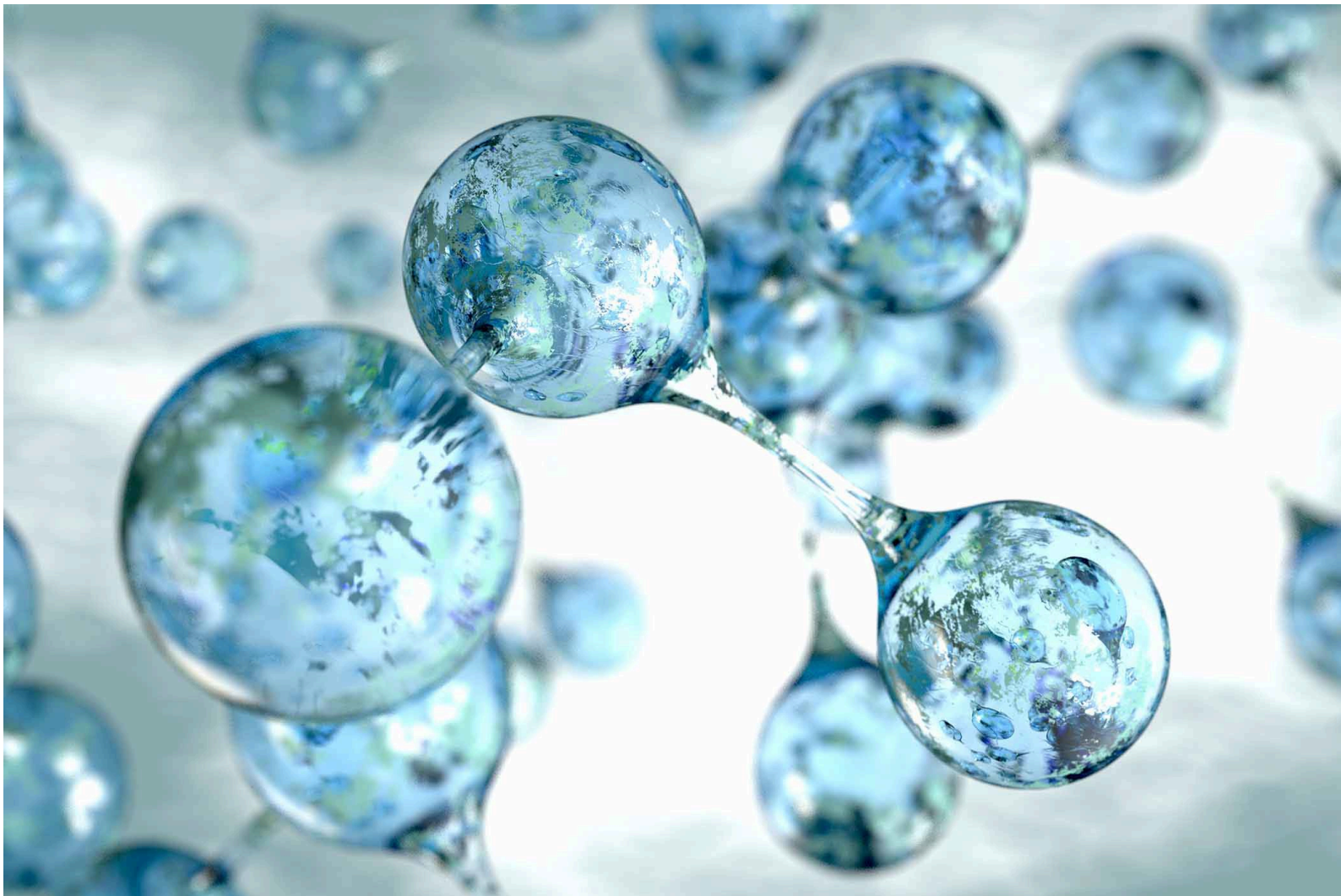


Water Laboratories Sample Submission Guide

Microbiology and Analytical Chemistry

SSGv2.03 1 July 2024

2023-2024



Document title	Water Laboratories Sample Submission Guide
Contact details	Department of Industry, Tourism and Trade
Approved by	
Date approved	1 July 2024
Document review	Annual
TRM number	N/A
Document Valid Until	30 June 2023

Version	Date	Author	Changes made
2.00	20 October 2020	Louisa Cowie	Adapted from SSG version 1.04. Change of template. Update payment information. Removed Payment Authority form. Addition of Extended Customer Details form.
2.01	9 August 2021	Louisa Cowie	Re-issue with updates for FY21-22.
2.02	10 August 2022	Stephen Poole	Re-issue with updates for FY22-23.
2.03	3 August 2023	Amanda Adams	Re-issue with updates for FY23-24.

Acronyms	Full form
NT	Northern Territory
NTG	Northern Territory Government
DITT, 'the Department'	Department of Industry, Tourism and Trade
'the Laboratories', 'we', 'us'	The three water laboratories operated by DITT, located at AZRI and BFSP
AZRI	Arid Zone Research Institute
BFSP	Berrimah Farm Science Precinct
NATA	National Association of Testing Authorities
RTM	Receiver of Territory Monies
CoA	Certificate of Analysis
CoC	Chain of Custody (also called a Submission Form)
ADWG	Australian Drinking Water Guidelines

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About the Laboratories

The NTG Water Laboratories are operated by the Department of Industry, Tourism and Trade (DITT). Laboratories are located within the Berrimah Farm Science Precinct (BFSP) in Darwin (microbiology and chemistry) and the Arid Zone Research Institute (AZRI) in Alice Springs (microbiology only).

All facilities operate on a fee for service basis and are accredited by the National Association of Testing Authorities (NATA), accreditation number 15104. The scope of accredited services can be viewed on the [NATA website](#)¹.

Contact Information

<https://industry.nt.gov.au/industries/primary-industry/laboratory-services/water-laboratories>

Water Chemistry Darwin

BAL Building, Berrimah Farm Science Precinct
29 Makagon Rd, Berrimah NT 0828
p: +61 8 8999 2194 | f: +61 8 8923 9566
WaterLabsDarwin.DITT@nt.gov.au

Accreditation Site No. [15577](#)

Water Microbiology Alice Springs

Arid Zone Research Institute (AZRI)
South Stuart Highway, NT 0870
p: +61 8 8951 8110 | f: +61 8 8951 8116
WaterLabAliceSprings.DITT@nt.gov.au

Accreditation Site No. [16420](#)

Water Microbiology Darwin

Vet Lab Building, Berrimah Farm Science Precinct
29 Makagon Rd, Berrimah NT 0828
p: +61 8 8999 2347 | m: +61 401 115 803 | f: +61 8 8923 9566
WaterLabsDarwin.DITT@nt.gov.au

Accreditation Site No. [16639](#)

Hours of operation

The laboratories are attended from Monday to Friday (excluding public holidays):

Darwin - 8am to 4:30pm
Alice Springs - 8.30am to 4:30pm

Different hours apply for receiving samples – refer to the table below or contact the relevant lab.

¹ www.nata.com.au

Samples must be submitted within with the hours indicated in Sample Reception Days and Times table, and at least 30 minutes before close of business.

Samples will not be accepted outside these hours except in an emergency. Samples received or testing performed outside of business hours will incur substantial overtime charges. Customers must contact the laboratory in advance to arrange for a staff member to attend the laboratory outside of business hours.

Sample reception		
Samples will only be accepted during the following days and times		
Water Chemistry Darwin	Mon-Fri	8am to 4pm
Water Microbiology Alice Springs	Mon-Wed: Total Coliforms, E. coli, Enterococci, Colony (Plate) counts Thu: Total Coliforms, E. coli & Enterococci (MPN methods only)	8.30am to 4pm
Water Microbiology Darwin	Mon- Wed: Total Coliforms, E. coli (MPN), Enterococci, Colony (Plate) counts, Pseudomonas aeruginosa Thu: Total Coliforms, E. coli & Enterococci (MPN methods only)	8am to 4pm
	Mon- Wed: Thermotolerant Coliforms and E. coli (Membrane Filtration)	8am to 12pm
	Legionella testing: by pre-arrangement only, notify the laboratory at least two weeks in advance.	

Sample reception days are subject to change due to public holidays. Please take this into account when collecting and submitting samples, particularly in relation to [Holding times](#). Contact the receiving laboratory for more information.

NT Public Holidays

The following public and regional holidays apply to the Northern Territory in the 2021-2022 financial year:

Holiday	Date of Public Holiday	Impact on services
Alice Springs Show Day	Friday 7 July 2023	Alice Springs Laboratory closed. No change to services at Darwin Laboratories.
Darwin Show Day	Friday 28 July 2023	Darwin Laboratories closed. No change to services at Alice Springs Laboratory.
Picnic Day	Monday 7 August 2023	All laboratories closed.
Christmas Day	Monday 25 December 2023	All laboratories closed.
Boxing Day	Tuesday 26 December 2023	All laboratories closed.
New Year's Day	Monday 1 January 2024	All laboratories closed.
Australia Day	Friday 26 January 2024	All laboratories closed.
Good Friday	Friday 29 March 2024	All laboratories closed.
Easter Monday	Monday 1 April 2024	All laboratories closed.
Anzac Day	Thursday 25 April 2024	All laboratories closed.
May Day	Monday 6 May 2024	All laboratories closed.
Monarch's Birthday	Wednesday 12 June 2024	All laboratories closed.

Terms and conditions

Scope of services

The Laboratories provide services to the Power and Water Corporation, government agencies, private enterprise and members of the public.

A limited range of physical, chemical, and microbiological tests are available, as described in the [Fees and Services](#) section. The Laboratories do not offer sample collection, transportation, or consultancy services. Limited interpretation of the results may be offered, for example with reference to the Australian Drinking Water Guidelines (ADWG).

The Laboratories may be able to guide you towards reputable sources of water quality information, refer you to other government agencies or suggest alternative service providers for specialised water testing.

Conditions of service

By submitting samples to the Laboratories, you accept these terms and conditions and agree to pay for any goods or services supplied to you by the Laboratories. These terms and conditions are available on the [Water Laboratories website](#)² and will be supplied on request by the Laboratories. The Laboratories reserve the right to update these terms and conditions at any time. Terms and conditions are subject to change without notice.

Submission of samples to the Laboratories does not relieve any person of any legal obligations. Once submitted to the Laboratories, samples and derivatives become the property of the Laboratories and cannot be returned to the client. The Laboratories may agree, on a case-by-case basis, to supply these materials to an appropriate third party, such as another laboratory, for additional or specialised testing at the client's expense. If you intend to request such a service, please arrange with the laboratory before submitting any samples; samples and derivatives are only retained for a limited period following testing.

We reserve the right to unlimited use of samples, client information and result data for purposes including but not limited to training, quality assurance, test method and IT development, statistical analysis and record keeping. All client information collected by the Laboratories, including sample and result data, is subject to our [Privacy and Confidentiality](#) policy.

Laboratory criteria for accepting samples

Samples are accepted at the discretion of the receiving laboratory. The Laboratories reserve the right to refuse service at their discretion.

Clients must comply with the [sample reception hours](#), [sample collection](#) and [sample submission](#) requirements of the testing laboratory.

The Laboratories will not accept samples that are unsuitable for testing. Common reasons for refusing to accept a sample include:

- The sample was not collected in a suitable [container](#)
- the sample was not delivered within the specified [holding time](#), and the test results considered unreliable

² <https://industry.nt.gov.au/industries/primary-industry/laboratory-services/water-laboratories>

- the microbiological sample was not refrigerated during transport and the temperature on arrival exceeds 2-8°C for longer than 3 hours from collection. Samples received over 30°C may not be accepted, depending on the temperature at collection.
- the sample represents an unacceptable risk to laboratory staff and visitors, including chemical, biological or radiological hazards
- the sample material or tests required do not fall within the Laboratories' scope of accreditation or the scope of services offered by the laboratory (refer to [Fees and services](#), or look up our scope of accreditation on the NATA website)
- the sample was submitted outside usual [sample reception](#) hours
- the client has bad debt, or a history of not meeting the Laboratories [payment terms](#).

Delivery of results

Turn-around times

Chemistry testing and reporting of results may take 2-3 weeks, please confirm with the laboratory at time of submission. Microbiology testing and reporting of results is usually concluded within 7-10 days, however, the Laboratories reserve the right to alter turn-around times without notice, particularly during periods of peak demand.

If the test results are urgently required, the Laboratories may negotiate shorter turn-around times on a case-by-case basis. Contact the individual laboratory manager or lab supervisor to discuss your case. Please be aware that the Laboratories cannot deliver a result in less time than is required to complete the test method; some standard analytical methods in use within the Laboratories include mandatory incubation periods of up to 10 days.

Some test results may be available prior to completion of the full test package. Refer to the section on [Interim reports](#).

Result format

Your test results will be presented in the form of a Certificate of Analysis (CoA), which may be distributed to you in *.pdf or hardcopy form.

Email is the preferred method for delivering CoAs. On request, the Laboratories may agree to deliver CoAs via conventional mail or facsimile. Delivery of CoAs by conventional mail will add several additional days to the turn-around-times indicated above.

When submitting a sample, ensure you include accurate contact information (such as an email address) to facilitate timely delivery of your CoA.

Interim reports

If you require access to some of your results before all the tests have been completed, you can request an interim CoA. An interim CoA will only include test results that have already been completed and reviewed. The Laboratories reserve the right to charge a report re-issue fee for interim reports. To receive this service, you must comply with the payment terms as described below.

Payment

The Laboratories require payment for services before releasing test results. You can make payments via the NTG Receiver of Territory Monies (RTM). A receipt (tax invoice) will be issued once the payment has been processed.

Clients using a purchase order system must supply the correct purchase order number to the receiving laboratory at the time of sample submission and to the RTM when making a payment. Failure to supply the correct purchase order number may result in additional charges for the re-issue of invoices.

Clients are understood to have accepted the Department's finance requirements, as stated in this document, as part of the terms of contract. Any departure from these terms must be by written agreement with the Department.

Failure to comply with the Department's financial requirements will result in the cessation of services. Results may be withheld until payment is received.

Payment Methods

Cheques must be made out to RTM (Receiver of Territory Monies). Cheques may be presented to the testing laboratory.

Cash/Debit Card payments may only be made in person at the RTM locations below (8:30am – 4:00pm, Mon-Fri). Please contact your testing laboratory before making a payment.

Credit Card payments may be made during business hours (8:30am – 4:00pm, Mon-Fri) either by phone³ or in person at the RTM locations below.

Contact your testing laboratory for a Payment Instructions Form⁴ before contacting the RTM.

RTM Locations

RTM Alice Springs	RTM Darwin	RTM Katherine
1 st Floor, Alice Springs Plaza Todd Street Mall Alice Springs NT 0870	Manunda Place 38 Cavenagh Street Darwin NT 0830	1 st Floor, Government Centre First St Katherine NT 0850
RTM PO Box 4037 Alice Springs NT 0871 RTMAlice@nt.gov.au 08 8951 6491	RTM GPO Box 199 Darwin NT 0801 RTMDarwin@nt.gov.au 08 8999 1628 08 8999 1606	RTM PO Box 1171 Katherine NT 0851 RTMKatherine@nt.gov.au 08 8973 8715

Direct Debit is only available to clients who are invoiced via the Government Accounting System (GAS). At the discretion of the Department, selected clients may apply to be invoiced for goods and services; strict

³ In accordance with the Payment Card Industry Data Security Standard, we discourage clients from giving credit card information to laboratory staff, either verbally, in writing or via email. We prefer for you to contact RTM operators or DITT business managers, who are able to enter your credit card details directly into a secure electronic payment system (such as EFTPOS).

⁴ Please be mindful of the security of your financial information. If you have any doubts about the authenticity of a request for payment, use independent means to verify the credentials of the person or organisation making the request. Contact details for the RTMs or the Laboratories can be verified by searching <https://nt.gov.au/> or <https://industry.nt.gov.au/> respectively. NTG employees will always correspond from an email address ending in @nt.gov.au.

30-day payment terms apply. To qualify, the client must have a good credit record and complete the vendor enrolment process to set up their record within the Government Accounting System.

Cancellations

In general, until you have submitted a sample for testing, you can cancel the request for service without penalty or obligation. However the Laboratories reserve the right to recover costs from you under certain circumstances, such as:

- If staff have attended the laboratory after-hours at your request (e.g. to take receipt of a sample)
- results have already been issued
- if the laboratory has purchased special reagents or consumable items in order to undertake your testing requirements, where you have previously confirmed your intention to proceed with testing.

Once you have submitted a sample for testing, cancellation without penalty **may not be possible**. Some tests, including most microbiology tests, will be commenced immediately after delivery of the sample to the laboratory. If a submission is cancelled after testing has commenced, the Laboratories reserve the right to charge for any work that was started prior to the notice of cancellation.

If you need to cancel a sample submission, please contact the relevant laboratory **immediately**.

Privacy and confidentiality

DITT and other NTG Agencies comply with the Information Privacy Principles as set out in the [Information Act](#)⁵, and will only disclose your personal information or result data as requested by you or as required by law. For more information, refer to [Privacy: your rights](#)⁶.

Complaints

The Water Laboratories have internal complaint handling procedures. In the first instance, contact the relevant laboratory supervisor for assistance with your query. You may be asked to provide details of the incident and/or complete a written complaint form.

Other options include using the DITT [Feedback](#)⁷ form. Additional information regarding [Making a complaint about government](#)⁸ can be found on the NTG website.

Sampling instructions

Due to the chemical, physical or biological limitations of the test methods, different fields of testing, and individual tests, may have different requirements for collecting, storing, transporting and delivering samples. Although this multitude of requirements can be daunting, the more closely you comply with these recommendations, the more confident you can be that the laboratory will be able to complete the testing you require, and that your test results will accurately represent the water from which you are sampling.

Selecting sample bottles

⁵ <https://legislation.nt.gov.au/en/Legislation/INFORMATION-ACT-2002>

⁶ <https://nt.gov.au/law/rights/privacy-your-rights>

⁷ <https://industry.nt.gov.au/feedback>

⁸ <https://nt.gov.au/contacts#:~:text=Making%20a%20complaint%20about%20government&text=Most%20departme nts%20have%20a%20feedback,section%20of%20the%20department%20website>

Microbiology sample bottles are not suitable for most types of chemical testing, and vice versa. Please ensure you use the correct bottles for the type of testing you require.

[Appendix 2](#) lists bottle requirements and sample volumes for a range of tests offered by the Laboratories.

Bottles for chemical and physical testing

Special bottles **are not required** when collecting samples for chemical and physical testing. Clean plastic bottles are preferred. Typically, the laboratory will require a one-litre sample to complete one of the broader test packages on offer. Bottles are available from the chemistry laboratory for a fee.

Bottles for microbiological testing

Sterile sample bottles containing Sodium thiosulphate are **mandatory** when collecting water samples for microbiological testing. Suitable bottles are available from the microbiology laboratories for a fee.

Collecting water samples

Clients are responsible for the development of their own sampling program and sample collection techniques appropriate to their circumstances, however the Laboratories offer the following general guidance on collecting water samples.

Collecting a sample for chemical or physical testing

If collecting from a tap, allow the water to run for a few minutes. Rinse the sample container once with some of the water to be collected, then discard the rinse water. Fill the sample container to overflowing, leaving no air gap.

Collecting a sample for microbiological testing

Refer to Appendices [3](#) and [4](#) for information on sampling of drinking waters for microbiological testing.

Documenting sample information

Complete a Chain of Custody (CoC) form for each laboratory and each submission of samples. Each DITT water laboratory has a separate Chain of Custody form - see Appendices [5](#), [6](#) and [7](#).

Remember to include your contact information.

Ensure each sample bottle is correctly labelled and uniquely identified, so the laboratory can easily match your sample to the corresponding entry on your Chain of Custody form.

Specify the test package or individual tests required for each sample you submit

Record the date and collection time of all samples

For microbiological samples, confirm if a compliance statement with Australian Drinking Water Guidelines is required (*E.coli* only). Choosing this option acknowledges that Measurement Uncertainty will not be applied when compliance is assessed.

Submit the completed form to the laboratory along with your samples.

Submitting a sample for testing

Clients must ensure they submit samples to the appropriate laboratory (i.e. samples for chemical testing must be submitted to the chemistry laboratory).

Holding times

Water samples must be delivered to the laboratory within a short time of collection:-

Where possible, samples for physical and chemical testing should be delivered to the laboratory within 48 hours of collection. Samples are accepted on an 'as received' basis. Holding times are calculated for each test; those which exceed the recommendations⁹ are indicated on the Certificate of Analysis.

Strict holding times apply for microbiological testing. Microbiological samples must arrive at the Laboratories within a maximum of 24 hours¹⁰ from collection. Samples that exceed the maximum holding time are usually deemed unsuitable for testing. Holding times for each test are indicated on the Certificate of Analysis. Testing which occurs outside the maximum holding time must be considered indicative only.

The recommended holding times for each type of test are described in [Appendix 2 – Sample bottles, sample preservation and holding times](#).

If samples are delivered within the advertised [Sample reception days and times](#), the Laboratories will make every effort to ensure analyses commence within the required holding time. Where samples are delivered outside sample reception hours, the Laboratories may not be able to commence analyses within the required holding time.

Storing, transporting and delivering samples

For immediate delivery within the local area of the laboratory, keep your samples clean, upright to prevent leakage, and protect them from excessive heat, cold or physical damage.

When samples will be received by the laboratory > 3 hrs from collection, samples from farther afield or via a courier or delivery service, more extensive preparations are required.

Storage

Refrigeration of samples helps to delay deterioration of target microorganism and therefore the ability of the applied testing to detect them. This does not override the need to deliver samples within the holding times indicated above. Sample storage details and requirements are:

- The required storage temperature of samples tested at the DITT Microbiological laboratories is between 2-8°C.
- Samples outside of the temperature range will be processed by the laboratory provided other acceptance criteria are met. The following comment is applied to the Certificate of Analysis:

The samples were received in excess of 3 hours from time of collection and outside the temperature range of 2-8 degrees Celsius, the test results may be affected by the temperature deviation.

NOTIFY THE RELEVANT LABORATORY BY EMAIL IF YOU DO NOT ACCEPT THIS COURSE OF ACTION.

⁹ APHA 1000 *Maximum Storage Time (Regulatory values)*

¹⁰ AS2031

- Refrigerate the samples or place in a cooler with ice bricks during any delay. If possible, chill any warm samples prior to packing.
- **Do not freeze water samples.**
- Avoid using loose ice to chill samples; meltwater from loose ice can be a source of contamination, particularly for microbiological samples. The cleanliness of the interior of storage and transport containers should be considered.

Packing samples

Place water samples upright in an insulated container such as a cooler (esky). Disposable eskies are acceptable, but will not withstand frequent re-use.

Insert ice-bricks between, above or below the samples to provide cooling during transit.

Once the samples and ice bricks are in place, add clean packing material as necessary to ensure the samples cannot move around or fall over during transit.

Secure the container lid so it does not come loose in transit. Some containers may need to be sealed with packing tape.

Paperwork packed within the transport container should be sealed in a plastic bag to prevent water damage.

The sample package must be labelled on the outside with the laboratory and building name, address, contact person and phone number. Include the name of the sender and the address of origin.

Transportation and delivery

If you are unable to deliver a sample in person, you will need to use the services of a third party.

A range of courier and freight services operate within the Northern Territory. Investigate the services available within your local area to find one that best meets your logistical requirements, taking into account:

- What time you will collect the sample
- What time the delivery service operates (departs and arrives)
- Sample reception times at the receiving laboratory
- Other considerations, such as availability of refrigerated transport vehicles

Ensure that your agent understands the water samples must be delivered to the laboratory within a strict holding time. It may help to indicate the latest delivery time on your sample package (e.g. "Urgent water samples for delivery by 09:00 hrs").

Note: If you are not able to attend the laboratory in person, please make sure your completed CoC (submission) form accompanies the samples. At a minimum, include your comprehensive contact information so the Laboratories are able to determine your requirements once the sample arrives. If you need help completing the form, contact the Laboratory for assistance before collecting the samples.

Fees and services

Sample handling and administration		\$ (inc GST)
Administration and reporting fee Sample registration, administration and invoicing (charged once per group of samples submitted or per report issued)		37.01
Service fee (per half hour or part thereof) Sample and container collection from courier depot for client Sample forwarding Sub-contracted testing management		61.41
Courier charges - sample forwarding and container return (if courier account not provided)	small container or esky	76.31
	large container or esky	126.81
Additional report copy		38.86
Additional invoice		38.86
Additional report copy – urgent request Seven days or less		64.84
Sample bottle supply		
250mL, 500mL Microbiology bottle with sodium thiosulphate Bacteriological analysis of potable, environmental, swimming pool & waste waters		3.22
250mL, 500mL, 1000mL Chemistry Bottle General physical and chemical testing, including chlorophyll, BOD		1.97
Laboratory overtime charges		
Overtime is available only in emergency situations or by negotiation and only for microbiology testing. Hourly rate or weekend block rate applied to total laboratory workload for on-charging to individual clients. Please contact the microbiology laboratories for more information.		
Monday to Friday after hours work definition:		
Sample delivery after 4pm daily (or by negotiation) requiring critical sample processing after 4:30PM		
	Hourly rate or part thereof (first 3 hours)	114.06
	Hourly rate or part thereof (after first 3 hours)	152.12
Saturday overtime		
Samples received on Thursday or Friday which require analysis on Saturday; samples received on a Saturday.		
	Minimum charge (up to 4 hours)	494.35
	Hourly rate, or part thereof, after 4 hours	152.12
Sunday overtime		
Samples received Friday or Saturday and require analysis on Sunday, samples received on a Sunday.		
	Minimum charge (up to 4 hours)	608.41
	Hourly rate, or part thereof, after 4 hours	152.12
Public Holiday overtime		
Samples received or analysis completed on public holiday.		
	Minimum charge (up to 4 hours)	760.52
	Hourly rate, or part thereof, after 4 hours	190.12

Test Packages – Microbiological		\$ (inc GST)
# Package not available at Alice Springs Laboratory		
Potable (Drinking) Water Package Total Coliforms, <i>E. coli</i> and HCC	treated waters untreated waters	83.63 83.63
Basic Potable Package Total Coliforms and <i>E. coli</i>	treated waters untreated waters	64.84 66.70
#Swimming Pool Package Total Coliforms, <i>E. coli</i> , <i>Pseudomonas aeruginosa</i> and HCC		134.33
Re-use Wastewater Package Total Coliforms and <i>E. coli</i>		83.63
Wastewater <i>E. coli</i> and Enterococci Package <i>E. coli</i> and Enterococci		88.21
Individual Tests - Microbiological		
Method Reference; Detection Limit		
# Test not available at Alice Springs Laboratory; * Test not within scope of NATA accreditation		
Total Coliforms Idexx Colilert AS4276.21-2005; DL: 1 cfu/100mL	treated waters untreated waters	42.63 43.89
<i>E. coli</i> Idexx Colilert AS4276.21-2005; DL: 1 cfu/100mL	treated waters untreated waters	42.63 43.89
Enterococci Idexx Enterolert ASTM D6503-14 (2014); DL: 1 cfu/100mL		46.89
Heterotrophic Colony Count (HCC) Pour plate method 44h@36C AS4276.3.1-2007; DL: 10 cfu/mL	treated waters untreated waters	36.20 37.28
# <i>Pseudomonas aeruginosa</i> Membrane Filtration AS4276.13-2008; DL: 1 cfu/100mL		50.65
Thermotolerant coliforms and <i>E. coli</i> # Membrane Filtration AS7276.7-2007; DL: 1 cfu/100mL		64.84
** <i>Legionella</i> AS3896; DL: 10 cfu/mL		162.28
Test Packages - Chemical and Physical		
Complete Potable Analysis - bore testing (WG_1) pH, Conductivity, TDS180, Sodium, Potassium, Calcium, Magnesium, Total Hardness, Total Alkalinity (includes hydroxide, carbonate & bicarbonate), Iron, Chloride, Sodium Chloride (calculated), Sulfate, Silica, Nitrate, Fluoride		212.82
Extended Potable Analysis (WG_PWC) As for Complete Potable with addition of: True and Apparent Colour, Turbidity		250.71
Standard Wastewater (WW_1) pH, Conductivity, Total & Volatile Suspended solids, BOD5, Total Phosphorus, Reactive Phosphorus, Free Ammonia & Organic Nitrogen		228.16
Extended Wastewater (WW_PWC) As for Standard Wastewater with addition of: Alkalinity, COD, oxides of nitrogen (NOx), Calcium hardness (Ca, Mg)		351.85

Test Packages - Chemical and Physical (continued)	
Total Iron and Manganese (WE_3) Includes ICP analysis and acid digestion	55.95
Alkalinity and Hardness (WG_2) Includes Calcium, Magnesium by ICP, Hardness - calculated; Total alkalinity titration	66.10
Major Ions (WW_ION) Calcium, Magnesium, Sodium, Potassium, Chloride, Fluoride, Carbonate/ Bicarbonate	78.82
\$ (inc GST)	
Individual Tests – Physical	
Lab Code; Method Ref – APHA ¹¹ ; Detection Limit	
pH M07; 4500-H B; Range 2-11	8.90
EC, Electrical Conductivity (includes Total Dissolved Salts, calculation) M08; 2510 B; 1 µS/cm	8.90
Suspended Solids (103-105°C) M12; 2540 D; 1 mg/L	21.61
Volatile Suspended Solids (550°C) M12; 2540 E; 1 mg/L	38.15
Suspended Solids and Volatile Suspended Solids (550°C) M12; 2540 D, E; 1 mg/L	38.15
Total Dissolved Solids Dried at 180°C (TDS180) M05; 2540 C; 1 mg/L	31.77
UV Absorbance at 254nm M23; 5910 UV; 0.005 cm ⁻¹	25.05
True and Apparent Colour (456nm) M21; 2120 C; 2 CU	25.05
Dissolved Oxygen M09; 5210 B; 1mg/L	12.71
Turbidity M22; 2130 B; 2 NTU	12.71
Individual Tests – Chemical	
Alkalinity (includes pH, carbonate, bicarbonate & hydroxide) M04; 2320 B; 20 mg CaCO ₃ / L	19.10
Biochemical Oxygen Demand (BOD 5) M09; 5210 B; 1 mg/L	44.49
Chemical Oxygen Demand (COD) M13; in-house method B; 50 mg/L	31.77
Free Ammonia-N M11; 4500-NH ₃ B; 0.3 mg/L	25.44
Organic Ammonia-N M11; 4500-Norg D; 0.4 mg/L	33.08
Free Ammonia and Organic Nitrogen M11; 4500 B&D; 0.3 mg/L, 0.4mg/L	58.57
Total Oxides of Nitrogen as N (NO _x -N) M17; 4500-NO ₃ F; 0.1 mg/L	31.77
Filterable Reactive Phosphorus as P M10; 4500 P F; 0.1 mg/L	21.61
Total Phosphorus M10; 4500 P B(5); 0.1 mg/L	38.15

¹¹ APHA - Standard Methods for the Examination of Water and Wastewater, American Public Health Association

Individual Tests – Chemical (continued)	
* Test not within scope of NATA accreditation	
*Calcium Oxide content of commercial Lime M14; ASTM C25-99; n/a	83.68
Chloride M02; 4500-Cl D; 2 mg/L	19.10
Fluoride M03; 4500-F C; 0.1 mg/L	21.61
*Chlorine - Residual/free M25; 4500-Cl G; n/a	38.04
\$ (inc GST)	
Individual Tests - Metals/ Major Cations (ICP_AES)	
Metals/ ions soluble - Sodium, Potassium, Calcium, Magnesium, Sulfur as sulfate, Silicon as silica) M01; 3120B; 0.7, 0.3, 0.1, 0.05, 0.1, 0.15 mg/L	40.72
Metals soluble - Iron, Manganese (per additional element) M01-1; 3120 B; 0.02, 0.007 mg/L	5.08
Metals total - Iron, Manganese – includes digestion M01-2; 3030 E; 0.02, 0.007 mg/L	55.95
Digestion for Total Metals M01-A; 3030 E; n/a	15.23
Filtration	potable waters 6.39 waste waters 8.90
Calculation of final figure from raw data items	6.39
Individual Tests - Environmental	
*Chlorophyll-a & Pheophytin-a M20; 10200 H; n/a	76.09

Please Note: A minimum test fee of \$25 applies. If the sum of the selected test fees is less than \$25, the amount will be rounded up to \$25 plus the Administration and Bottle supply fees.

Appendix 1 - Calculating fees and charges

Formula	
No. of samples x Test/Package Fee	= \$ _____
No. of samples x Bottle Fee	= \$ _____
Admin and Reporting Fee	= \$ _____
Overtime Charges	= \$ _____ +
Total	= \$ _____

Example: 2 Samples for Potable Package (Microbiology)	
2 x Potable package @ \$83.63 =	\$167.26
2 x Microbiology bottle @ \$3.22 =	\$6.44
1 x Admin fee @ \$34.82 =	\$37.01
Total =	\$210.71

Frequently used packages:

Number of Samples	Microbiological Testing							Chemical Testing	
	Potable Package	Swimming Pool Package	Basic Potable	E. coli (Treated or Potable water)	E. coli (Untreated or Waste water)	Enterococci	Plate Count	Complete Potable Analysis (WG_1)	Standard Waste water (WW_1)
1	\$123.86	\$174.57	\$105.08	\$82.86	\$84.13	\$87.12	\$76.43	\$251.81	\$267.15
2	\$210.71	\$312.12	\$173.14	\$128.71	\$131.24	\$137.23	\$115.85	\$466.60	\$497.28
3	\$297.55	\$449.67	\$241.21	\$174.56	\$178.35	\$187.34	\$155.26	\$681.39	\$727.41
4	\$384.40	\$587.22	\$309.27	\$220.40	\$225.46	\$237.45	\$194.68	\$896.19	\$957.54
5	\$471.25	\$724.77	\$377.33	\$266.25	\$272.57	\$287.56	\$234.09	\$1,110.98	\$1,187.68
6	\$558.10	\$862.33	\$445.40	\$312.10	\$319.69	\$337.67	\$273.51	\$1,325.77	\$1,417.81
7	\$644.94	\$999.88	\$513.46	\$357.94	\$366.80	\$387.78	\$312.93	\$1,540.57	\$1,647.94
8	\$731.79	\$1,137.43	\$581.52	\$403.79	\$413.91	\$437.89	\$352.34	\$1,755.36	\$1,878.07
9	\$818.64	\$1,274.98	\$649.59	\$449.64	\$461.02	\$488.00	\$391.76	\$1,970.15	\$2,108.20
10	\$905.48	\$1,412.54	\$717.65	\$495.49	\$508.14	\$538.11	\$431.17	\$2,184.95	\$2,338.34

Appendix 2 – Sample bottles, sample preservation and holding times

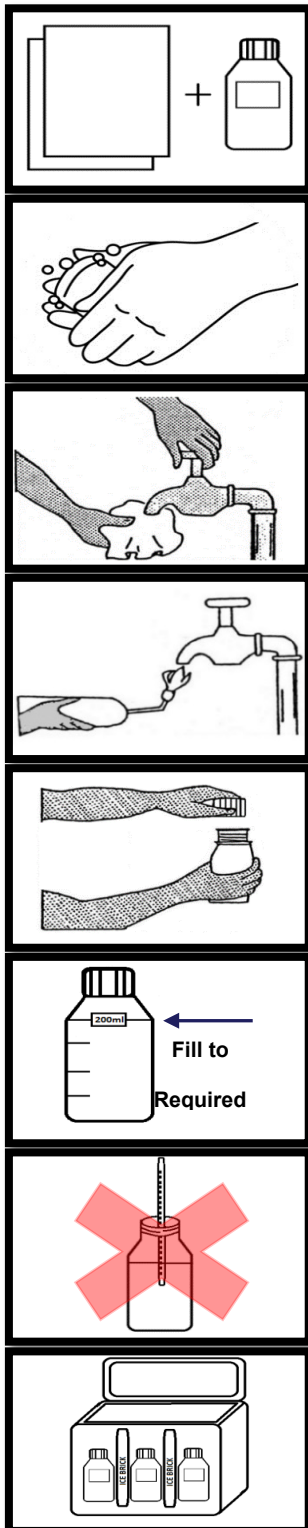
Analysis	Sample Bottle	Sampling	Storage and preservation	Maximum holding time	Deliver samples to
General Phys/Chem – standard suite, potable or waste	1 L plastic	No air gap	Iced or chilled to $\leq 6^{\circ}\text{C}$	48 hours	Water Chemistry
Fluoride only	250 mL plastic	No air gap	No storage requirements	28 days	
Iron & Manganese only	250 mL plastic	No air gap	Filtered and acidified on arrival	48 hours	
Chlorine only	500 mL plastic	No air gap	Transfer to laboratory as soon as possible	15 minutes - read on site where possible	
Colour/Turbidity/UV abs only	500 mL plastic	No air gap	Iced or chilled to $\leq 6^{\circ}\text{C}$	2 days	
Major Ions only	500 mL plastic	No air gap	Iced or chilled to $\leq 6^{\circ}\text{C}$	7 days	
BOD only	500 mL plastic	No air gap	Iced or chilled to $\leq 6^{\circ}\text{C}$	48 hrs	
Nutrients (macro) only - Ammonium, Phosphorus, oxides of Nitrogen	500 mL plastic	No air gap	Iced or chilled to $\leq 6^{\circ}\text{C}$	<48 hrs	
Suspended and volatile solids	500 mL plastic	n/a	Iced or chilled to $\leq 6^{\circ}\text{C}$	7 days	
Chlorophyll	1 L plastic (kept in dark or covered)	Air gap	Iced or chilled to 4°C	24 hrs	
Total Coliforms (MPN) <i>E. coli</i> (MPN), Enterococci (MPN), Heterotrophic Colony Count	250mL sterile bottle with sodium thiosulphate ↑ ↓	↑ Air gap ↓	↑ Refrigerate or chill with ice bricks to $2^{\circ}\text{C} - 8^{\circ}\text{C}$ ↓	↑ Maximum 24 hrs ** ↓	
Potable package, Basic Potable Package, Wastewater Packages					↑
<i>Pseudomonas aeruginosa</i>					↓
Thermotolerant Coliforms and <i>E. coli</i> (Membrane Filtration)					↓
Legionella					↓
Swimming Pool Package	500mL sterile bottle with sodium thiosulphate				Water Microbiology - DARWIN ONLY

** Recommended maximum holding time for all microbiological samples is 6-8 hours

Appendix 3 - Sample collection for bacteriological analysis of potable water

Phone: Darwin (08) 89992347

Alice Springs (08) 89518110



- Collect a sterile sample container for each site to be sampled and the required forms from the laboratory.
- Prior to collecting the sample, label the sample container and complete the sample submission form. For each site record the sample bottle number on the sample submission form and record sample site details.
- Wash and dry hands and ensure that the immediate area is clear of possible contaminants or clutter.
- Clean and disinfect the tap that is to be the sampling point. Remove any aerators, strainers or attachments from the tap if present.
- Disinfection by flaming the tap opening with a butane torch is preferred. If this is not possible or the tap is unsuitable for flaming then swab the tap opening with isopropyl alcohol swab.
- Flush the system for two minutes with a high rate of flow.
- Reduce flow to a steady stream approximately the width of a pencil.
- Carefully remove the lid of the sampling container, taking care not to contaminate the lid or the container with fingers or non-sterile surfaces.
- Fill the bottle to within 2-3 cm of the neck. The air gap allows for adequate mixing at the laboratory. A minimum of 200mL of sample is required for a potable package.
- Do not rinse the bottle or over-fill.
- Replace the lid, taking care not to touch the inside of the lid or the neck of the bottle. Screw the lid down firmly.
- Do not use the sample to test for onsite observations such as temperature, pH or chlorine.
- Transport the samples to the laboratory without delay. Samples must be accompanied by a completed submission form. Ensure your samples are suitably packaged and the courier is aware of the delivery requirements. Samples must be received chilled and within 24hrs from collection to be analysed.
- Do not use loose ice to cool samples. Do not freeze samples. An esky with an ice brick is the most suitable vessel for transportation.

Disclaimer: While all care has been taken to ensure that information contained in this information sheet is true and correct at the time of publication, the Northern Territory of Australia gives no warranty or assurance, and makes no representation as to the accuracy of any information or advice contained in this publication, or that it is suitable for your intended use. No serious, business or investment decisions should be made in reliance on this information without obtaining independent and/or professional advice in relation to your particular situation.

Appendix 4 - Submitting water samples for bacteriological analysis

Sample bottles for bacteriological analysis of water

The water microbiology laboratories supply sterile bottles for the collection of water samples (a suitable sterile bottle is a requirement for the test). Suitable bottles are available for collection from the water microbiology laboratories as required. A small bottle fee will be included in the charges for testing.

Please only take enough bottles for your immediate sampling requirements. Expiry timeframes apply to sample bottles. Store sample bottles in a clean, dry place such as in a clip-lock plastic bag.

Transport your samples in a clean esky that is only used for the purpose of transporting water samples. Cool the samples with ice bricks and pack the samples securely so they will not be damaged during transport. Never use loose ice to cool water samples. If the samples are submerged in ice slurry they may become contaminated and the results may be unreliable. Do not freeze bacteriological water samples.

Identification of water samples and sample collection points

When submitting a sample please supply the following information as a minimum: customer name, contact phone number, locality name or project title, sample name or description, date and time of sample collection, tests required. We recommend supplying an email address whenever possible.

It is important that each sample is labelled with some form of unique identification linking it to your submission form. We receive many samples that come from a 'Tank', 'Bore', or 'Kitchen Tap'.

If you are undertaking routine sampling from a set collection point, please use the same sample name or description each time a sample from that point is submitted to the laboratory.

Collection of water samples

Water samples must be collected in accordance with the instructions from the water microbiology laboratories (see [Appendix 3](#)). Always wash your hands before collecting water samples and handle the sample bottle carefully, taking care not to introduce contamination into the lid or neck of the bottle.

Leave an air gap of 2-3 cm in bacteriological water samples. Water samples submitted in dirty or poorly stored bottles will not be accepted.

Sample submission: When and how

It is best if samples are sent so that they arrive at the water microbiology laboratories on a **Monday, Tuesday, or Wednesday**; ideally no later than 3:30pm.

It takes 48 hours to complete the analysis of potable water samples, therefore samples may not be accepted on a Thursday or Friday. Any sample received on a Thursday will incur a surcharge for the overtime required to complete the analysis on Saturday. Samples received on a Friday will incur a surcharge for the overtime required to complete the analysis on Saturday and Sunday. Overtime charges also apply to samples received on or just prior to a public holiday.

Samples must be delivered to the laboratory within 24 hours of the time of collection. If you are using a courier, make sure the requirements for transportation, handling and speedy delivery are understood.

For further information or clarification of the above please contact us:

Darwin
08 8999 2347
WaterLabsDarwin.DITT@nt.gov.au

Alice Springs
08 89518110
WaterLabAliceSprings.DITT@nt.gov.au

Appendix 5 – Water Chemistry Chain of Custody

Customer:	Samples collected by:	Lab Use Only
Project/sample location:	Relinquished by:	Delivered to Lab by: Courier Client
Contact name: Contact phone:	Date: Time: Temp °C:	Temperature received: Ambient Chilled
Contact email:	Received by:	Received within holding time? Yes No
Email copy of report to:	Date: Time: Temp °C:	Samples accepted for analysis? Yes No
Receipt or invoice to:	Relinquished by:	Received by:
Purchase order/payment:	Date: Time: Temp °C:	Date: Time:
Comment, special handling, storage or disposal:		

Lab Number (Lab Use Only)	Sample Details				Packages:				Individual analyses:				Sampling notes or other analysis requirements
	Sample ID / Description	Bottle Number	Sample Type: Potable (P) Waste (W) Environmental (E)	Date and Time of Collection	Potable suite - basic	Potable suite - extended	Sewage/waste suite - basic	Sewage/waste suite - extended	Suspended and Volatile Solids	B.O.D only	Chlorophyll/ Pheophytin	Free Chlorine - water mains	

By submitting samples to the Laboratory, you agree to the current Terms and Conditions of Service. For more information, refer to the Water Laboratories Sample Submission Guide available from <https://industry.nt.gov.au>

Appendix 6 – Darwin Water Microbiology Chain of Custody (CoC)

Customer:		Lab Use Only			
Project/sample location:		Received within holding time?	Yes	No	Received by:
Contact name:	Contact phone:	Correct sample bottles used?	Yes	No	
Contact email:		Temperature received (°c):			Date:
Email copy of report to:		Samples accepted for analysis?			Time:
Receipt or invoice to:		Comment, special handling, storage or disposal:			
Purchase order/payment:					
Samples collected by:	Collection date:	Is a compliance statement with ADWG [^] required? (E.coli only). Note: Measurement Uncertainty is not included in compliance assessment.			Yes / No
Delivered by:	Delivery date/time:				

Lab Number (Lab Use Only)	Sample Details				Individual analyses:								Packages:			Sampling notes (Chlorine Residuals, Collection Temp) or list other analysis requirements:
	Sample ID / Description	Bottle Number	Sample Type: Potable (P) Wastewater (W) Swimming Pool (SP) New Main (NM) Marine (M)	Time of sample collection (and date if different to above)	Total Coliforms (MPN)	E. coli (MPN)	Enterococci (MPN)	Thermotolerant coliforms (Membrane Filtration)	E. coli (Membrane Filtration)	Heterotrophic Plate Count	Pseudomonas aeruginosa	Full Potable (Total Coliforms, E. coli & Basic Potable (Total Coliforms & E. coli)	Swimming Pool (Full Potable Package & P. aeruginosa)			

ADWG[^] = Australian Drinking Water Guidelines (2011). By submitting samples to the Laboratory, you agree to the current Terms and Conditions of Service. For more information, refer to the Water Laboratories Sample Submission Guide available from <https://industry.nt.gov.au>

Appendix 7 – Alice Springs Water Microbiology Chain of Custody

Customer:		Lab Use Only			
Project/sample location:		Received within holding time? Yes No		Received by:	
Contact:		Correct sample bottles used? Yes No			
Contact phone:		Temperature received (°C):		Date:	
Contact email:		Samples accepted for analysis? Yes No			
Email copy of report to:		Comment, special handling, storage or disposal:			
Invoice to:					
Purchase order/payment:					
Samples collected by:		Collection date:		Time:	
Delivered by:		Delivery date/time:			
				Is a compliance statement with ADWG [^] required? (E.coli only). Note: Measurement Uncertainty is not included in compliance assessment.	
				Yes / No	
				Client Sign.	

Lab Number (Lab Use Only)	Sample Details				Individual analyses:				Packages:		Provide sampling notes (Chlorine Residuals, Collection Temp) or list other analysis requirements:
	Sample ID and Description	Bottle Number	Sample Type: Potable (P) Wastewater (W) Swimming Pool (SP) New Main (NM) Marine (M)	Time of sample collection (and date if different to above)	Total Coliforms (MPN)	E. coli (MPN)	Enterococci (MPN)	Heterotrophic Plate Count	Full Potable (Total Coliforms, E. coli & Plate Count)	Basic Potable (Total Coliforms & E. coli)	

ADWG[^] = Australian Drinking Water Guidelines (2011). By submitting samples to the Laboratory, you agree to the current Terms and Conditions of Service. For more information, refer to the Water Laboratories Sample Submission Guide available from <https://industry.nt.gov.au>

Appendix 8 – Extended Customer Details Form

Customer Details– for new customers or update information for existing customers				
Customer or Business Name				
ABN/ACN (if applicable)				
Business Premises or Home Address				
Property or building				
Street number and name				
Suburb/town		State/Territory		Postcode
Postal Address (indicate if same as above)				
Suburb/town		State/Territory		Postcode
Primary contact				
Contact name	Phone		Email	
Additional contacts				
Contact name	Phone		Email	
Report delivery - please email reports to the following recipients:				
Invoices or tax receipts to:				
Contact name	Phone		Email	