



Australian Government

NWPGEN022 Perform laboratory testing

Release: 1

NWPGEN022 Perform laboratory testing

Modification History

Release 1. This is the first release of this unit of competency in the NWP National Water Training Package.

Application

This unit involves the skills and knowledge required to perform laboratory testing.

It includes performing laboratory tests using standard methods and procedures, using and calibrating equipment and preserving the integrity of samples. It also includes performing calculations and identifying and reporting discrepancies.

This unit applies to those working in industry under appropriate supervision, while performing complex tasks in a range of contexts.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

General

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare samples for testing

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Register and record laboratory samples, ensuring required information is transcribed accurately and legibly

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| | 1.2 | Identify samples to be tested, appropriate test method, equipment and safety requirements |
| | 1.3 | Maintain integrity of samples during sub-sampling as per workplace procedures |
| | 1.4 | Assess and report abnormal characteristics to relevant personnel |
| 2 Prepare for laboratory testing | 2.1 | Set up test equipment according to appropriate test method and workplace procedures |
| | 2.2 | Conduct pre-use and safety checks on test equipment according to workplace procedures |
| | 2.3 | Identify and report faulty or unsafe equipment to relevant personnel |
| | 2.4 | Check the calibration status of equipment and conduct calibration or report calibration requirements to relevant personnel |
| 3 Perform tests on samples | 3.1 | Preserve the integrity of sub-samples and eliminate the possibility of cross-contamination |
| | 3.2 | Identify, prepare and weigh or measure sample to be tested |
| | 3.3 | Follow test methods and perform sequence of tests using safety equipment and verification standards |
| | 3.4 | Use calculations to determine results of tests |
| | 3.5 | Shut down, clean and store equipment according to manufacturer instructions and workplace procedures |
| | 3.6 | Store unused reagents and dispose of wastes as required by relevant legislation, regulations and codes of practice |
| 4 Finalise work | 4.1 | Apply chain of custody principles to laboratory testing |
| | 4.2 | Record results and complete relevant documentation |
| | 4.3 | Identify and report discrepancies requiring further action to relevant personnel |
| | 4.4 | Clear and restore work area according to workplace procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to NWPGEN009 Perform laboratory testing

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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Assessment Requirements for NWPGEN022 Perform laboratory testing

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and includes:

- comparing sample description with the specification, recording results and reporting discrepancies
- calculating and recording test results
- interpreting laboratory test methods
- limiting hazards and contamination to self, work area and environment
- performing at least two types of sample preparations for the following:
 - digestion
 - dilution
 - filtration
 - heating/cooling
 - mixing/agitation
 - neutralisation/ quenching
 - sub sampling
- performing sub-sample and testing products
- producing laboratory reports
- registering and preserving samples
- selecting the correct equipment and checking equipment performance
- using laboratory safety equipment and personal protective equipment
- using the following laboratory equipment including:
 - gravimetric
 - potentiometric
 - spectrophotometric
 - volumetric

Knowledge Evidence

- calibration and pre-use equipment checks
- reference, standards or buffers

- principles of the standard methods for laboratory analysis
- procedures for recognition of unexpected or unusual results and likely causes
- purpose of tests
- relevant legislation, regulations and workplace procedures
- relevant workplace procedures for sampling and testing
- safety data sheets
- source of uncertainty in measurements and methods for control

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including legislation, regulations, codes of practice, workplace procedures and operation manuals.

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