



Australian Government

Department of Education, Employment and Workplace Relations

RIIWMG302A Reclaim and treat water

Release: 1

RIIWMG302A Reclaim and treat water

Modification History

Not applicable.

Unit Descriptor

This unit covers reclaiming and treating of water in the metalliferous mining industry. It includes: planning and preparing, treating water, extracting water, operating and monitoring equipment, and conducting housekeeping activities.

Application of the Unit

This unit applies in all contexts to the reclaiming and treating of water during processing and also applies to the treatment of raw water to make it potable. It is appropriate for those working in technician roles, at worksites within:

- Metalliferous mining

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

Elements describe the essential outcomes of a unit of competency.	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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Access, interpret and apply <i>compliance documentation</i> relevant to reclaiming and treating of water 1.2. Receive, interpret and clarify shift changeover details 1.3. Communicate with other personnel using approved communication methods 1.4. Select personal protective equipment appropriate for work activities 1.5. Select appropriate type of reagents 1.6. Perform equipment <i>pre-start checks</i> to ensure equipment is ready for operation 1.7. Identify, address and report potential risks and hazards 1.8. Identify, address and report <i>environmental issues</i> 1.9. Adhere to emergency procedures
2. Treat water	2.1. Dose reagents at approved levels 2.2. Take sample and test according to site requirements 2.3. <i>Monitor</i> water storage levels and reject and or permeate flows
3. Extract water	3.1. Pump water to storage
4. Operate and monitor equipment	4.1. Read and interpret data from equipment <i>indicators</i> to maintain flow rates 4.2. Continuously inspect <i>plant</i> and identify defects and potential problems 4.3. Adjust equipment to approved operating parameters to optimise performance, maintain efficient water treatment systems and to meet water quality targets 4.4. Control feed to equipment 4.5. Observe <i>safety procedures</i>
5. Conduct housekeeping activities	5.1. Clean plant and equipment 5.2. Clean and store <i>auxiliary equipment</i> 5.3. Manage and report hazards 5.4. Complete all required documentation clearly, concisely and on time 5.5. Pass on shift changeover details to

	oncoming shift
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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 reclaim and treat water systems:

- apply legislative, organisation and site requirements and procedures
- identify hazards
- apply hazardous goods handling requirements and procedures
- interpret reports
- apply lifting techniques (manual, cranes and loads)
- apply records maintenance requirements
- apply safe work practices
- use hand and power tools

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 reclaim and treat water systems:

- breakdown procedures
- contaminants
- emergency procedures
- environmental procedures
- equipment processes, technical capability and limitations
- equipment safety requirements
- hazardous goods procedures and consequences of spills
- OHS procedures
- operational procedures and checks
- reagents
- site procedures
- site safety requirements

Evidence Guide

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.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<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"> • knowledge of the requirements, procedures and instructions for reclaiming and treating of water • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the reclaiming and treating of water • working with others to undertake and complete the reclaiming and treating of water that meets all of the required outcomes • consistent timely completion of the reclaiming and treating of water that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	<ul style="list-style-type: none"> • 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 skills. • 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. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second

	<p>language issues.</p> <ul style="list-style-type: none">• 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.• Where applicable, physical resources should include equipment modified for people with disabilities.• Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	<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">• written and/or oral assessment of the candidate's required knowledge• observed, documented and/or first hand testimonial evidence of the candidate's:<ul style="list-style-type: none">• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes• consistently achieving the required outcomes• first hand testimonial evidence of the candidate's:<ul style="list-style-type: none">• working with others to undertake and complete the reclaiming and treating of water
Guidance information for assessment	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>

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. 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.

Relevant compliance documentation may include:	<ul style="list-style-type: none"> • legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and Workplace Relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Pre-start checks may include:	<ul style="list-style-type: none"> • availability of equipment • detection of conditions that are unusual • job requirements • personnel availability • walk through the plant/around settling pond/drive along pipe line
Environmental issues may include:	<ul style="list-style-type: none"> • drainage • emissions • flora and fauna • hazardous chemicals • recycling • run-off • spills • waste management and disposal • water quality
Monitoring may include the checking of:	<ul style="list-style-type: none"> • blockages and spillages • concentration levels • fumes and other toxins (e.g. hydrogen cyanide) • wear and tear
Indicator readings may measure:	<ul style="list-style-type: none"> • current • flow • level • pressure • unusual noises (e.g. cavitation)

	<ul style="list-style-type: none">• vibrations
Plant may include:	<ul style="list-style-type: none">• pumps (fixed)• lines• storage tanks/dams
Safety procedures may include:	<ul style="list-style-type: none">• radiation sources• contamination• pressurised systems• reagents
Equipment and plant cleaning methods may include:	<ul style="list-style-type: none">• de-scaling
Auxiliary equipment may be anything that is portable and mobile that is not part of the fixed infrastructure, and may include:	<ul style="list-style-type: none">• discharge lines• generated sets• hand and power tools• hoses (water and air)• level indicators• pump system• strainers

Unit Sector(s)

Water Management

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.