



Australian Government

NWPTRT059 Assess and improve granular media filters

Release: 1

NWPTRT059 Assess and improve granular media filters

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 assess and improve granular media filters.

It includes evaluating and reporting on system performance and process quality control and may require the control and coordination of granular media filtration processes used in water and wastewater treatment.

This unit applies to those working as technical staff with responsibility for optimising granular media filtration processes in water or wastewater treatment plants. This role may include coordination or supervision of a work team, or may be performed by a single operator, depending on the size of the treatment plant. Those undertaking this unit would work autonomously, usually with supervisory responsibilities, while performing complex tasks within a range of familiar contexts.

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

Pre-requisite Unit

Not applicable.

Competency Field

Treatment

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

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|---|--|
| 1 Assess granular media filtration process performance | 1.1 Review existing process performance and maintenance data against relevant organisational and legislative requirements |
| | 1.2 Identify the impact of incoming water quality on granular media filtration processes |
| | 1.3 Identify any additional sampling and testing required for valid evaluation of current process performance |
| 2 Investigate granular media filtration plant or equipment operation | 2.1 Review existing fault reports and other relevant plant asset information |
| | 2.2 Investigate the operational status of plant components with reference to manufacturer and plant design specifications |
| | 2.3 Contribute to plant configuration investigations to identify potential operational improvements |
| | 2.4 Identify hazards, assess risks and control measures according to workplace procedures |
| 3 Investigate the operational options for process optimisation | 3.1 Review relevant fault and incident reports and remedial actions taken |
| | 3.2 Investigate current media and system status with reference to manufacturer or plant design specifications |
| | 3.3 Investigate potential changes to operational processes to identify possible optimisation strategies |
| 4 Develop and record a plan for process optimisation | 4.1 Determine plant configuration or media options and revised operational procedures for process optimisation |
| | 4.2 Plan a trial to test the performance of the determined optimisation options |
| | 4.3 Compile a report making recommendations on optimisation options |

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 NWPTRT042 Assess and improve granular media filters.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for NWPTRT059 Assess and improve granular media filters

Modification History

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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:

- analysing problems and recommending appropriate remedial solutions
- assessing faults and incident reports and investigating the status of filtration plant components and media
- compiling recommendation reports
- conducting system investigation and reporting on operational, maintenance or control system problems
- conducting trend analysis for long-term filter monitoring
- coordinating filter inspection, sampling and testing
- determining filter run and backwash profiles and times
- identifying and responding to risks and hazards
- identifying data deficiencies and organising additional data collection through appropriate sampling and testing
- interpreting a range of complex and technical documents including at least one of the following:
 - codes of practice
 - national and industry standards
 - organisational policies
 - regulatory, legislative, licensing and organisational requirements
 - specifications
- investigating potential changes to filtration operational processes to identify possible optimisation strategies
- operating a granular media process
- performing calculations to provide data for the analysis and development of options and solutions, including backwash rates and filtration rates
- planning trials to test the performance of the determined filtration optimisation options
- reviewing existing filtration process performance with reference to historical data, initial specifications and differences in incoming water quality and plant configuration

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and include knowledge of:

- backwash principles and optimisation
- filter inspection and sampling
- filter media properties and selection
- filter ripening and turbidity breakthrough
- filter run profiles
- filter to waste
- granular media filtration process principles
- principles of filter maintenance including:
 - caustic washing
 - double backwashes
 - filter cleaning
 - lancing
 - surface cleaning
- range and performance of filter aids
- range of appropriate measuring and testing procedures
- relevant legislation, industry standards and workplace policies and procedures relating directly to the control and operation of granular media filters
- risk and hazard management principles
- types of filters and their range of applications, conditions for use and manufacturer requirements
- workplace records and reports

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.

Links

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