



Australian Government

Department of Education, Employment and Workplace Relations

MSS025015A Plan and conduct environmental project work

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit of competency covers the ability to plan and conduct a small scale, low risk, measurement-based environmental project. Personnel may work individually, or as part of a team. They are expected to develop and confirm a project brief/plan with their supervisor, execute and document the project, and evaluate the outcomes. The unit does not cover procurement of project resources and contract management.

Application of the Unit

This unit of competency is applicable to environmental technicians working in all industry sectors.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

1	Scope project with supervisor	1.1	Clarify project aim, objectives and timeframe
		1.2	Identify intended outcomes, key stakeholders, drivers and likely constraints
		1.3	Identify key activities, milestones and resources

			required to achieve deliverables on time
		1.4	Agree on performance indicators to monitor project progress and acceptance criteria for deliverables
2	Prepare project plan in consultation with supervisor	2.1	Identify relevant legislation, standards, codes, procedures and/or enterprise requirements
		2.2	Locate and review background information to inform the development of project methodology
		2.3	Analyse risks for all aspects of project work
		2.4	Consider a range of strategies for conducting the project, including alternative measurement methods
		2.5	Outline feasible and measurable project objectives, selected methodology, outputs and the roles and responsibilities of participants
		2.6	Consider integration and sequencing of tasks as part of optimising work breakdown structure
		2.7	Present draft project plan and work schedule to supervisor for review and approval
3	Review project methodology	3.1	Conduct trials to refine methodology and/or provide proof of concept, as necessary
		3.2	Troubleshoot equipment and methodology problems and develop/test solutions in consultation with supervisor, as necessary
		3.3	Modify draft project plan, as necessary
		3.4	Document all accepted/rejected ideas and/or prototypes from trials
4	Execute project plan and analyse outcomes	4.1	Communicate plan to other participants, as necessary
		4.2	Safely operate measurement

- equipment/instruments in accordance with manufacturer requirements, test methods and enterprise procedures
- 4.3 Obtain data using specified methods and in accordance with safety and legislative/regulatory/enterprise requirements
 - 4.4 Record and store data in agreed formats
 - 4.5 Recognise anomalous results and investigate causes
 - 4.6 Evaluate data using specified quality criteria and reference materials
 - 4.7 Use appropriate mathematical/statistical/graphical methods and software to analyse and present results
 - 4.8 Report results using the appropriate accuracy, precision and units
- 5 Report project progress and outcomes
- 5.1 Provide progress reports/project outputs on time and at the required quality standard
 - 5.2 Evaluate the project process and outputs in comparison with the project objectives and performance criteria
 - 5.3 Identify any issues and opportunities for improvement
 - 5.4 Prepare project reports containing the required information and using the agreed style, voice and format
 - 5.5 Complete and store all project documentation
 - 5.6 Present final report of project process and outcomes to supervisor

Required Skills and Knowledge

Required skills

Required skills include:

- interpreting relevant legislative/regulatory/enterprise requirements, equipment manuals, test and sampling methods
- using enterprise tools to recognise and assess risks associated with project activities
- preparing project plans and work schedules
- setting up, operating and maintaining equipment/instruments
- applying safe work procedures and equipment to avoid hazards and control risks
- processing data using relevant mathematical/statistical/graphical methods
- evaluating results and drawing logical conclusions about quality and compliance with legislative/regulatory requirements
- seeking advice when issues/problems are beyond scope of competence/responsibility
- presenting measurement results in specified formats
- critically evaluating project process, measurement methodology, and outputs against performance criteria
- preparing oral/written reports and project presentations using enterprise guidelines
- working safely

Required knowledge

Required knowledge includes:

- relevant environmental and measurement terms, concepts and principles
- relevant legislative/regulatory/enterprise requirements
- enterprise and/or regulator sampling, monitoring and testing procedures that apply to assigned project activities
- project management principles
- enterprise project planning, management and reporting requirements
- enterprise procedures for identifying/assessing and controlling hazards/risks associated with project activities
- relevant health and safety requirements and enterprise safe work procedures

Evidence Guide

Overview of assessment	Competency must be demonstrated in the ability to perform consistently at the required standard.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently apply the skills in this unit of competency in new and different situations and context. Critical aspects of assessment and evidence include: - researching background information for the project to inform selection of sampling/test/measurement methods and project methodology - complying with relevant legislative/regulatory requirements and enterprise procedures - analysing project requirements and conducting trials to develop a feasible, cost-effective and efficient plan - using available project management procedures and tools to develop plans and monitor/report progress - seeking advice/assistance when difficulties are beyond scope of responsibility or technical competence - working safely - providing quality deliverables on time - evaluating project process and outputs.
Context of and specific resources for assessment	This unit of competency is to be assessed in the workplace or a simulated workplace environment. Assessment should emphasise a workplace context and procedures found in the candidate's workplace. This unit of competency may be assessed with: - environmental monitoring units, such as the <i>MSS024000A and MSS025000A series units of competency</i>. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. Resources may include: - site/project history - legislative/regulatory requirements - specified sampling and testing methods/procedures - relevant enterprise project management procedures, tools and software - physical resources required for work activities, such as map, laptop computer, digital/video camera, sampling and monitoring, survey and testing

	equipment and instruments.
Method of assessment	The following assessment methods are suggested: • review of project plans/trials, records, outcomes and reports prepared by the candidate • feedback from managers and project team members about the candidate's ability to plan and conduct environmental project work effectively • questioning/interview to assess the candidate's understanding of project management principles and their ability to plan and conduct projects and deal with unforeseen challenges • observation of the candidate's interactions with project team members • presentation of project plan, objectives, process and outputs, and lessons learned to an appropriate audience. 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. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work-like environment.
Guidance information for assessment	

Range Statement

Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Legislation, standards, codes, procedures and/or enterprise requirements	Legislation, standards, codes, procedures and/or enterprise requirements may include: • federal legislation, such as • Environment Protection and Biodiversity

	Conservation Act 1999 • Australian Heritage Council Act 2003 • Native Title Act 1993 • state/territory government legislation and regulations and local government by-laws, policies, and plans dealing with: • land use, acquisition, planning and protection • environmental protection • cultural/heritage protection • vegetation management • nature conservation and wildlife/plant protection • water and water management • soil conservation • pollution and contaminated sites • fisheries, forestry and mining operations • Australian and international standards, such as: • AS/NZS ISO 14000 Set:2005 Environmental management standards set • AS 5667 Set:1998 Water quality sampling • state and territory regulator sampling and testing manuals and guidelines (e.g. Environmental Protection Authority (EPA)) • Australian Dangerous Goods Code ADG7 • occupational health and safety (OHS) national standards and codes of practice • enterprise environmental management plans and procedures for specific sites and/or activities (e.g. sampling, monitoring, construction and mining)
Background information	Background information may include: • site or project history • client history • records of consultations with stakeholders • emergency plans and safety procedures • site access protocols and permits • maps (road and topographical) • existing databases (e.g. vegetation, topography, soils and regional ecosystem maps) • legislative/regulatory requirements • enterprise environmental management plans for site • enterprise, regulatory or standard methods/procedures for environmental sampling, monitoring or in-field testing • manufacturer information or manuals for

	environmental equipment • relevant case studies and good practice models
Environmental project work	Environmental project work will be consistent with the roles and responsibilities of an environmental officer and may include collecting and presenting data related to: • outdoor air quality • water quality • noise • surface water, environmental flows, groundwater and catchment studies • hydrological surveys • occupational hygiene (e.g. air quality, noise and radiation) • ecology studies • soil surveys • geotechnical surveys • contaminated site management (with appropriate risk analysis and supervision) • land management • coastal management • wetland management • stormwater management • energy technologies and services • waste management
Environmental measurements	Environmental measurements could involve real or simulated work activities and may include: • in-field sampling and testing • conducting flora and/or fauna surveys • conducting soil surveys and soil profiling at a site • commissioning or modifying field equipment or instruments • establishing or modifying environmental monitoring stations • growth of species of environmental interest under controlled conditions • remediation trials • laboratory testing of environmental samples
Project plan	Project plan may include: • scope • objectives • work breakdown structure

	• sampling/testing/monitoring/survey methods • available resources (e.g. equipment and personnel) • specific roles and responsibilities of participants • budget and cost estimates • data quality requirements and assurance procedures • risk analysis and control measures • safety requirements and related work procedures • stakeholders and consultation procedures • milestones • output/project deliverables and their acceptance criteria • project management procedures covering planning, risk analysis, communications and reporting • project management software and tools, such as Gantt and program and evaluation review technique (PERT) charts, critical path method, and records of costs and inputs
Risks and hazards	Risks and hazards may include: • exposure to solar radiation, dust and noise • exposure to severe weather conditions • personnel getting lost • manual handling of heavy objects • injuries caused by power tools, generators and moving machinery • vehicle and boat handling in rough/remote conditions • presence of hazardous materials on site and/or exposure to harmful radiation, contamination and microorganisms • accidents, emergencies and incidents, such as snake, insect or animal bites
Safety procedures and control measures	Safety procedures and control measures may include: • use of personal protective equipment, such as sunscreen, hats, safety glasses, gloves, coveralls and safety boots • ‘stay with vehicle’ and other survival techniques • regular communication schedule • global positioning system (GPS), maps and aerial photos • handling, storage and disposal of all hazardous materials/waste in accordance with MSDS, labels, enterprise procedures, codes and regulations • use of specified safe work procedures for tasks

Mathematical/statistical/graphical methods and software	Mathematical/statistical/graphical methods and software may include: • determination of linear, logarithmic, exponential and power relationships • regression lines and correlation coefficients • uncertainty calculations • frequency and probability plots • parametric statistical tools, such as t-test, z-test, binomial and analysis of variance (ANOVA) • non-parametric statistical tools, such as Chi-square test • spreadsheets and databases
Project documentation	Project documentation may include: • sampling, monitoring, survey or in-field test data and results • records of equipment use • records of time spent and approved expenditure • emails and correspondence • records of consultations • progress reports • final reports/briefings
OHS and environmental management requirements	OHS and environmental management requirements: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health

Unit Sector(s)

Environmental

Custom Content Section

Not applicable.