



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RIIWMG203A Drain and dewater civil construction site**

**Release: 1**

## RIIWMG203A Drain and dewater civil construction site

### Modification History

Not applicable.

### Unit Descriptor

This unit covers draining and/or dewatering of civil construction project sites. It includes: planning and preparing; positioning sedimentation control; remove surface water; constructing sump and wells; removing water from sumps or wells, trenches and pits; and cleaning up.

### Application of the Unit

This unit specifies the competency required to drain and/or dewater civil construction project sites for environmental protection purposes and the control of water, which may affect construction. It is appropriate for those working in a operational roles, at worksites within:

- Civil construction

### Licensing/Regulatory Information

Refer to Unit Descriptor.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

### Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Access, interpret and apply <b><i>compliance documentation</i></b> relevant to <b><i>draining and/or dewatering project sites</i></b> 1.2. Obtain, confirm and apply <b><i>work instructions</i></b> relevant to the tasks to the allotted task 1.3. Obtain, confirm and apply safety requirements from the site safety plan and organisational policies and procedures, to the allotted task 1.4. Identify, obtain and implement <b><i>signage requirements</i></b> from the project traffic management plan 1.5. Select plant, tools and equipment to carry out tasks that are consistent with the requirements of the job, check them for serviceability and rectify or report any faults 1.6. Identify, confirm and apply <b><i>environmental</i></b> protection requirements from the project environmental management plan to the allotted task
2. Position sedimentation control	2.1. Position sedimentation controls according to project environmental management plan 2.2. Construct sedimentation control barriers in accordance with the environmental management plan 2.3. Position geo-fabrics and/or woven wire according to specification and to the environmental management plan
3. Remove surface water	3.1. Establish temporary drainage systems to drain or divert surface and sub-surface water to the storm water drainage system 3.2. Remove slab and site surface water and/or directed to the temporary drainage system 3.3. Fill surface holes and depressions 3.4. Drain surface water to drainage system using adequate fall
4. Construct sump/wells	4.1. Locate sump and/or well at the lowest point to be drained to maximise pump efficiency 4.2. Construct sumps and/or wells to work

	instructions
5. Remove water from sumps/wells, trenches and pits	<p>5.1. Install surface or submersible pumps</p> <p>5.2. Locate surface pump as close as practicable to the sump or well</p> <p>5.3. Pump water to temporary drainage system according to the project environmental management plan</p> <p>5.4. Disperse discharged water using approved procedures</p>
6. Clean up	<p>6.1. Clear work area and dispose of or recycle <b>materials</b> in accordance with project environmental management plan</p> <p>6.2. Clean, check, maintain and store plant, <b>tools and equipment</b> in accordance with manufacturer's recommendations and standard work practices</p>

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to drain and dewater civil construction site:

- apply legislative, organisation and site requirements and procedures
- apply operational, maintenance and basic diagnostic procedures
- apply pump operating requirements and procedures

### Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to drain and dewater civil construction site:

- site and equipment safety requirements
- drainage and dewatering
- sedimentation controls
- grading and levelling
- free water
- pumps
- environmental considerations
- construction principles
- processes for interpreting engineering drawings
- equipment types, characteristics, technical capabilities and limitations
- operational, maintenance and basic diagnostic procedures
- site isolation and traffic control responsibilities and authorities
- materials safety data sheets and materials handling methods
- project quality requirements
- civil construction terminology
- JSA's/Safe work method statement

## Evidence Guide

<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p><b>Overview of assessment</b></p>	
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following:</p> <ul style="list-style-type: none"> <li>• knowledge of the requirements, procedures and instructions for draining and dewatering of civil construction site</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the draining and dewatering of civil construction site, which is to include:             <ul style="list-style-type: none"> <li>• draining surface water from a site using surface drains</li> <li>• dewater a trench or pit using at least one type of pump on two separate projects</li> <li>• establishing sedimentation controls for at least one project, and</li> <li>• constructing a sump</li> </ul> </li> <li>• working with others to undertake and complete the draining and dewatering of civil construction sites that meets all of the required outcomes</li> <li>• consistent timely completion of the draining and dewatering of civil construction sites that safely, effectively and efficiently meets the required outcomes</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<ul style="list-style-type: none"> <li>• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment</li> </ul>

	<p>skills.</p> <ul style="list-style-type: none"> <li>• The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job.</li> <li>• Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.</li> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.</li> <li>• Where applicable, physical resources should include equipment modified for people with disabilities.</li> <li>• Access must be provided to appropriate learning and/or assessment support when required.</li> </ul>
<p><b>Method of assessment</b></p>	<p>This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:</p> <ul style="list-style-type: none"> <li>• written and/or oral assessment of the candidate's required knowledge</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes, including: <ul style="list-style-type: none"> <li>• draining surface water from a site using surface drains</li> <li>• dewater a trench or pit, using at least one type of pump on two separate projects</li> <li>• establishing sedimentation controls for at least one project</li> <li>• constructing a sump</li> </ul> </li> </ul> </li> <li>• consistently achieving the required</li> </ul>

	<p>outcomes</p> <ul style="list-style-type: none"><li>• first hand testimonial evidence of the candidate's:<ul style="list-style-type: none"><li>• working with others to undertake and complete the draining and dewatering of civil construction site</li></ul></li></ul>
<b>Guidance information for assessment</b>	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.



## Range Statement

<p>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. 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) may also be included.</p>	
<p><b>Relevant compliance documentation</b> may include:</p>	<ul style="list-style-type: none"> <li>• legislative, organisation and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• code of practice</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>
<p>Areas to be <b>drained and/or dewatered</b> are to include:</p>	<ul style="list-style-type: none"> <li>• control of surface water, bores, coffer dam, springs, creeks, wetland water, seepage water in trenches and pits and low lying natural ground where water may not escape</li> </ul>
<p><b>Drainage</b> is to include:</p>	<ul style="list-style-type: none"> <li>• graded surface level gutters and ditches excavated manually or by machine and various types of plastic piping</li> </ul>
<p><b>Dewatering</b> techniques are to include:</p>	<ul style="list-style-type: none"> <li>• sumps, wells, submersible pumps, vacuum pumps, surface pumps and sludge pumps</li> </ul>
<p><b>Project sites</b> include:</p>	<ul style="list-style-type: none"> <li>• road construction sites, excavation projects and construction sites in close proximity of wetlands or active water</li> </ul>
<p><b>Work instructions</b> may include:</p>	<ul style="list-style-type: none"> <li>• plans, specifications, quality requirements and operational details</li> <li>• quality requirements may include: dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<p><b>Safety requirements</b> may be from the site safety plan and organisational policies and procedures and may include:</p>	<ul style="list-style-type: none"> <li>• protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances</li> <li>• safe operating procedures, which are to include: recognising and preventing hazards</li> </ul>

	<p>associated with underground services, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public</p> <ul style="list-style-type: none"> <li>hazards and risks, which may include: uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials</li> <li>emergency procedures, which are to include: emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation</li> </ul>
Traffic <b>signage</b> and devices are to include:	<ul style="list-style-type: none"> <li>temporary warning signs, regulatory and traffic cones</li> </ul>
Traffic <b>signage</b> and devices may include:	<ul style="list-style-type: none"> <li>highway traffic signs, site safety signage, guide signs, warning signs, barriers, hazard markers, portable traffic signals, bollards, arrow boards, vehicle mounted signs, flashing lights, barricades, and traffic conditions signage</li> </ul>
<b>Environmental Requirements</b> are to include:	<ul style="list-style-type: none"> <li>organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Materials</b> are to include:	<ul style="list-style-type: none"> <li>various types of plastic piping, silt fences, rocks or straw bales</li> </ul>
<b>Tools and equipment</b> are to include:	<ul style="list-style-type: none"> <li>hoses, shovels and pumps</li> </ul>

## Unit Sector(s)

Water Management

## Competency field

Refer to Unit Sector(s).

## Co-requisite units

Not applicable.