Australian Government

Department of Education, Employment and Workplace Relations

PMLTEST200A Conduct routine site measurements

Release: 1

PMLTEST200A Conduct routine site measurements

Modification History

Unit Descriptor

This unit of competency covers the ability to make direct measurements using enterprise procedures and equipment calibrated by others. Measurements will be straightforward and involve a minimal number of steps, take a short time and have easily recognised control limits.
This unit of competency has no prerequisites.
This unit of competency is applicable to production operators, field assistants and laboratory assistants in manufacturing, construction materials and environmental services.
Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These are found at the end of this unit of competency under the section This competency in practice.

Application of the Unit

Licensing/Regulatory Information

Pre-Requisites

Employability Skills Information

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.
Performance Criteria describe the level of performance required to demonstrate achievement of the element.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Prepare for measurement(s)	1.1 Confirm the purpose, priority and nature of measurements required
	1.2 Liaise with relevant personnel to arrange site access and all necessary clearances/permits

		1.3 Identify site hazards and review enterprise safety procedures
		1.4 Assemble all measuring and safety equipment and check they are fit for purpose
		1.5 Check all equipment/materials against a given inventory and stow them to ensure safe transport
		1.6 Arrange appropriate transport for site access as required
2	Perform measurement(s)	2.1 Locate measurement points and services at the site
		2.2 Gain access to measurement points by removing covers and locks as appropriate
		2.3 Seek advice if the required measurements cannot be made or if procedures require modification
		2.4 Operate measuring equipment in accordance with enterprise procedures and manufacturer's instructions
		2.5 Take sufficient readings to ensure reliable data
		2.6 Record data with appropriate accuracy, precision and units
		2.7 Record environmental/site conditions and any other observations that may impact on data quality
		2.8 Recognise obvious errors/atypical data and take appropriate corrective action
		2.9 Secure measuring points by replacing covers and locking as appropriate
3	Finalise measurements	3.1 Follow enterprise procedures for the cleaning/decontamination of equipment and vehicle as necessary
		3.2 Check all equipment and materials against inventory and stow for safe transport
		3.3 Liaise with relevant personnel to restore normal production and/or services as necessary
		3.4 Report all measurements in accordance with

	enterprise procedures
	3.5 On return, check and document serviceability of equipment before storage
4 Maintain a safe work environment	4.1 Use established work practices and personal protective equipment to ensure personal safety and that of others
	4.2 Minimise environmental impacts of measurements and generation of waste
	4.3 Dispose of all waste in accordance with enterprise procedures

Required Skills and Knowledge

Evidence Guide

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence.

Critical aspects of competency

Competency must be demonstrated in the ability to perform consistently at the required standard. In particular, assessors should look to see that the candidate:

closely follows procedures when performing a variety of measurements at a range of sites
performs measurements with minimal environmental impact
reads scales/displays accurately for a wide range of values
records data legibly, free of errors and with appropriate accuracy, precision and units
demonstrates enterprise and/or legal traceability requirements
liaises with others to access sites and perform measurements efficiently
recognises limitations and seeks timely advice.

Underpinning knowledge

Competency includes the ability to apply and explain:

key terminology and concepts, such as: analogue, digital, accuracy, precision, traceability, uncertainty and chain of custody
purpose of the measurements
the function of key equipment/materials and principles of operation
hazards, risks and enterprise safety procedures associated with routine measurements undertaken
enterprise procedures dealing with:
measurements
waste management, clean-up, spillage
handling, transport and storage of dangerous goods
relevant health, safety and environmental requirements.

Assessment context and methods

This unit of competency is to be assessed in the workplace or simulated workplace environment.

The following assessment methods are suggested:

review of the quality of data and documentation provided by candidates
observation of the candidate performing a range of measurements
feedback from supervisors and clients that relevant procedures were followed
oral/written questioning about measurement procedures.

In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. Questioning techniques should suit the language and literacy levels of the candidate.

Interdependent assessment of unit

This unit of competency may be assessed with:

PMLSAMP200A Collect routine site samples.

Resource implications

Resources may include:

access to a variety of sites
measurement and safety procedures
a selection of measuring equipment and documentation.

This competency in practice

Manufacturing and construction materials

A laboratory assistant is required to conduct daily routine site measurements around the plant. Each day they contact the engineering department to arrange for an engineer to accompany them to operate all mechanical systems (for example, valves, pitcovers) associated with collection of samples and/or site measurements. The laboratory assistant locates the required safety equipment, ensures that all measurement equipment is operational and pre-calibrated and dons appropriate personal protective equipment. They record site measurements directly in the plant monitoring log book along with any comments concerning plant operating conditions. Upon returning to the laboratory they enter this information into the Laboratory Information Management System (LIMS). The laboratory assistant then cleans and stores all equipment used in the routine site measurements.

Environmental

A field assistant is part of a team examining the rehabilitation of a mine site. They help to construct a grid map of the study area. The assistant is given identification photo cards for six species of plant and asked to count the number of each species in part of the grid, taking care to minimise environmental impact. They then record the data on a map using a predetermined key.

Key Competencies

The seven key competencies represent generic skills considered for effective work participation. The bracketed numbering against each of the key competencies indicates the performance level required in this unit. These are stand-alone levels and do not correspond to levels in the Australian Qualifications Framework (AQF).

Level (1) represents the competence to undertake tasks effectively
Level (2) represents the competence to manage tasks
Level (3) represents the competence to use concepts for evaluating and reshaping tasks.

Collecting, analysing and organising information	Communicating ideas and information	Planning and organising activities	Working with others and in teams	Using mathematical ideas and techniques	Solving problems	Using technology
Level 1	Level 1	Level 1	Level 1	Level 1	Level 1	Level 1

Range Statement

The range of variables relates to the unit of competency as a whole. It allows for different work environments and situations that will affect performance.
Where reference is made to industry Codes of Practice, and/or Australian/international standards, it is expected the latest version will be used.
Personnel usually have access to information, such as:
enterprise procedures for specific client measurements at particular sites
maps and site plans
material safety data sheets (MSDS) and safety procedures
enterprise recording and reporting procedures.
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
manual/handling of heavy equipment or materials
crushing, entanglement, cuts associated with moving machinery
falling objects, uneven surfaces, heights, slopes, wet surfaces, trenches, confined spaces
vehicle handling in rough terrain, boat handling in rough or flowing water
vehicular or pedestrian traffic
Safety practices may include:
use of material safety data sheets (MSDSs)
use personal protective equipment, such as hard hats, hearing protection, gloves, safety glasses, goggles, face-guards, 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 decontaminating of equipment
machinery guards
signage, barriers, service isolation tags, traffic control, flashing lights
lockout and tagout procedures
Measurements could include the use of instruments and/or kits to test:
pH, specific ions, such as iron in water using dipsticks
dissolved oxygen (DO)
electrical conductivity (EC)
Other measurements could include:
sound (for example, dB level, dBA)
light levels, illumination
basic production/process parameters (for example, flow, temperature, pressure, mass, depth)
simple surveys (for example, number of trees in quadrant)
background radiation (for example, Geiger counter)
dimensions
meteorological measurements (for example, temperature, rainfall, wind)
Common measuring equipment could include:
tape measure, rulers, micrometers calipers, water level indicators
balances
meter/probe systems (for example, dissolved oxygen (DO), electrical conductivity (EC))

analogue and digital meters (for example, voltage, current, resistance, pressure, temperature, barometers, anemometers, hygrometers)
dipsticks or spot test kits
clocks, timing devices.
Services may include:
water supply, gas, electricity
telecommunications
irrigation, stormwater, drainage, sewerage systems
production plant.
Appropriate corrective actions may include:
logical check of equipment set-up
check of calibration, zero error, drift for basic instruments
careful re-reading of procedures
repeat measurements
seek advice.
Minimising environmental impacts may involve:
disposal of surplus, spent or purged materials
recycling of wastes
responsible driving to avoid damage to vegetation and fauna
cleaning of vehicles to prevent transfer of pests and contaminants.

Health, **safety and environment**

All operations to which this unit applies are subject to stringent health, safety and environmental (HSE) requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

All operations assume the potentially hazardous nature of samples and require standard precautions to be applied. Users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council and State and Territory Departments of Health. All operations are performed in accordance with standard operating procedures.

Unit Sector(s)