Australian Government

Department of Education, Employment and Workplace Relations

NWP270B Monitor, operate and report basic anaerobic processes

Revision Number: 2

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Modification History

NWP270B Release 2: Layout adjusted. No changes to content.
NWP270B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to monitor and operate anaerobic processes and report on system performance within domestic and industrial wastewater treatment plants.

Application of the Unit

This unit supports the attainment of skills and knowledge required for operational staff with specific responsibility for operating anaerobic processes in treatment plants and checking that the processes comply with organisational requirements.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for work.	1.1 Determine work requirements according to ***legislative and organisational requirements***.
	1.2 Select and check ***equipment*** required to meet safety requirements of task and site.
	1.3 Select, fit and use personal protective equipment.
2 Monitor and operate basic anaerobic process performance.	2.1 Carry out ***anaerobic process*** inspections according to planned schedules.
	2.2 Collect process samples and conduct standard ***tests***.
	2.3 Collect and report process data according to organisational and plant requirements.
	2.4 Monitor processes to ensure that parameters of operation are maintained.
	2.5 Identify and report process faults and operational condition of plant according to organisational requirements.
	2.6 Carry out basic ***system adjustments*** according to organisational requirements to enhance system performance.
	2.7 Handle, use, store and dose chemicals according to organisational procedures.
3 Complete documentation.	3.1 Compile records from plant and system data to meet organisational requirements.
	3.2 Report observations outside defined parameters for further action.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- identify and report operational problems
- produce reports and logs
- use safety equipment and personal protective equipment
- follow plans, charts and instructions
- perform system calculations
- apply procedures and standards
- communicate with employees and customers
- work effectively as part of a team
- use communication equipment
- give and receive instructions
- identify system faults
- use literacy skills in regard to verbal and written communication in the workplace
- sample and test products

Required knowledge:

- anaerobic process principles
- system layout
- lock-out procedures for mechanical and electrical installations
- policies, procedures and legislation relating to water treatment
- communication systems
- hazardous materials handling
- explosion hazards
- risk factors and potential hazards
- basic system calculations
- chemical dosing processes
- hydraulic detention times
- equipment operation, capacity and limitation

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to monitor, operate and report on basic anaerobic processes by:

- planning and conducting routine inspections
- monitoring system processes
- reporting process and structural faults
- performing system adjustments
- completing system performance-monitoring documentation

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence should only be made when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time

- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the operator and cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording, if used in the performance criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative and organisational requirements may include:	• relevant federal and state or territory legislation and regulations • codes of practice, associated standards and guidance material • documented organisational policies, manuals and induction programs • relevant community planning and development agreements, such as land care agreements
Equipment may include:	• electronic monitoring and metering systems • recording systems • basic hand and power tools • sampling and laboratory testing equipment • computerised equipment • on- and off-road vehicles • communication equipment • personal protective equipment
Anaerobic processes may include:	• upflow anaerobic sludge blanket • hybrid reactors • fluidised bed reactors • heated fully mixed reactors • anaerobic lagoons
Tests may include:	• settling • volatile fatty acids • temperature • pH
System adjustments may include:	• pH correction • mixing • chemical additions • sludge wasting • temperature • influent feed rate

Unit Sector(s)

Not applicable.

Competency field

Treatment.