Australian Government

Department of Education, Employment and Workplace Relations

RIISTD202A Collect routine site samples

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the collection of routine site samples in resources and infrastructure industries. It includes the requirements for the preparation for sampling, conducting sample collection; preparing samples, dispatching samples and maintaining the sampling environment.

Application of the Unit

This unit is appropriate for those working in production operator, field assistant and laboratory assistant roles, at worksites within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining
- Mineral exploration

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for sampling	1.1. Access, interpret and apply ***compliance documentation*** relevant to the collection of routine site samples 1.2. Confirm the purpose, priority and scope of the ***sample*** request or plan 1.3. Liaise with relevant personnel to arrange site access and all necessary clearances/permits 1.4. Identify ***site hazards*** and review enterprise ***safety procedures*** 1.5. Use and document procedures to ensure ***representative sampling*** 1.6. Confirm quantity, location, frequency or time of sampling and ***types of samples*** to be collected 1.7. Assemble required ***sampling tools and equipment***
2. Conduct sample collection	2.1. Collect samples as specified in sample request or plan 2.2. Preserve sample integrity throughout collection 2.3. Place samples in suitable containers and label accurately 2.4. Store and transport samples 2.5. Identify and record characteristics of sampling environment, in particular any non-standard aspects 2.6. Maintain sampling equipment in a clean and safe working condition
3. Prepare samples	3.1. Verify sample, check documentation and required equipment for preparation 3.2. Perform ***sample preparation*** according to plan using recommended procedures 3.3. Contain loss of material and protect sample against contamination 3.4. Recover and clean samples using techniques and equipment specified for the particular sample 3.5. Store or dispose of residues and samples following OHS and environmental

	guidelines
4. Prepare samples for dispatch	4.1. Label, store and transport core samples to ***maintain integrity of sample***
	4.2. Use appropriate reference materials, standards and controls
	4.3. Contain loss of material and protect sample against contamination
	4.4. Document any change to preparation methods
	4.5. Forward samples for analysis to external laboratories
	4.6. Store, test and dispose of samples
5. Maintain a safe work environment	5.1. Use established work practices and personal protective equipment to ensure personal safety and that of others
	5.2. ***Minimise environmental impacts*** of sampling and generation of waste
	5.3. Dispose of all waste in accordance with enterprise procedures

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 collect routine site samples:

- apply legislative, organisation and site requirements and procedures
- apply established work practices
- wear personal protective equipment
- apply plan, report, map, specification interpretation skills
- apply record maintenance and operations monitoring procedures
- apply worksite communication 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 collect routine site samples:

- key terminology and concepts, such as: sample, contamination, traceability, integrity, chain of custody
- purpose for which the samples have been collected
- the function of key sampling equipment/materials and principles of operation
- hazards, risks and enterprise safety procedures associated with routine sampling is undertaken
- enterprise procedures dealing with:
  - sampling
  - waste management, clean up and spillage
  - handling, transport and storage of dangerous goods
- health, safety and environment 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	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: • knowledge of the requirements, procedures and instructions for the collection of routine site samples • implementation of requirements, procedures and techniques for the safe, effective and efficient collection of routine site samples • working with others to undertake and complete the collection of routine site samples that meets all of the required outcomes • consistent timely completion of the collection of routine site samples that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• 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

	language issues. • 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	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:
	• written and/or oral assessment of the candidate's required knowledge
	• observed, documented and/or first hand testimonial evidence of the candidate's:
	  • 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:
	  • working with others to undertake and complete the collection of routine site samples

Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

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.	
Compliance documentation may include:	• 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:	• soils • rocks • minerals • fossils • hydrocarbons • drill core • stream sediment • mine samples • gas or air samples • water, wastewater, stormwater, sewage, sludges • construction materials • solid wastes • raw materials • final products • hazardous materials and/or dangerous goods • atmospheric or airborne contaminants
Site hazards may include:	• solar radiation, dust and noise • wildlife, such as snakes, spiders, domestic animals • biohazards, such as micro-organisms and agents associated with soil, air, water • chemicals, such as acids and hydrocarbons • sharps, broken glassware • manual/handling of heavy sample bags and containers

	• crushing, entanglement, cuts associated with moving machinery and hand tools • falling objects, uneven surfaces, heights, slopes, wet surfaces, trenches, confined spaces • vehicle handling in rough terrain, boat handling in rough or flowing water
Safety procedures may include:	• use of materials safety data sheets (MSDS) • use of personal protective equipment, such as hard hats, heavy protection, gloves, safety glasses, goggles, faceguards, coveralls, gown, body suits, respirators, safety boots • correct labelling of hazardous materials • handling and storing hazardous material and equipment in accordance with labels, MSDS, manufacturer's instructions, enterprise procedures and regulations • regular cleaning and/or decontamination of equipment • machinery guards • signage, barriers, service isolation tags, traffic control, flashing lights • lockout and tagout procedures
Representative sampling may include:	• size • frequency • location
Types of samples may include:	• grab samples • disturbed or undisturbed materials • composite samples, such as time, flow proportioned, horizontal/vertical cross section • quality control samples, such as controls, background, duplicate, blanks
Sampling tools and equipment may include:	• hand tools • carrying devices • portable power tools • front-end loader, backhoe, excavator, drill rig • shovels, augers, bucket • sampling frames, sampling tubes, dip tubes, spears, flexible bladders, syringes • access valves • sample thief • weighted sample bottles, bottles, plastic/metal containers and disposable buckets • sterile containers, pipettes, inoculating loops,

	disposable spoons • pumps, stainless steel bailers • mechanical gravity separator • high specific gravity liquids • hand magnet • isodynamic magnetic separator • electrostatic separator • crusher • ultrasonic cleaner • panning and hand jigging • hydraulic rock splitter • diamond saw • sledge hammer • crushers • screens
Sample preparation may include:	• marking up • splitting • sub-sampling • sealing • size reduction • specific gravity • magnetic suspension • core-cutting • crushing/grinding • sieving • riffling • blending • homogenisation • coning • quartering • preparing sub-sample including: stain/polish • petrological and electron microscope/electron microprobes
Maintenance of integrity of samples could include:	• appropriate containers and lids (for example, glass, plastic, amber, opaque) • sealing of sample containers • purging of sample lines and bores • decontamination of sampling tools between collection of consecutive samples • use of appropriate preservatives (for example, sodium azide, toluene or antibiotics) • wrapping container in foil or wet newspaper

	• temperature control, which may involve prevention of direct contact between the sample and coolant • transfer of sterile sample into sterile container • monitoring of storage conditions • enterprise/legal traceability through appropriate sample labelling and records
Minimising environmental impacts may involve:	• replacement of soils and vegetation • driving to minimise soil erosion and damage to fauna and vegetation • disposal of surplus, spent or purged materials • recycling of non-hazardous wastes • appropriate disposal of hazardous waste • cleaning of vehicles to prevent transfer of pests and contaminants

Unit Sector(s)

Sampling, Testing and Data Processing and Recording

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.