

National Laboratory Association – South Africa NPC

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Proficiency Testing Scheme Brochure

Water Microbiology

2026

Approved by:

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Background

The NLA – SA is a representative body that evolved from the previous National Laboratory Accreditation service. Following the assumption of overall responsibility for accreditation (including laboratory accreditation) by the South African National Accreditation System (SANAS) during 1998, it was decided that a new independent body should be created. This body, the National Laboratory Association – South Africa (NLA – SA), now looks after the interests of the large number of laboratories in South Africa. The acronym, NLA, which was linked to the previous National Laboratory Accreditation service was retained, both for the purpose of continuity and because it was well-recognised and respected. During 2019/20 the NLA – SA, a Not-for-Profit organisation, restructured Board representation and formed a Board committee which is now named the “Council”. This was done to provide for wider input into its strategic intent. The formation of the Council has meant that interests from the government Technical Infrastructure organisations, such as NMISA, SANAS, SABS – Standards and the NRCS, are accommodated; as well as various other interests without having to be co-opted on to the Board which was previously required. The NLA – SA’s focus is primarily on the representation of the activities, interests and opinions of all members’ laboratories. Membership of the Association is voluntary and open to all companies that have laboratories.

The NLA – SA has been accredited as a proficiency testing provider (PTP) according to ISO/IEC 17043, Conformity assessment – General requirements for the competence of proficiency testing providers since 2015.

What is Proficiency Testing?

- Proficiency testing is a powerful quality assurance tool for analytical measurement laboratories.
- Samples are distributed to laboratories for analysis, the results evaluated, and a report generated.
- Laboratories should use their routine methods of analysis.
- Proficiency testing should be used as an educational tool to identify and address measurement problems.

Benefits of Proficiency Testing

- Provides a regular independent check on the quality of analytical measurements.
- Enables participants to compare their performance with peer laboratories.
- Offers constructive feedback from the Technical Committee (TC).
- Facilitates the demonstration of competence to accreditation bodies, regulators and customers.
- Enables monitoring of trends, over time, in the quality of measurements.
- Assists in the evaluation of methods and instrumentation.
- Helps educate laboratory staff and their customers.

Why participate in Proficiency Testing?

Many international and national standards emphasise the importance of maintaining environmental quality. To ensure a safe environment, analytical results are frequently used as a measuring tool and have to be accurate and reliable. Participation in a Proficiency Testing Scheme (PTS) provides the opportunity to measure the quality of analysis. It also helps laboratories to meet the requirements of accreditation organisations and assists laboratories to improve their quality control and analytical performance for the benefit of their customers. It provides independent evidence of laboratory performance for both laboratory management and customers.

The Water Microbiology PTS offered is included under the scope of accreditation.

Scope of the Water Microbiology PTS

Important note: Proficiency samples should imitate materials or samples that laboratories would normally receive for testing. Since one would not expect all samples received for routine testing to test positive for a specific determinand, the PTS programme is designed and planned to cover different technical aspects such as high or low target levels, typical vs non-typical organism appearance, presence of interfering flora, etc. over the span of a year. This means that participants who opt to participate in only certain rounds of the year programme may not be able to cover all their testing needs through participation in this PT scheme.

The scheme involves the distribution of freeze-dried pellets to each participating laboratory and consists of six rounds for the year, with three samples per round. The concentration of the organisms in the samples supplied are unknown. Samples A and B, labelled as Drinking Water, will have counts similar to that expected in drinking water, and sample C, labelled as Raw Water, will have counts similar to that expected in raw water. Participants are reminded that drinking water may be contaminated, and raw water may be unpolluted.

Results are reported as counts (cfu/mL for HPC and cfu/100 mL for the other tests). The determinands included in all rounds of the PTS are:

- Heterotrophic plate count (HPC) @ 35°C (mesophilic range)
- Total coliform bacteria count
- Faecal (Thermotolerant) coliform count, defined as coliform bacteria able to ferment lactose with acid and gas production in 48 h at the temperature of $44 \pm 0.5^{\circ}\text{C}$ according to the International Organisation for Standardisation (ISO)
- *Escherichia coli* count

Additional determinands are offered in rounds 2, 4 and 6:

- *Pseudomonas* species count
- *Ps. aeruginosa* count **NEW!**
- Intestinal Enterococci count
- *Clostridium perfringens* count
- *Clostridium* species count **NEW!**

Each laboratory must perform duplicate analyses of each sample for all the determinands. Laboratories are afforded the opportunity to submit up to three sets of results from the one set of samples that they receive, at no additional cost. Additional samples may be purchased (at least 6 weeks prior to the start of the round) if more sample is needed to enable more personnel to participate. **Any additional samples to repeat tests must be ordered within 3 months after the Final Report has been issued.**

Programme

The programme for the 2026 PTS and the costs involved are as follows:

Round	Distribution date of samples	Price (Excl VAT) [#]	
		NLA – SA members	Non-members
Round 1	9 February 2026	R 18 818 (6 rounds)	R 22 718 (6 rounds)
Round 2	30 March 2026		
Round 3	25 May 2026		
Round 4	6 July 2026		
Round 5	24 August 2026		
Round 6	12 October 2026		

[#]Prices exclude courier charges to laboratories outside South Africa (courier charges will be added to the above price).

Laboratories outside South Africa will be responsible for payment of any VAT & Duties charges.

Distribution of samples

The samples will be shipped as per the events calendar. The package will reach the participant via a courier service. Instructions on how to prepare the samples are e-mailed to participants at the start of each round.

Participants who prefer to arrange collection of their samples using their own courier company are allowed to do this. This needs to be communicated to the NLA – SA when registering to participate.

Submission of results

Results are submitted online. The submitted data will be downloaded from the web after the due date for results submission. No late submissions will be accepted, unless the laboratory experienced problems and this was communicated to the coordinator and late submission agreed upon by the coordinator before the due date.

Assigned values and performance evaluation

Since it is not possible to assign a single 'target' value for evaluation purposes due to the nature of the proficiency samples, the consensus value will be used as the assigned value. Performance will be evaluated by calculating z scores, which represent the performance of the participant relative to all the other participants.

z scores of $< |2|$ indicate acceptable performance of the laboratory. Values outside of these ranges indicate that there is a potential problem with the measurements in the participant laboratory, and that a root cause analysis and corrective action are called for.

Reporting of results

A preliminary report summarising the raw data will be issued within a week after the results submission due date, with the final report being issued 3 - 4 weeks after the due date of each round.

No changes/corrections will be made to the database after the preliminary report was distributed.

Recognition for participation

Certificates of participation will be issued annually to indicate participation in the scheme.

Confidentiality

Participating laboratories will be identified by a unique code to ensure confidentiality. Results may be presented on relevant occasions but not to harm any individual or to identify a laboratory.

General

The NLA – SA will review the principles of the scheme annually following feedback received in the annual meeting and survey. Any changes will be adopted during the following year where possible

How to Join the Scheme

Participation in the PTS is open to all testing laboratories, regardless of location (nationally or internationally) and whether they are accredited or not.

Laboratories wishing to join the scheme should complete the PT Scheme Participation Application Form (NLA-PT-F-01). Note the person indicated as the contact and the alternate will receive all communications, including those concerning sample delivery, and the reports. The application form should be sent by e-mail (carinnej@nla.org.za) to the scheme coordinator, Ms Carinne Joubert.

Please return the Application form on or before **12 January 2026**, after which you will be invoiced. Terms of payment are strictly 30 days unless special arrangements have been made with the NLA – SA finance section.

If you do not want to participate in the proposed series but wish to be informed about future exercises, send an e-mail to the scheme coordinator to remain on the distribution list.

Customer Participation

Comments and suggestions for changes are always welcome from customers on all aspects of the scheme. Participants are invited to attend the annual PT meeting. Details of this meeting will be sent to all participants in advance.

Water Microbiology PTS Events Calendar 2026

Event	Date	Responsibility
Mail documents and registration forms for 2026	8 December 2025	PT Provider
Return completed registration forms	12 January 2026	Participants
Despatch Round 1 samples	9 February 2026	PT Provider
Submit results for Round 1	2 March 2026	Participants
Distribute preliminary report Round 1	9 March 2026	PT Provider
Distribute final report Round 1	30 March 2026	PT Provider
Despatch Round 2 samples	30 March 2026	PT Provider
Submit results for Round 2	20 April 2026	Participants
Distribute preliminary report Round 2	28 April 2026	PT Provider
Distribute final report Round 2	11 May 2026	PT Provider
Despatch Round 3 samples	25 May 2026	PT Provider
Submit results for Round 3	15 June 2026	Participants
Distribute preliminary report Round 3	22 June 2026	PT Provider
Distribute final report Round 3	6 July 2026	PT Provider
Despatch Round 4 samples	6 July 2026	PT Provider
Submit results for Round 4	27 July 2026	Participants
Distribute preliminary report Round 4	3 August 2026	PT Provider
Distribute final report Round 4	17 August 2026	PT Provider
Despatch Round 5 samples	24 August 2026	PT Provider
Submit results for Round 5	14 September 2026	Participants
Distribute preliminary report Round 5	21 September 2026	PT Provider
Distribute final report Round 5	5 October 2026	PT Provider
Despatch Round 6 samples	12 October 2026	PT Provider
Submit results for Round 6	2 November 2026	Participants
Distribute preliminary report Round 6	9 November 2026	PT Provider
Distribute final report Round 6	23 November 2026	PT Provider

Please diarise these dates to ensure a successful programme. If any of these dates need to be changed due to unforeseen circumstances, the participants will be notified in advance.