



Australian Government

MSS025025 Monitor and evaluate noise

Release: 1

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Modification History

Release 1. Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Supersedes and is not equivalent to MSS025008 Monitor and evaluate noise.

Application

This unit describes the skills and knowledge required to prepare for and conduct noise surveys and report results.

This unit applies to environmental technicians and similar roles who are required to confirm noise monitoring requirements, perform noise monitoring and process, analyse and verify data.

This unit applies in a range of industry sectors including but not limited to environmental services (e.g. monitoring of environmental and/or occupational noise); environmental compliance, auditing and inspection; environmental management; and occupational hygiene.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil.

Competency Field

Environmental monitoring and technology

Unit Sector

Not applicable

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Confirm noise monitoring requirements	1.1 Confirm the purpose for noise monitoring with responsible person 1.2 Confirm locations, timing and frequency of monitoring from monitoring plan or other instructions 1.3 Check that proposed noise measurement procedures comply with

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	workplace and environmental requirements and relevant regulatory requirements 1.4 Confirm legislative, regulatory and licensing requirements and approvals that apply to the monitoring program
2. Prepare for noise measurement	2.1 Review noise monitoring plan and procedures, including objectives, known or identified issues, and any required changes 2.2 Identify site hazards and review environmental and workplace health and safety (WHS) procedures to determine control measures 2.3 Liaise with relevant personnel to arrange site access and obtain any clearances and/or permits needed 2.4 Select noise monitoring instruments and any ancillary equipment required for measurement procedures 2.5 Assemble field test equipment and complete pre-use and calibration checks in accordance with standards, workplace procedures and manufacturer instructions 2.6 Prepare equipment for safe and secure transport and safe installation at the monitoring location 2.7 Arrange suitable transport to, from and around site
3. Perform noise measurement	3.1 Recognise and record significant site features relevant to noise measurement 3.2 Select sampling sites with conditions that are conducive to valid and reliable noise measurement and record locations 3.3 Measure and record relevant site condition parameters and make any modifications to procedures needed in response 3.4 Check calibration of sound level meter, make any required adjustments and record results 3.5 Conduct noise measurements in accordance with workplace, regulatory and manufacturer procedures 3.6 Ensure that background measurements are obtained at an appropriate time, under appropriate conditions and in accordance with environmental, workplace and regulatory procedures 3.7 Repeat and record calibration measurements at the conclusion of the measurement sequence in accordance with workplace/regulatory procedures 3.8 Collect and/or record all results and ensure that they are accurately

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	transferred to workplace information database
4. Process and interpret noise data	4.1 Analyse and verify measured sound levels, other data and field observations, noting outliers, atypical or missing data 4.2 Analyse and verify that all processed data and calculations are free from error, with measures of uncertainty where relevant 4.3 Evaluate results against modelled or expected values, relevant standards and/or statutory criteria and identify any significant difference or trends 4.4 Estimate and document uncertainty of measurement in accordance with workplace procedures, if required 4.5 Interpret trends in data and/or results and report out-of-specification or atypical results promptly to relevant personnel 4.6 Determine if obvious procedure or equipment problems have led to atypical data or results 4.7 Compare results with established noise standards, statutory noise limits or similar 4.8 Record and report data and results in accordance with statutory or workplace requirements for a noise impact assessment, noise management plan, review, audit or compliance report.
5. Maintain a safe work environment	5.1 Use established safe work practices and personal protective equipment (PPE) to ensure personal safety and that of other personnel 5.2 Minimise the generation of wastes and environmental impacts 5.3 Care for and store equipment and materials as required

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret workplace documents and regulatory requirements
- Writing skills to record observations and measurements and report results
- Oral communication skills to communicate with supervisor
- Numeracy skills to interpret and perform calculations on data.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. No equivalent unit

Links

Companion Volume Implementation Guides are found in VETNe -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS025025 Monitor and evaluate noise

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- prepare for and conduct at least 2 noise surveys using at least one handheld sound level meters and at least one fixed noise monitoring station
- process, evaluate, verify and report data from at least 2 noise surveys.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- scientific terminology, concepts and principles, including:
 - sound and noise
 - frequency, pitch and wavelength
 - sound power and acoustic energy
 - sound levels, pressure and intensity
 - sound propagation with distance
 - measurement units (dBA and others)
 - adding and subtracting sound levels
 - physiology of hearing
 - perception of noise
 - sources of noise, point sources and line sources
 - types of noise, such as continuous, intermittent and impulsive
 - typical noise levels
 - frequency weighting curves
- function of key components and operating principles of sound level meters, integrating-averaging meters, personal sound exposure meters and/or noise measuring instruments, including response, sensitivity, range, and hold circuits
- calibration of handheld sound measuring instruments
- effects on test results of modifying meter/instrument settings
- measurement methods, including techniques for:

- measuring different noise types, including steady noise, discretely varying noise and impulsive noise
- methods for measuring noise exposure, including equivalent continuous sound level (Leq)
- common sources of uncertainty in sound level measurement, including mishandling of equipment, meteorological conditions, effects of topography and built structures, reflected and absorbed sound, and background noise effects
- significant site features relevant to noise measurement including noise sources, direction and approximate distance, barriers and structures, noise sensitive areas and adjacent land uses
- data processing techniques, including:
 - frequency analysis and weighting networks (including at least A and Z)
 - calculation of combined sound levels using graphical and mathematical equation techniques
 - statistical analysis, including LA10, LA50 and LA90
 - time average (equivalent continuous) measurement (LAeqT)
 - characterisation of noise by octave band analysis, narrow band analysis, FFT and sound character
 - background noise calculations, background noise level (LA90)
 - day, evening, and night sound levels (Lden)
 - calculation of individual noise exposure
 - noise mapping
 - noise rating curves
- regulatory requirements related to environmental noise measurement including legislation, policies and codes of practice, noise standards and statutory noise limits
- procedures for maintaining, storing and transporting noise measurement equipment and instrumentation
- common site hazards and control measures
- health, safety and environment requirements, including field safety and survival principles.
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Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - site monitoring plan and related test methods and field protocols
 - noise measuring equipment, data loggers and telemetry equipment required in site monitoring plan
- modelling of industry operating conditions, including:
 - access to site/s.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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