



Australian Government

Department of Education, Employment and Workplace Relations

RIISTD301A Take environmental samples and measurements

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers taking of environmental samples and measurements in resources and infrastructure industries. It includes: collecting environmental samples; take readings and measurements; coordinating with scientists and laboratories; maintain sampling and measurement equipment; and reporting, storing and archiving environmental data.

Application of the Unit

This unit is appropriate for those working in operational or technical roles, within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- 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. Collect environmental samples	1.1. Access, interpret and apply <i>compliance documentation</i> relevant to taking of environmental samples and measurements 1.2. Collect environmental <i>samples</i> as specified in environmental management system 1.3. Preserve sample integrity throughout collection 1.4. Place samples in suitable containers and labels accurately 1.5. Identify and record characteristics of sampling environment, in particular any non-standard aspects
2. Take readings and measurements	2.1. Set up <i>measurement equipment</i> in accordance with Australian standards 2.2. Take <i>measurements</i> in accordance with environmental management system requirements 2.3. Take accurate <i>readings</i> and document at time of reading to avoid error
3. Coordinate with scientists and laboratories	3.1. Provide information clearly and accurately 3.2. Provide for delivery of samples within required time constraints 3.3. Ensure integrity of sample is maintained during packing and transport 3.4. Act promptly upon receiving feedback from laboratories where environmental risk is identified
4. Maintain sampling and measurement equipment	4.1. Maintain equipment in specified operating condition 4.2. Calibrate equipment in accordance with maintenance schedule 4.3. Perform minor repairs and adjustments where authorised 4.4. Program equipment software accurately where authorised
5. Report, store and archive environmental data	5.1. Prepare regular reports in accordance with environmental management system 5.2. Store data accurately in manual and computer systems

	5.3.Ensure data are backed up regularly
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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 take environmental samples and measurements:

- apply legislative, organisation and site requirements and procedures
- apply procedures for accurate recording of data
- use computers
- apply databases and spreadsheets
- set up measuring equipment
- apply procedures for packing and transporting environmental samples
- apply equipment calibration requirements and procedures
- apply equipment software programming requirements and procedures
- apply statistical report preparation 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 take environmental samples and measurements:

- local mine operations environmental management system related to samples and measurements
- methods for retaining sample integrity
- common readings and measured expected
- relevant company procedures and policy
- sampling and measurement equipment operations
- company and statutory reporting 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 taking environmental samples and measurements • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of environmental samples and measurements • working with others to take environmental samples and measurements that meet all of the required outcomes • consistent timely completion of environmental sampling and measurement 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

	<p>English speaking background may have second 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 take environmental samples and measurements
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
Samples may include:	<ul style="list-style-type: none"> • air and airborne dust • aerosols • sediment • rock • process streams • water • ground water • soil • noise
Sampling and measurement equipment may include:	<ul style="list-style-type: none"> • passive air samplers • low and high volume air samplers • water pumps samplers • personal air samples • photometric dust measuring equipment • gas liquid chromatographic analytical equipment
Measurements and readings may include:	<ul style="list-style-type: none"> • air velocity • flow rate • composition • temperature • humidity • barometric pressure • dust concentration and composition • water velocity • flow rate

	<ul style="list-style-type: none">• composition• temperature
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Unit Sector(s)

Sampling, Testing and Data Processing and Recording

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.