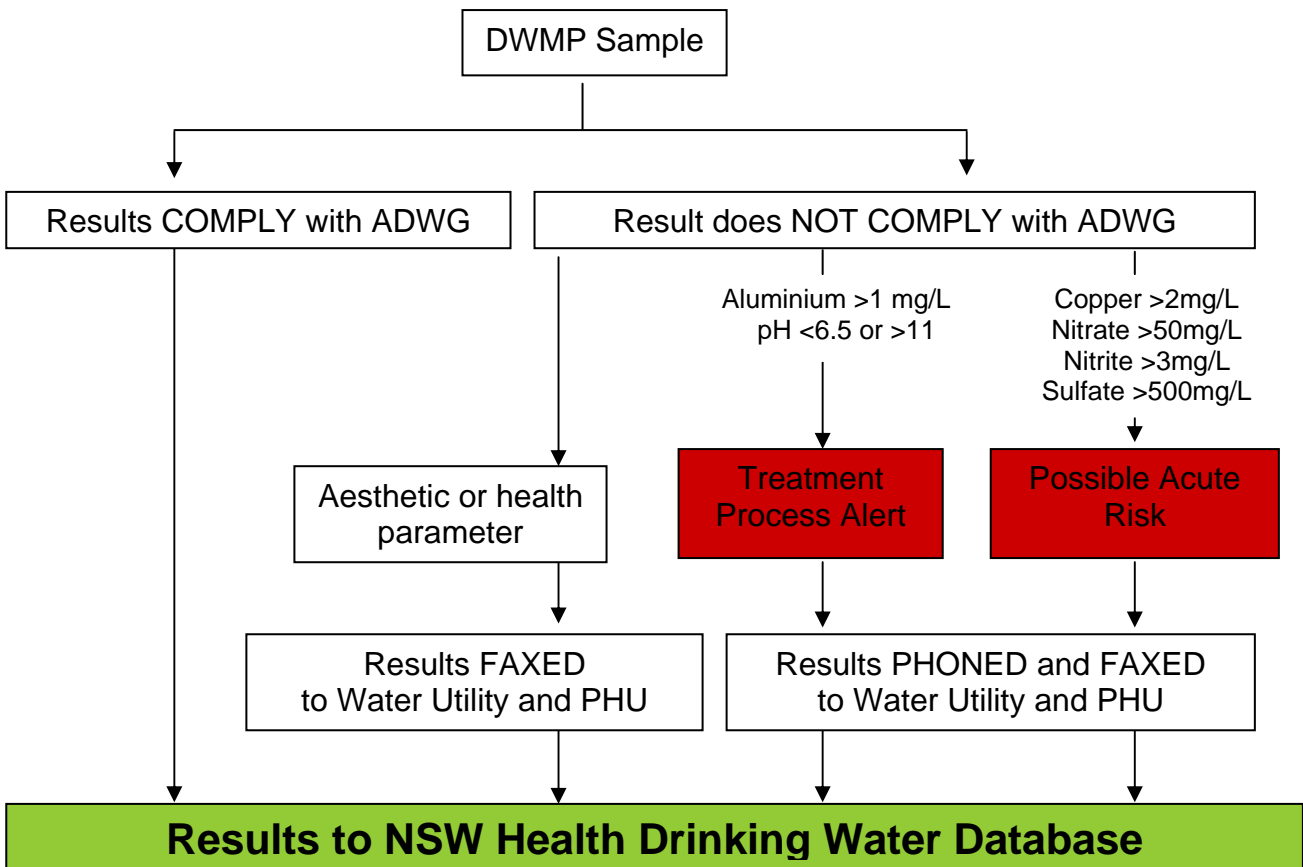
Non-compliant chemistry results will be notified by fax to Water Utilities and PHUs. Two types of non-compliances will also be notified by telephone:

- ◆ When a health Guideline value is exceeded for a chemical that might present an acute health risk if consumed.
- ◆ When an aesthetic Guideline value is exceeded for a characteristic that may indicate a problem with the treatment process that requires prompt attention.

The following table lists the characteristics that will be notified by both phone and fax.

Non-Compliance Type	Guideline Value Type Exceeded	Characteristic	Trigger Value
Treatment Process Alert	Aesthetic	Aluminium	>1 mg/L
		pH	<6.5 or >11
Possible Acute Risk	Health	Copper	>2 mg/L
		Nitrate	>50 mg/L
		Nitrite	>3 mg/L
		Sulfate	>500 mg/L

Reporting Chemistry Results for a DWMP Sample



2.9 Request for Non-Routine Analyses

In addition to the analyses routinely carried out on DWMP samples, further analyses may be requested. Consultation with the appropriate laboratory manager is required (refer to Appendix 1. Contacting the Laboratories). A completed submission form (refer to Section 6) must be submitted with the samples, nominating the particular analysis sought. Non-routine analyses that are available are listed in Section 5. These analyses are tested on a fee-for-service basis.



Pesticides and Disinfection Byproducts Testing

This section outlines the procedures for submitting samples to DAL for analysis for pesticides and disinfection byproducts (DBPs), and explains how the results of analysis will be provided.

3.1 Pesticides

Samples may be submitted as project samples or on a fee-for-service basis. Water Utilities and PHUs wanting to participate in projects must submit a project application to the Water Unit for assessment. They must also agree to meet the sampling and reporting obligations of project monitoring. Agencies taking part in these programs are required to submit a summary report to the Water Unit upon completion of the project.

Project samples are tested free of charge.

Pesticides Tested for

Samples are tested for several categories of pesticides in accordance with the ADWG.

DAL can test for pesticides in the following groups:

- ◆ Organophosphorus (OP) insecticides
- ◆ Organochlorine (OC) insecticides and herbicides
- ◆ Synthetic pyrethroid insecticides
- ◆ Phenylurea and triazine herbicides
- ◆ Acidic herbicides
- ◆ Carbamate insecticides
- ◆ Glyphosate.

A list of pesticides within these groups that DAL tests for is given in Section 5.

The pesticides tested for in individual projects depend on the location of the water source and the activities carried out in the area.

Sample Submission

Project samples must have an appropriate label issued by the Water Unit. Details relating to the sample are to be written on the sample label. A sample submission form is not required.

Sample Bottle for Pesticides Analysis

Samples for pesticides analysis are to be collected in a brown glass bottle of at least 1 L volume. The glass bottle must be brown/amber in colour to prevent the degradation of some pesticides by ultraviolet rays. If a brown bottle is not available, use a clear glass bottle and wrap the bottle in aluminium foil immediately after taking the sample. Plastic sample bottles are not to be used for pesticides sampling as these compounds are easily adsorbed onto the surface of the plastic. A plastic screw-top cap lined with aluminium foil

is required. Foil should be placed over the mouth of the bottle before screwing the cap down. Sample bottles and foil must be clean and free of contaminants.

Bottle descriptions, product codes and a list of suppliers are given in Appendix 2.

Sampling for Pesticides Analysis

Rinse the bottle and foil with the sample water at least once and then fill the bottle with the sample. A minimum volume of 1 L is required.

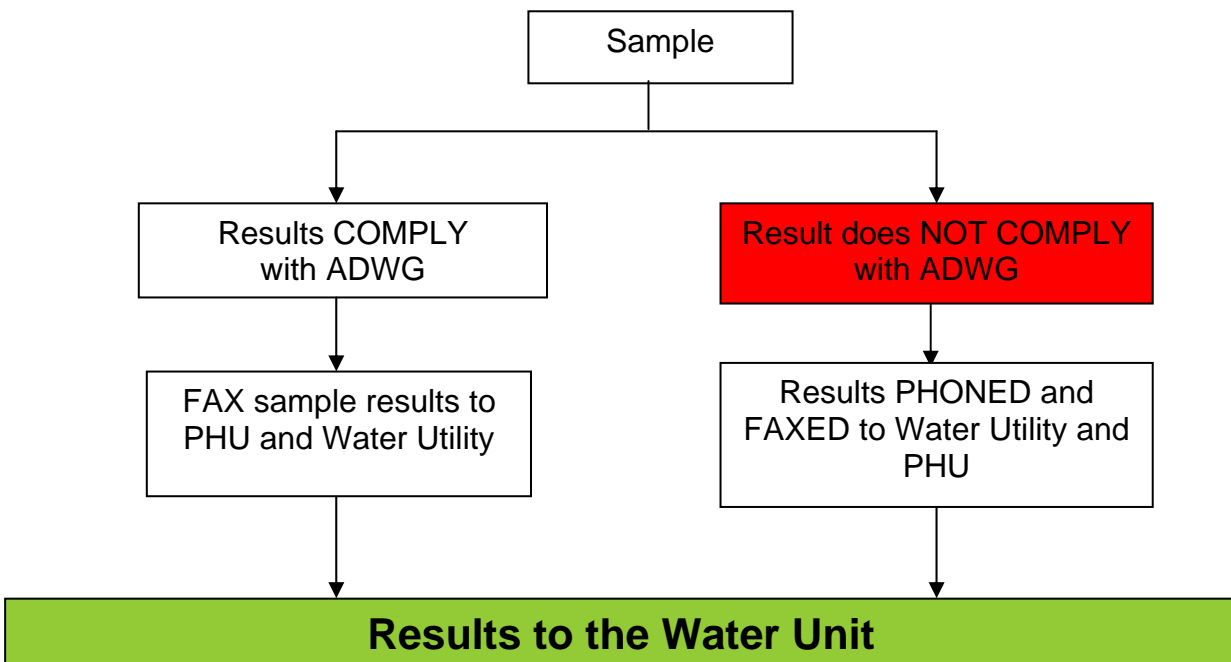
Transporting Samples to the Laboratory

Place samples in an insulated container, together with sufficient freezer bricks to keep the samples cool (2-10°C) during transport. Pesticide samples should be transported to the laboratory without delay, as some pesticides are relatively unstable in water.

Pesticides Results Reporting

Results will be faxed to participating Water Utilities and PHUs. Results that **DO NOT COMPLY** with the ADWG will be telephoned and faxed to the Water Utility and PHU on the day of result confirmation.

Reporting Pesticides Results



3.2 Disinfection Byproducts

Samples may be submitted as project samples or on a fee-for-service basis. Water Utilities and PHUs wanting to participate in projects must submit a proposal to the Water Unit for assessment. They must also agree to meet the sampling and reporting obligations of project monitoring. Agencies taking part in these programs are required to submit a summary report to the Water Unit upon completion of the project.

Project samples are tested free of charge.

DBPs Tested for

Samples may be submitted for analysis for the following groups of DBPs:

- ◆ Trihalomethanes
- ◆ Chloroacetic acids
- ◆ Chlorine dioxide by-products.

A list of DBPs within these groups that DAL can test for is given in Section 5.

Sample Submission

Project samples must have an appropriate label issued by the Water Unit. Details relating to the sample are to be written on the label. A sample submission form is not required.

Sample Bottle for DBPs Analysis

Samples are to be collected in a brown glass bottle capable of holding at least 200 mL of sample. Sample bottles must be clean and free of contaminants.

Bottle descriptions, product codes and a list of suppliers are given in Appendix 2.

Sampling for DBPs Analysis

Before sampling, rinse the bottle with the water to be sampled at least once and then fill the bottle to the top. A minimum volume of 200 mL is required.

Transporting Samples to the Laboratory

Place samples in an insulated container, together with sufficient freezer bricks to keep the samples cool during transport. Samples for chlorate and chlorite analysis should reach DAL to allow analysis to begin within 48 hours of sample collection.

Results Reporting

Results will be faxed to participating Water Utilities and PHUs. Results that **DO NOT COMPLY** with the Guidelines will be telephoned and faxed to the Water Utility and PHU on the day of result confirmation.



Samples other than DWMP Samples

Samples may be submitted to DAL under a number of programs other than the DWMP. Samples will generally be classified into one of the following categories:

- ◆ **Public Health Investigations**
- ◆ **PHU Allocated Samples**
- ◆ **Projects/Surveys**
- ◆ **Private Supplies Serving the Public**
- ◆ **Private Samples**

The procedures for sample submission and results reporting will vary according to the type of sample submitted.

This section outlines the procedures for submitting samples to DAL for these programs, and explains how the results of analysis will be provided.

4.1 Public Health Investigations

This category covers samples collected by PHU staff (or by others after consultation with the PHU) to investigate water quality incidents or disease outbreaks.

Priority will be given to these samples, and as such the samples should warrant the fast tracking of analysis and reporting. **Routine analyses and samples that do not require urgent analysis should not be submitted under this category.**

In the case of public health investigations, DAL has the ability to carry out a wide range of non-routine analyses, to provide additional information relating to the investigation. The nature of the investigation will determine the type of testing carried out. Prior to submission of samples, contact should be made with the manager of the appropriate laboratory (refer to Appendix 1) to discuss the investigation. Prior notice will also enable the appropriate test materials/media to be prepared for use as soon as the samples arrive.

Information on the reason for the investigation, the number and types of samples to be submitted and when the samples will be sent to the laboratories should be provided.

Samples are analysed free of charge.

Sample Submission

A submission form must be completed and submitted with the samples (refer to Section 6).

In the case of suspected gastrointestinal illness or skin infection/rash, information (if known) should be provided as to the number of people involved, the incubation period and symptoms of illness and whether or not a doctor was consulted and pathology samples taken.

In the case of a chemical investigation, information (if known) should be provided as to the probable chemical involved.

Results Reporting

The outcome of all testing will be telephoned and faxed to the appropriate PHU. This will occur regardless of whether results **COMPLY OR DO NOT COMPLY** with the ADWG, and also for any tests carried out which do not have a Guideline value.

4.2 PHU Allocated Samples

This category covers samples provided to each PHU every year for any public health monitoring related to water quality. Samples submitted in this category are tested free of

charge, within limits set down in the Service Level Agreement between the NSW Department of Health and DAL.

Sample Submission

When utilising the additional samples allocated to each PHU, contact should initially be made with the manager of the appropriate laboratory (refer to Appendix 1). Details on the nature of the analysis, the number and types of samples to be submitted and intended submission timetable should be provided. A submission form must be completed and submitted with the samples (refer to section 6).

Results reporting

Results that **DO NOT COMPLY** with the ADWG will be telephoned and faxed to the relevant PHU, according to the procedures set down for reporting on DWMP samples (refer to Section 2.8). All results will be faxed to the relevant PHU.

4.3 Surveys/Projects

Project monitoring may be carried out to address issues of local concern or to answer broader strategic questions. To take advantage of this additional testing, Water Utilities should talk to their local PHU. Utilities must also agree to meet the sampling and reporting obligations of project monitoring. The Water Unit will then issue a project number and labels. If non-routine media or media with a short shelf life are to be used in the project, the Water Utility is asked to notify the laboratory when project samples will be submitted.

Samples are analysed free of charge.

Sample Submission

Samples submitted as part of an approved project must have an appropriate label issued by the Water Unit. Details relating to the sample are to be written on the sample label. A sample submission form is not required.

Results reporting

Results that **DO NOT COMPLY** with the ADWG will be telephoned and faxed to the relevant PHU and submitting Water Utility, according to the procedures set down for reporting on DWMP samples (refer to Section 2.8). All results will be faxed to the relevant PHU and submitting Water Utility.

PHUs and Water Utilities conducting projects are required to submit a summary report to the Water Unit upon completion.

4.4 Private Supplies Serving the Public

This category includes samples from private water supplies provided by individuals, government agencies, community organisations or businesses serving the public and/or employees. Examples include:

- ◆ Caravan parks, camping grounds and mobile home parks
- ◆ Guest houses, bed and breakfast accommodation, motels and backpackers' accommodation
- ◆ Roadhouses and restaurants
- ◆ Correctional facilities
- ◆ Schools and community halls
- ◆ Conference centres
- ◆ Recreational and sporting facilities
- ◆ Commercial food manufacturing premises
- ◆ Cafes and hotels.

Samples in this category are submitted on a fee-for-service basis.

Sample Submission

Submission of samples is by arrangement between individual clients and the DAL Water Coordinator. Sampling kits are available from DAL on request, if required. The kit comprises sample bottles for the test types requested, insulated cooler and freezer bricks, sampling instructions and a sample submission form. Samples should be collected in accordance with the NSW Health Private Drinking Water Supply Guidelines. There should be a clear cross-reference between the form and the sample containers.

Results Reporting

Clients need to arrange the reporting of results with the DAL Water Coordinator. Results that **DO NOT COMPLY** with the ADWG will be telephoned and faxed to the relevant PHU, according to the procedures set down for reporting on DWMP samples (refer to Section 2.8).

4.5 Other Private Samples

Samples in this category are submitted on a fee-for-service basis.

Examples include:

- ◆ Samples taken for operational monitoring and investigative monitoring by a Water Utility
- ◆ Samples of recreational waters, swimming pools and spas taken by local councils or private entities
- ◆ Samples submitted by individual clients for analysis or investigation.

Sample Submission

Submission of samples is by arrangement between individual clients and the appropriate laboratory manager. Unless otherwise arranged, a completed submission form must be sent with the samples (refer to Section 6). There should be a clear cross-reference between the form and the sample container. The sample identification details should be recorded directly on the sample container.

Results Reporting

Reporting to clients is by arrangement between individual clients and the appropriate laboratory manager.

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Analyses Available for Water Samples

This section lists the microbiological and chemical analyses that DAL carries out on water samples. For analyses not listed, please contact the appropriate laboratory manager (refer to Appendix 1. Contacting the Laboratories) to discuss your analytical needs and any special sampling requirements.

The laboratories are accredited with the National Association of Testing Authorities, Australia (NATA) in the fields of biological and chemical testing. A listing of specific tests for which the laboratories hold accreditation in these fields is available on request.

Guideline values for relevant microbiological, chemical, pesticide and disinfection by-product characteristics are also included. This information is taken from the *Australian Drinking Water Guidelines, 2004*.

5.1 Microbiology

Routine Tests for Samples Submitted as Part of the DWMP

Test Type	Tests Performed	Guideline Value
Standard drinking water	Total coliforms	No Guideline value
	<i>Escherichia coli</i>	No sample should contain any <i>E. coli</i> (minimum sample 100 mL)

Analyses Available on Request

Test Type	Tests Performed
Individual	Total coliforms* <i>E. coli</i> * Thermotolerant coliforms Heterotrophic/standard/total plate count (HPC/SPC/TPC) Sulphite-reducing anaerobes Faecal streptococci Enterococci <i>Clostridium perfringens</i> <i>Pseudomonas aeruginosa</i> <i>Salmonella</i> species
Water associated gastroenteritis	Organisms that may be tested for include: <i>Salmonella</i> spp. <i>Clostridium perfringens</i> <i>Vibrio parahaemolyticus</i> <i>Campylobacter</i> spp. Coliforms <i>E. coli</i>
Water associated skin infections	Organisms that may be tested for include: Coliforms <i>E. coli</i> <i>Pseudomonas aeruginosa</i> <i>Vibrio vulnificus</i> Coagulase positive staphylococci
Other water associated problems	Tests by arrangement with the Laboratory Manager

*Routine analysis is by Colilert methodology. Specify if membrane filtration or Most Probable Number techniques required.

Analyses Available for Other Water Types

Test Type	Tests Performed
Swimming/spa pool water	Heterotrophic plate count, thermotolerant coliforms and <i>Pseudomonas aeruginosa</i>
Recreational water	Thermotolerant coliforms, <i>E. coli</i> and enterococci
Waste water/polluted water	Thermotolerant coliforms and faecal streptococci
	<i>E. coli</i> and enterococci
Mineral Water	Total coliforms and <i>Pseudomonas aeruginosa</i>
	<i>E. coli</i>
Packaged water and packaged ice	Total plate count, total coliforms and <i>Pseudomonas aeruginosa</i>
	<i>E. coli</i>

5.2 Chemical / Physical

Routine Tests for Samples Submitted as Part of the DWMP

Characteristic	Guideline Values [*]	
	Health	Aesthetic ^a
Aluminium	b	0.2
Antimony	0.003	
Arsenic	0.007	
Barium	0.7	
Boron	4.0	
Cadmium	0.002	
Calcium	c	
Chloride	d	250
Chromium	0.05	
Copper	2	1
Fluoride	1.5	
Iodide	0.1	
Iron	b	0.3
Lead	0.01	
Magnesium	c	
Manganese	0.5	0.1
Mercury	0.001	
Molybdenum	0.05	
Nickel	0.02	
Nitrate (as NO ₃)	50	
Nitrite (as NO ₂)	3	
pH	b	6.5 – 8.5
Selenium	0.01	
Silver	0.1	
Sodium	d	180
Sulfate	500	250
Total dissolved solids (TDS)	d	500
Total hardness (as CaCO ₃)	d	200
True colour	d	15 HU
Turbidity	b	5 NTU
Zinc	b	3

* All values mg/L unless otherwise stated. HU = Hazen units; NTU = nephelometric turbidity units.

^a Aesthetic values are not listed if the chemical does not cause aesthetic problems, or if the value determined from health considerations is the same or lower.

^b Insufficient data to set a guideline value based on health considerations.

^c No guideline value; result used in the calculation of another characteristic.

^d No health-based guideline value is considered necessary.

Routine Tests for Fluoride Samples Submitted as Part of the DWMP

Characteristic	Guideline Value (mg/L)	
	Health	Aesthetic ^a
Fluoride	1.5	

^a Aesthetic values are not listed if the chemical does not cause aesthetic problems, or if the value determined from health considerations is the same or lower.

Analyses Available on Request

Test Type	Tests
Individual characteristics	Alkalinity Ammonia as NH ₃ Calcium hardness as CaCO ₃ Chlorate Chlorite Cobalt Cyanide (free) Iodine as I Magnesium Phosphate as PO ₄ [*] Phosphorus Potassium Silicon Silica as SiO ₂ [*] Sodium absorption ratio (SAR) Specific conductance Total organic carbon (TOC) Uranium Vanadium
Water-related public health investigations	Tests by arrangement with the laboratory manager
Other water associated problems	Tests by arrangement with the laboratory manager

* By calculation

FAQ: What is the difference between a health-related Guideline value and an aesthetic Guideline value?

A health-related Guideline value is the concentration or measure of a water quality characteristic that, based on present knowledge, does not result in any significant risk to the health of the consumer over a lifetime of consumption.

An aesthetic Guideline value is the concentration or measure of a water quality characteristic that is associated with acceptability of water to the consumer e.g. appearance, taste and odour.

5.3 Pesticides

Routine Tests for Pesticides Samples

Pesticide Group	Pesticide	Guideline Value ^a (mg/L)	Health Value ^b (mg/L)
Organochlorine, Organophosphorus Pesticides and Synthetic Pyrethroids	Aldrin ^c (and Dieldrin)	0.00001	0.0003
	Azinphos-methyl	0.002	0.003
	Bioresmethrin		0.1
	Bromophos-ethyl		0.01
	Carbophenothion		0.0005
	Chlordane ^c	0.00001	0.001
	Chlorfenvinphos		0.005
	Chlorothalonil	0.0001	0.03
	Chlorpyrifos ^c		0.01
	DDT ^c	0.00006	0.02
	Diazinon	0.001	0.003
	Dichlobenil		0.01
	Dichlorvos	0.001	0.001
	Dicofol		0.003
	Dieldrin ^c (see Aldrin)	0.00001	0.0003
	Dimethoate		0.05
	Disulfoton	0.001	0.003
	Endosulfan ^c	0.00005	0.03
	Ethion		0.003
	Ethoprophos	0.001	0.001
	Fenamiphos		0.0003
	Fenchlorphos		0.03
	Fenitrothion		0.01
	Fensulfothion	0.01	0.01
	Fenvalerate		0.05
	Heptachlor ^c (including its epoxide)	0.00005	0.0003
Lindane (g-HCH/g-BHC) ^c	0.00005	0.02	
Malathion (Maldison)		0.05	
Methidathion		0.03	
Methoxychlor	0.0002	0.3	

Continued next page

Pesticide Group	Pesticide	Guideline Value ^a (mg/L)	Health Value ^b (mg/L)
Organochlorine, Organophosphorus Pesticides and Synthetic Pyrethroids	Metolachlor	0.002	0.3
	Mevinphos	0.005	0.005
	Molinate ^c	0.0005	0.005
	Monocrotophos		0.001
	Parathion		0.01
	Parathion methyl	0.0003	0.1
	Pendimethalin		0.3
	Permethrin	0.001	0.1
	Pirimiphos-ethyl		0.0005
	Pirimiphos-methyl		0.05
	Profenofos		0.0003
	Propachlor	0.001	0.05
	Propiconazole	0.0001	0.1
	Quintozene		0.03
	Sulprofos		0.01
	Terbufos	0.0005	0.0005
	Terbutryn	0.001	0.3
	Tetrachlorvinphos	0.002	0.1
	Thiometon		0.003
	Trifluralin	0.0001	0.05
Triazine / Phenylureas Herbicides	Atrazine ^c	0.0001	0.04
	Chloroxuron		0.01
	Diuron ^c		0.03
	Fluometuron		0.05
	Hexazinone ^c	0.002	0.3
	Metribuzin	0.001	0.05
	Propazine	0.0005	0.05
	Simazine	0.0005	0.02
Glyphosate	Glyphosate	0.01	1
Carbamates	Aldicarb	0.001	0.001
	Benomyl		0.1
	Carbaryl	0.005	0.03
	Carbofuran	0.005	0.01
	Methiocarb	0.005	0.005
	Methomyl	0.005	0.03

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Pesticide Group	Pesticide	Guideline Value ^a (mg/L)	Health Value ^b (mg/L)
Carbamates	Oxamyl	0.005	0.1
	Pirimicarb		0.005
	Promecarb		0.03
	Thiobencarb		0.03
Acidic Herbicides	2,4,5-T	0.00005	0.1
	2,4-D ^c	0.0001	0.03
	Bromacil	0.01	0.3
	Bromoxynil		0.03
	Clopyralid ^c	1	1
	Dicamba		0.1
	Fenoprop		0.01
	Picloram ^c		0.3
	Propanil	0.0001	0.5
	PCP (Pentachlorophenol)	0.00001	0.01
	Triclopyr ^c		0.01

^a These are generally based on the analytical limit of determination (the level at which the pesticide can be reliably detected using practicable readily available and validated analytical methods). If a pesticide is detected at or above this value the source should be identified and action taken to prevent further contamination.

^b Based on 10% of Acceptable Daily Intake (ADI).

^c These pesticides have either been detected on occasions in Australian drinking water or their likely use would indicate that they may occasionally be detected.

5.4 Disinfection Byproducts

Group	Tested	Guideline Value (mg/L)	
		Health	Aesthetic ^a
Trihalomethanes (total)	Trichloromethane, Bromodichloromethane, Dibromochloromethane, Tribromomethane	0.25 (total)	
Chlorine dioxide by-products	Chlorate Chlorite	^b 0.3	
Chloroacetic acids	Chloroacetic acid	0.15	
	Dichloroacetic acid	0.1	
	Trichloroacetic acid	0.1	

^a Aesthetic values are not listed if the chemical does not cause aesthetic problems, or if the value determined from health considerations is the same or lower.

^b Insufficient data to set a guideline value based on health considerations.

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Forms

This section provides copies of the forms routinely used at DAL for water analyses.

The following forms are included:

1. Water Analysis Sample Submission Form

This form may be used for submission of samples for microbiological or chemical analysis. Where required, this form may be photocopied for use in submitting samples to DAL.

2. Request for Project Specific Sample Allocations

For use by Water Utilities or PHUs to request an allocation of samples for a particular project.

FORMS THAT DAL MAY SEND TO YOU

- Information Is Required to Complete Analysis
- Sample is Unable to be Analysed

WATER ANALYSIS SAMPLE SUBMISSION FORM

FOR: Microbiological Analysis Chemical Analysis Pesticides Other _____

Submitting Authority: _____ Sampling Officer: _____

Authorised Signature: _____ Telephone no: _____

Date Collected: _____ Fax No: _____

Time Collected: _____ am / pm

If sample(s) are being taken by a Water Utility on behalf of a PHU, the PHU is _____

Sample Type: Drinking Swimming Pool/ Spa Surface Water Tidal Recycled water
 Other _____

Treatment: Untreated Chlorinated Filtered UV Fluoridated

REASON FOR SUBMISSION		
Category	Details	Comments
<input type="checkbox"/> Public Health Investigation *	<input type="checkbox"/> Gastrointestinal Illness <input type="checkbox"/> Skin Infection/Rash <input type="checkbox"/> Suspected Contamination <input type="checkbox"/> Incident Investigation <input type="checkbox"/> Follow up to Complaint <input type="checkbox"/> Other	
<input type="checkbox"/> PHU Allocated *	Reason for Analysis:	
<input type="checkbox"/> Private #	Tests Required:	
<input type="checkbox"/> Request for Non-Routine Test	Tests Required:	

* Public Health Unit Use Only

Results for private supplies serving the public that do not comply with the ADWG will be notified to the relevant PHU.

SAMPLE DETAILS			
Sample Marked	Town/Location	Sampling Site	Laboratory Number
1			
2			
3			
4			
5			
6			

LABORATORY USE ONLY: **DATE/TIME RECEIVED:** _____



Project No: _____

PROPOSAL FOR PROJECT SPECIFIC SAMPLE ALLOCATIONS

Project Manager: Name: _____
Contact Details: Organisation: _____
 Tel: _____ Fax: _____
 Email: _____

Participants:	Organization	Contact information
<i>(List all water supply authorities, Public Health Unit/s and other agencies)</i>		

Project title: _____

Start Date: _____

End Date: _____

1. What is the objective of your project:
2. Where applicable, the request should consider the following: <i>Is this (1) an experimental project with a research question or hypothesis or (2) a survey or (3) an investigation of a specific problem?</i>
3. How is your proposal consistent with NSW Health and/or NHMRC monitoring recommendations?
4. Water quality varies over time – how does your project attempt to capture this variability? (e.g. sampling from the same location more than once)
5. Will you attempt to generalise your findings beyond this study? Is this necessary or important?
6. Are the subjects or locations chosen representative of the population or area? (e.g. premises sampled as a subset of all in the area, well-distributed points)
7. Type of water samples (rainwater tanks, recreational waters etc):
8. Type of analysis (microbiology, chemistry, pesticide, etc):
9. Specific tests required (if not standard tests):
10. Total number of samples (by analysis type):
11. Expected project duration (months and weeks):
12. Proposed sampling regime:

Sample Results

Results of samples to be reported to:
 Fax number for results: _____
 Email for results: _____
 Telephone for results: _____

Comments: _____

NOTE: When a result exceeds the ADWG or other appropriate guidelines, the relevant PHU will be notified by phone/fax, according to existing protocols

The project proposal should be emailed to:

- Your local Public Health Unit **and cc'd to,**
- Water Unit - Email: WATERQUAL@doh.health.nsw.gov.au

Proposal contact your local public health unit if you have any specific questions for this project

All approved project proposals are required to submit a final report within two months of the end date provided in the proposal. The format for this report is attached.

NOTIFICATION ABOUT WATER SAMPLES
Information Is Required to Complete Analysis

TO: GENERAL MANAGER
WSA:
FAX:
ATTN: WATER SAMPLING OFFICER

Please supply the following information regarding water samples submitted to DAL for testing, in order that sample registration details may be completed and the samples processed. The information required can be written on this form and the form returned by fax to the appropriate laboratory. To prevent delays in receiving results, please return the form within 24 hours. After this period samples without barcodes will be processed on a fee-for-service basis.

SAMPLE DETAILS

Analysis Type: Microbiology Chemistry

Date Sampled: _____

Barcodes(s)/Sample(s) Marked: _____

Required	Sample Detail	Water Utility to Enter Required Information Here
	Provide NSW Health barcode number	
	Provide site code number	
	Provide time of sampling	
	Provide date of sampling	
	Indicate repeat/additional	
	Provide analysis type for repeat / additional	
	Is the system chlorinated?	
	Is the system fluoridated?	
	Other	

Comments	Faxed to Water Utility by	Date Faxed

RETURN FAX TO:		
Microbiology	Chemistry	Date Returned Fax Received by Laboratory
(02) 9649 6413	(02) 9646 3718	

NOTIFICATION ABOUT WATER SAMPLES
Sample Is Unable to be Analysed

TO: GENERAL MANAGER
WATER UTILITY:
FAX:
ATTN: WATER SAMPLING OFFICER

The following samples could not be tested upon arrival at the laboratory.

SAMPLE DETAILS

Analysis Type: Microbiology Chemistry Pesticides Other

Date Sampled: _____ Date Received: _____

NSW Health Barcode / Field Identification	Water Supply System	Site Code	Laboratory Number	Reason <u>NOT</u> Tested*

***Reason not tested:**

1. Container broken
2. Container leaked – insufficient sample for testing
3. Insufficient sample taken for all tests to be carried out
4. Sample arrived >72 hours after collection (microbiology only)
5. Sample not sufficiently cool
6. Other (specify)

**Contact numbers if further
Information is required:**
Microbiology (02) 9646 0422
Chemistry (02) 9646 0424
Pesticides (02) 9646 0436

Reported By: _____ **Date Faxed:** _____

Appendix 1. Contacting the Laboratories

General Enquiries

DAL Water Project Coordinator

Phone: 02 9646 0322

Fax: 02 9646 0333

Enquiries about Microbiology Samples

Water Microbiology Laboratory Manager

Phone: 02 9646 0422

Fax: 02 9649 6413

Enquiries about Inorganic Chemistry Samples

Trace Inorganics Laboratory Manager

Phone: 02 9646 0436 / 02 9646 0221

Fax: 02 9646 3718

Enquiries about Pesticides and Disinfection Byproducts Samples

Clinical and Environmental Toxicology Laboratory Manager

Phone: 02 9646 0436

Fax: 02 9646 3718

Enquiries about Insulated Containers and Sample Deliveries

Stores Manager

Phone: 02 9646 0262

Fax: 02 9646 0205

Appendix 2. Purchase of Sample Containers

Suppliers of Sample Bottles Include:			
Bottle Type	Supplier	Container Description	Product code
Microbiology	Bacto Laboratories	350 mL PET bottles with thio added; gamma sterilised; pack of 77	CBEPET350GLT
	Biolab (Aust) Ltd	Bottle 250 mL; PET; 25mg sod thio spray; label; gamma sterilised; box of 90	LBSST250X
	Labtek	Container 250 mL PP thio sterile pack of 147	P1006506
	Crown Scientific P/L	Bottle sodium thiosulphate treated; white seal screw; PET; 500 mL; TechnoP; box of 92	PET18068SU
Chemistry 250 mL	Cospak P/L	250 mL natural HD round bottle; box of 200 White wadded caps to fit	CP250 2855
	Labtek	Bottle 250 mL HDPE with cap; pack of 372	BOT-HDPE-250 mL-white
	Bacto Laboratories	250 mL natural HDPE cylindrical bottle plus 38 mm white cello cap; carton of 105	CBE250NC
Chemistry 1 Litre	Bacto Laboratories	1 L natural HDPE round bottle, screw cello cap; carton of 48	RBE1000NC
	Labtek	Bottle 1 L HDPE 38mm neck with screw cap; carton of 126	BOT-1L-38mm
	Cospak P/L	1 L natural barrel bottle 38 – 410; box of 48 38 mm 410 white wadded cap	654 3842
Pesticides	Bacto Laboratories	1 L amber bottle with screw cap; carton of 12	PLGBRA1000M
DBP	Cospak P/L	200 mL amber round glass bottles White wadded cap to fit	H720 2453

Supplier Details:		
Supplier	Address	Telephone
Bacto Laboratories	PO Box 8511, Mt Pritchard, NSW 2170	02 9602 5499
Biolab (Aust) Ltd	PO Box 9092, Scoresby, VIC 3179	1300 735 292
Labtek	PO Box 5316, Brendale, QLD 4500	1300 881 318
Crown Scientific	121 Huntsmore Rd, Minto, NSW 2566	1300 727 696
Cospak	1 Culverston Rd, Minto, NSW 2566	02 9820 8999

DAL Address Template

URGENT WATER SAMPLES

Delivery Address

Division of Analytical Laboratories
480 Weeroona Road
LIDCOMBE NSW 2141

MICROBIOLOGY

CHEMISTRY

PESTICIDES

FRAGILE