



QARSHI
RESEARCH INTERNATIONAL Pvt. Ltd.
PROFICIENCY TESTING SCHEME
Lyophilized Water Microbiology
(ISO / IEC 17043: 2010)



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**The 1st and only ISO 17043 Accredited Proficiency Testing
Provider by PNAC & TURKAK in Pakistan**

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INTRODUCTION:

Qarshi is a leading organization in Pakistan with a large number of National / International Accreditations and Certifications which include

1. ISO 9001
2. ISO 14001
3. FSSC 22000
4. Halal
5. Organic Certification
6. PCP (Pakistan Center of Philanthropy)
7. ISO/IEC 17025 from PNAC
8. ISO/IEC 17043 accreditation from PNAC
9. ISO/IEC 17043 accreditation from TURKAK.

Qarshi is playing a very active part in supporting Pakistan's economic growth by exports, employment generation, and contribution to the national exchequer in the form of taxes. At the same time, Qarshi Foundation is also contributing to the social sector through its continuous support in the field of health, education, and environment-friendly activities.

Qarshi Research International Pvt. Ltd.

QRI is an independent business unit within the Qarshi Organization with the aim of providing quality testing, calibration, inspection & proficiency testing (PT) services through its internationally recognized accredited laboratory facilities located at Hattar Industrial Estate, Haripur, KPK, Pakistan.

QRI has been a pioneer in the field of quality assurance in compliance with international standards in Pakistan. QRI was the first accredited organization in Pakistan that achieved accreditation in compliance with ISO/IEC 17025 from Norwegian Accreditation (an apex accreditation body in Norway) in 2004 covering the scope of physical, chemical, and microbiology testing.

Subsequently, the accreditation of QRI's testing laboratories was granted by the national accreditation body PNAC (Pakistan National Accreditation Council) in 2004 and accreditation of ISO/IEC 17043 for proficiency testing was granted in 2016.

QRI has marked another significant achievement by becoming the first company of Pakistan that has attained ISO/IEC 17043 accreditation from TURKAK in 2023.

At present QRI is offering accredited PT services in **Drinking Water, Wastewater, Pharmaceuticals, Pesticides, and Lyophilized Water Microbiology** matrixes.

Why it is necessary to participate in Proficiency Testing (PT) scheme?

Participation in an appropriate PT scheme is not only one of the essential tools for the external

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evaluation of the performance and reliability of the testing results but it is also fulfilling one of the requirements of the accreditation standard ISO/IEC 17025, in order to demonstrate impartial comparability of results. Participation in PT provides the laboratories with an excellent opportunity to improve their quality.

QRI's contribution to the history of PT Services in Pakistan

In 2006 PNAC conducted the very first PT program in Pakistan with the collaboration of QRI. In this PT program, QRI contributed in sample preparation, bottling, labeling, homogeneity, and stability studies. This exercise proved very successful. In the subsequent years, QRI conducted its own PT programs based on the successful venture with PNAC. Organizing PT programs in Pakistan by QRI was a need of the time as there was no such program available in Pakistan and the laboratories in Pakistan seeking accreditation from PNAC had to participate in appropriate PT programs operated by foreign PT providers.

QRI not only facilitates the laboratories in their quest to be accredited by PNAC in Pakistan but also supports the state to save foreign exchange by providing indigenous PT schemes. In addition, participating in PT organized by QRI saves time and economic resources for laboratories compared with participation in PT schemes offered by foreign PT providers.

Another milestone is achieved by getting accreditation from the Turkish Accreditation Agency (TURKAK), a globally recognized body, we are now extending our Proficiency Testing schemes throughout the globe. This achievement opens up a range of significant benefits. Firstly, our international accreditation enhances our credibility and reputation, instilling trust among potential participants from around the world. Furthermore, laboratories across different countries can now benchmark their performance against a recognized standard, leading to improved accuracy and reliability of test results.

Launch of Water Microbiology PT Scheme by QRI:

QRI is launching 1st round of Water Microbiology in the lyophilized form first time in the history of Pakistan, which is accredited by TURKAK, covering the basic essential microbiology parameters of drinking water.

Benefits of Participation in Proficiency Testing:

While some laboratories may view participation in PT program as a necessity only to satisfy the requirements of accreditation bodies, they could be overlooking the more fundamental benefits that can be achieved by taking part in a well-designed PT program.

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Clearly, the laboratories are the major stakeholders in PT program participation, but there may be other stakeholders who also have a major interest in such programs and in the performance of laboratories involved i.e., professional bodies, regulatory authorities, reference materials producers, direct & indirect customers, etc.

The following are some of the potential benefits for participating laboratories:

- Compliance with the accreditation requirement.
- Determining method precision and accuracy.
- Demonstrate competence.
- Comparing methods and procedures.
- Improve testing performance.
- Training & educating of staff.
- Instilling confidence in staff, management & lab customers / clients.
- Comparing analysts' capabilities.
- Allows laboratories to remain up to date with new and emerging organisms

Finally, the satisfactory performance of a laboratory in a proficiency test or its effective correction of testing problems after an unsatisfactory performance may provide accreditation bodies with confidence in the laboratories for granting and/or maintaining accreditation. The clear benefit for the participants is confidence in their standing as a competent laboratory.

Repeated participation in PT provides the lab with an excellent opportunity to ensure that the results of the laboratory are consistent over time.

Criteria for Participation in the PT Scheme:

This round is open to all accredited laboratories, as well as other labs who intend to go for accreditation, and also for those labs which are interested to ensure the validity of their results using proficiency testing as a tool.

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Salient features of the PT scheme offered by QRI:

Matrix: Drinking Water (Lyophilized Sample)

Sr.#	Parameters	Sample Size	Range	Rate Offered (USD)
01	Total Plate Count @ 35°C	1 Lyophilized Vial (Simulated Water Microbiology Sample)	0-500 cfu/ml	300 (Including Shipment Charges)
02	Total Plate Count @ 21°C		0-500 cfu/ml	
03	Total Coliform		0-500 cfu/100ml	
04	Fecal Coliform		0-500 cfu/100ml	
05	<i>E. coli</i>		0-500 cfu/100ml	
06	<i>Enterococcus faecalis</i>		0-5000 cfu/100ml	
07	<i>Pseudomonas aeruginosa</i>		0-500 cfu/100ml	

1. Expression of interest (EOI)

Potential participants are requested to participate through E-portal <https://www.qri.com.pk/pt> by using work instruction TEC-OPT-WI-05. QRI anticipates the total number of participants will be more than 20.

2. Preparation of samples

Based upon the participation received through the portal, a bulk amount of sample will be prepared and spiked with a known quantity of controlled ATCC microorganisms, followed by aseptic filling of an appropriate amount of sample in sterilized 15 ml glass vials. A sufficient number of sample vials will be prepared ensuring the stability and homogeneity of studies in addition to distribution to the participants.

3. Labelling of vials and coding of participants

Each vial will be given a unique code number using pre-defined criteria. Each participant will be assigned a unique code in order to maintain the requirement of confidentiality in accordance with the ISO/IEC 17043. This code will only be shared with the relevant participant through the portal.

4. Homogeneity and stability of PT samples

Samples of the PT will be rigorously analyzed in order to monitor the homogeneity with regard to the parameters offered. Stability studies will be performed at a refrigerated temperature (2-8 °C) in order to assure that each sample is stable throughout the life cycle of this PT scheme.

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5. Distribution of samples

Samples will be carefully packed and transported to the participants under controlled temperature, where it is necessary. Participants will be provided instructions for handling samples after receipt to ensure their integrity during analysis by the participants.

6. Handling of results submitted by the participants

Each participant will be required to submit their results in a pre-defined format. After receipt of the results, the data will be evaluated to identify any possible outlier using appropriate statistical tools. The results identified as outliers will be rejected and will not be used for further statistical analysis.

7. Evaluation of the performance of the participant

On the basis of results received from all participants, a consensus value will be derived (after rejecting possible outliers) by using an appropriate statistical approach. The consensus value will be used to evaluate the performance of each participant for parameters having more than five participants, whereas the assigned approach will be used to evaluate the performance of each participant for parameters having less than five participants. The performance will be expressed in terms of the Z-score or Z'-score where required.

8. Individual Lab Performance Report:

After preliminary data analysis, each participating lab will receive an individual performance report where their performance will be evaluated by using the Z-score or Z'-score where required.

9. Final report of the PT scheme

Each participant will receive a final report within 3 months after the submission of the results. This report will provide details of the PT scheme including results from homogeneity and stability studies, results submitted by all participants, statistical handling of data, and graphic presentation of results. An overall summary of the PT will also be presented in this report. Each participant will be identified with the unique code given to them in this report.

10. Complaints and appeals

Each participant is encouraged to submit their suggestions, complaints, appeals, and any possible improvement point with us. These will be handled in accordance with the requirements of ISO/IEC 17043.

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11. Certificate of participation

Participants will be issued a certificate if required by the participant. The certificate serves to demonstrate their participation in our PT scheme as evidence to appropriate authorities such as accreditation bodies or their relevant stakeholders.

12. Confidentiality

All information submitted by the participants will be handled strictly confidential. Each laboratory will be assigned a unique identification code. This code will be shared only to the concerned laboratories' authorized representative(s)

13. Purchase of Reference Material

After the successful completion of the PT scheme, the remaining number of samples will be made available at competitive prices to the interested laboratories. These samples can be used as reference materials. These will be provided with a certificate indicating the reference value along with the associated uncertainties.

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