



Australian Government

Department of Education, Employment and Workplace Relations

NWP257B Maintain and repair wastewater collection systems

Revision Number: 2

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Modification History

NWP257B Release 2: Layout adjusted. No changes to content.

NWP257B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to investigate reported problems in wastewater collection systems and to conduct appropriate maintenance and repair work on wastewater collection assets.

Application of the Unit

This unit supports the attainment of skills and knowledge required for field staff with specific responsibility for ensuring that repairs and maintenance of wastewater collection systems are conducted in a safe and timely manner.

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 Investigate reported system problems.	<p>1.1 Investigate customer complaints.</p> <p>1.2 Locate problems using inspection points and system fault location techniques.</p> <p>1.3 Identify organisational and customer responsibilities for faults.</p> <p>1.4 Select remedial action according to organisational procedures.</p>
2 Plan and prepare for maintenance and repair.	<p>2.1 Determine <i>work requirements</i> for maintenance and repair of <i>assets</i> from specifications and instructions.</p> <p>2.2 Select and check <i>equipment and tools</i> required to meet task and site safety requirements.</p> <p>2.3 Select, fit and use personal protective equipment.</p>
3 Maintain and repair assets, pipes and fittings.	<p>3.1 <i>Control flows</i> to allow maintenance and repair of assets.</p> <p>3.2 Repair or replace leakages and damaged assets according to organisational procedures.</p> <p>3.3 Select <i>fittings</i> and tools and lay or join assets according to manufacturer guidelines and organisational requirements.</p> <p>3.4 Conduct preventative maintenance according to organisational maintenance programs.</p> <p>3.5 Locate system chokes and blockages and arrange removal.</p> <p>3.6 Perform cleaning and flushing according to <i>legislative and organisational requirements</i>.</p> <p>3.7 Inspect minor structures and determine and apply appropriate repair techniques.</p>
4 Finalise work.	<p>4.1 Check, maintain and store equipment, tools and materials to manufacturer guidelines and organisational procedures.</p> <p>4.2 Restore work site to meet environmental and organisational requirements.</p>

Required Skills and Knowledge

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

Required skills:

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

Required knowledge:

- system hydraulics basics
- system layout
- environmental aspects of maintenance
- customer and organisational responsibilities for blockages
- standards and procedures for organisational repair and maintenance
- lock-out procedures for mechanical and electrical installations
- closed circuit television (CCTV) and other methods of monitoring
- relevant utilities and service bodies
- communication systems
- safety procedures
- hazardous materials handling
- landscape and ground structure of work area
- risk factors and potential hazards of monitoring processes
- equipment operation
- capacity and limitations
- effects of weather and conditions on system operation and plant
- control systems
- pipes and fittings
- disinfection of systems and chemical usage

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 maintain and repair wastewater collection assets by:

- investigating reported faults
- negotiating with customers
- applying organisational procedures to selection of system fault solutions
- preparing equipment, tools and work sites
- conducting maintenance and repair of pipes, fittings and small structures
- reporting blockages
- cleaning and flush systems
- clearing work site
- completing 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.

Work requirements may include:

- location and extent of work
- location of utilities
- site boundary protection and traffic control
- hazards, risks and preventative solutions

Assets may include:

- collection system pipe work, including:
 - polyvinyl chloride (PVC)
 - polyethylene
 - vitrified clay
 - concrete
 - mild steel cement lined
 - ductile iron cement lined
 - cast iron cement lined
 - asbestos cement
 - glass reinforced piping
- structures, including:
 - meter pits
 - maintenance holes, chambers, traps or pits
 - valve chambers
 - regulators
 - erosion barriers
 - thrust blocks
- pumping stations

Equipment and tools may include:

- basic hand and power tools
- electronic monitoring and metering systems
- recording systems
- on- and off-road vehicles
- communication equipment
- computerised equipment
- CCTV
- pipe and cable detection equipment
- leak detection equipment
- motorised equipment
- portable pumps
- communication equipment

- Flow control*** may include:
- breathing apparatus
 - gas detection equipment
 - rescue equipment
 - appropriate personal protective equipment
 - admission of trade waste
 - odours
 - infiltration and exfiltration
 - electronic and manual controlling systems
 - pumping systems, including:
 - centrifugal
 - positive displacement
 - valving systems, including:
 - sluice
 - gate
 - non-return
 - blade
 - metering systems, including:
 - bubbler tube
 - ultrasonic
 - magnetic meter
- Fittings*** may include:
- sluices
 - valves
 - scours
 - main taps
 - jointing systems for pipe types, e.g. gibault
 - tapping bands
 - tension bands
 - solvent cement joints
 - compression ring joints
 - bolted flanges
 - electrofusion
 - butt welding
 - backflow prevention devices
 - cathodic protection
- 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

Unit Sector(s)

Not applicable.

Competency field

Collection and distribution.