



Australian Government

NWPTRT032 Assess and improve sedimentation processes

Release: 1

NWPTRT032 Assess and improve sedimentation processes

Modification History

Release	Comments
1	This unit was released in NWP Water Training Package release 1.0 and meets the Standards for Training Packages. This unit supersedes and is equivalent to NWP408A Investigate and plan the optimisation of sedimentation and clarification processes. • Unit code updated • Content and formatting updated to comply with the new standards • All PC transitioned from passive to active voice • Unit title changed to better reflect unit outcomes • One new PC added to Element 2

Application

This unit describes the skills required to evaluate system performance and investigate and report on the optimisation of sedimentation and clarification processes.

This unit applies to those working as technical staff with responsibility for optimising sedimentation and clarification processes in water and wastewater treatment plants. This role may be performed as a single operator, or as part of a team with some responsibility for team coordination and supervision, depending on the size of the treatment plant.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work under indirect supervision, while performing complex tasks, within a familiar context.

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

Competency Field

Treatment

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Assess sedimentation and clarification process performance	1.1 Review existing process performance data. 1.2 Identify the impact of changing incoming water quality on sedimentation and clarification processes in a range of conditions. 1.3 Identify any additional sampling and testing required for valid evaluation of current process performance.
2. Investigate sedimentation and clarification assets	2.1 Review existing fault reports and other plant asset information. 2.2 Investigate the operational status of plant components with reference to manufacturer and plant designer specifications. 2.3 Carry out investigations to identify potential deficiencies.
3. Investigate process optimisation	3.1 Review relevant fault and incident reports and remedial actions taken. 3.2 Investigate potential changes to operational processes to identify possible optimisation strategies.
4. Plan process optimisation	4.1 Determine plant configuration and revised operational processes 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

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning NA					Reading					Writing					Oral communication					Numeracy				

Performance variables:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Unit Mapping Information

This unit supersedes and is equivalent to NWP408A Investigate and plan the optimisation of sedimentation and clarification processes.

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 NWPTRT032 Assess and improve sedimentation processes

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages. • Assessment Requirements created drawing upon specified assessment information from superseded unit

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- conducting investigations and reporting on operational or control system problems
- coordinating sedimentation and clarification inspection, sampling and testing
- performing calculations to provide data for the analysis and development of options and solutions, including at least one of:
 - surface loading rate
 - upflow velocity
 - detention time
 - weir loading rate
- interpreting a range of complex and technical documents, including at least one of:
 - regulatory, legislative, licensing and organisational requirements
 - codes and standards
 - specifications
 - organisational policies
- articulating complex ideas
- analysing problems and recommending appropriate remedial solutions
- identifying risks and hazards
- reviewing existing sedimentation and clarification process performance with reference to historical data, differences in incoming water quality and plant configuration
- identifying data deficiencies and organising additional data collection through appropriate sampling and testing
- assessing fault reports and investigating the current operational status of sedimentation and clarification plant components

- investigating current and potential chemical addition practices
- planning trials to test the performance of the determined sedimentation and clarification optimisation options and compiling recommendation reports

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- principles that form the basis of sedimentation and clarification processes
- types of sedimentation and clarification processes
- re-establishing sludge blankets
- polymers and weighting agents
- principles of sedimentation and clarification system maintenance
- system layout
- pumping and valving systems
- range of appropriate measuring and testing procedures
- investigation procedures
- risk management principles relating to sedimentation and clarification systems
- chemical dosing processes

Assessment Conditions

Competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace, the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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