MSL916001 - Develop and maintain laboratory documentation

This unit This unit of competency covers the ability to develop and maintain relevant documentation and systems in response to identified information requirements or changes in laboratory policy or external accreditation requirements. It includes the analysis of specialised technical requirements and the development and/or amendment of workplace documents, procedures and record keeping systems using established workplace procedures. Final responsibility for documentation and systems generally rests with professional scientific/medical/engineering staff who have the appropriate signatory status or legal delegation.

**Status:** Core  
**Prerequisites:** Nil  
**Elements**
- Recognise documentation needs/deficiencies
- Develop/revise documentation
- Implement and evaluate new laboratory documentation

MSL916002 - Manage and develop teams

This unit This unit of competency covers the ability to develop and empower team members through motivating, mentoring, coaching and promoting team cohesion to achieve planned outcomes. It includes managing the team to improve its performance within agreed goals, contexts and constraints.

**Status:** Core  
**Prerequisites:** Nil  
**Elements**
- Promote team effectiveness
- Identify and develop individual potential
- Monitor individual and team performances

MSL916003 - Supervise laboratory operations in work or functional area

This unit This unit of competency covers planning, allocation of tasks, coordination, quality assurance, monitoring resource usage and recording and reporting of laboratory operations. This requires using significant judgement about work sequences, choosing appropriate technology and procedures to ensure that products and services meet customer expectations, and ensuring that operations are conducted safely and efficiently in keeping with the workplace business plan.

**Status:** Core  
**Prerequisites:** Nil  
**Elements**
- Monitor and direct work practices within functional area
- Manage personnel within work area
- Establish resource requirements, operating plans and budget
- Procure resources to achieve operational plans
- Monitor and optimise operational performance and resource usage
MSL916004 - Maintain registration and statutory or legal compliance in work or functional area

This unit This unit of competency covers responsibility for the day-to-day operation of the work or functional area and its compliance with legislation and licensing, registration, ethical or accreditation requirements, e.g. National Association of Testing Authorities (NATA), and workplace policies and procedures.

Status: Core
Prerequisites: Nil
Elements
- Interpret and communicate current legislation, codes and standards
- Ensure that work practices meet compliance requirements
- Monitor, analyse, adjust and report performance
- Investigate, rectify and report non-conformance

MSL936001 - Maintain quality system and continuous improvement processes within work or functional area

This unit This unit of competency covers responsibility for the day-to-day operation of the work or functional area and ensuring that quality system requirements are met and continuous improvements are initiated.

Status: Core
Prerequisites: Nil
Elements
- Develop and maintain quality framework within work area
- Maintain quality documentation
- Provide training in quality systems and improvement processes
- Optimise and report performance
- Evaluate relevant components of quality system

MSL946001 - Implement and monitor WHS and environmental management systems

This unit This unit of competency covers the ability to implement and monitor the work health and safety (WHS) and environmental management systems for a work group or laboratory, within the scope of a 'head officer's' responsibilities as defined in AS/NZS 2243 Set: 2006 Safety in laboratories. Where the WHS management system is already established then this unit of competency may apply to the review of the system.

Status: Core
Prerequisites: Nil
Elements
- Implement requirements for the WHS and environmental management systems
- Implement and maintain participative arrangements for the management of WHS and the environment
- Implement and maintain WHS and environmental risk management processes
- Implement and maintain an WHS and environmental training program
- Implement and maintain a system for records
- Identify areas for systems improvement
- Initiate and maintain systems improvements
MSMENV472 - Implement and monitor environmentally sustainable work practices
This unit This unit of competency covers the skills and knowledge required to effectively analyse the workplace in relation to environmentally sustainable work practices, and to implement improvements and monitor their effectiveness.

Status: Core
Prerequisites: Nil

Elements
- Investigate current practices in relation to resource usage
- Set targets for improvements
- Implement performance improvement strategies
- Monitor performance

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MSAENV672B - Develop workplace policy and procedures for environmental sustainability
This unit This competency covers the outcomes required to develop and implement a workplace sustainability policy, including the modification of the policy to suit changed circumstances. This unit is based on the sustainability guideline standard GCSSUS03A Develop workplace policy and procedures for sustainability.

Status: Elective "A"
Prerequisites: Nil

Elements
- Develop workplace sustainability policy
- Communicate the policy
- Implement the policy
- Review policy implementation

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MSL916005 - Manage complex projects
This unit This unit of competency covers the ability to interpret complex technical briefs, determine project methodologies and resource requirements, establish project plans, manage projects to successful conclusions and evaluate project outcomes.

Status: Elective "A"
Prerequisites: Nil

Elements
- Interpret brief and design feasible project plan
- Establish and implement approved project plan
- Manage project
- Finalise project
- Evaluate project methodology

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MSL936002 - Conduct an internal audit of the quality system
This unit This unit of competency covers the ability to prepare for, conduct and document an internal audit of aspects of the laboratory’s quality system. It also covers the implementation of the identified corrective action and opportunities for improvement and the monitoring of their effectiveness.

Status: Elective "A"
Prerequisites: Nil

Elements
- Prepare for internal audit
- Conduct audit
- Report findings
- Complete corrective actions

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MSL976002 - Prepare plans and quality assurance procedures for environmental field activities

This unit This unit of competency covers the ability to use a systematic planning process to develop plans and quality assurance procedures covering multiple environmental field monitoring or survey activities for a wide range of environmental systems. The unit covers both defining the purpose of the environmental field activities and establishing their overall requirements. These requirements will involve the collection of appropriate data, the monitoring/survey methodologies to be used, and the design and documentation of a final overall implementation plan that includes budget, training and resource requirements. This unit of competency does not cover the development of monitoring or survey protocols.

Status: Elective "A"
Prerequisites: MSL974007 Undertake environmental field-based monitoring & MSL975011 Design and supervise complex environmental field surveys

Elements
- Establish the overall requirements of the field activities
- Scope all requirements to collect appropriate data under field conditions
- Select and adapt field protocols covering the field activities
- Design and document a detailed implementation plan
- Prepare a financial budget and staff training and work programs

MSL976003 - Evaluate and select appropriate test methods and/or procedures

This unit This unit of competency covers the ability to evaluate and select test methods and/or procedures that are relevant to the current and evolving scope of the laboratory’s operations. Selection of test methods and/or procedures may involve the appraisal of new and emerging technologies and may inform decision making about possible extension of the laboratory’s scope. Alternatively, it may relate to existing testing requirements, ‘one-off’ tests, client’s special requirements or new tests required to satisfy new legislative, accreditation, licensing or regulatory requirements.

Status: Elective "A"
Prerequisites: Nil

Elements
- Determine sample characteristics and testing requirements
- Evaluate possible test methods and/or procedures
- Recommend appropriate test methods and/or procedures
- Confirm and document selected methods and/or procedures

MSL977001 - Contribute to the development of products and applications

This unit This unit of competency covers the ability to evaluate a product/application brief and to contribute to the development of products and applications to meet the requirements of the brief.

Status: Elective "A"
Prerequisites: MSL976003 Evaluate and select appropriate test methods and/or procedures

Elements
- Scope the development project
- Set scope of project
- Develop new product formulation
- Assist with preparation of quality/regulatory compliance procedures/materials
- Document and report project outcomes

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MSL977002 - Troubleshoot equipment and/or production processes

This unit This unit of competency covers the ability to apply technical, instrumental and equipment knowledge and skills to troubleshoot testing equipment and testing issues related to production processes, identify problems and recommend corrective action.

Status: Elective "A"
Prerequisites: Nil

Elements
- Identify abnormal equipment and/or process performance
- Identify causes of substandard performance
- Recommend corrective action

MSL977003 - Contribute to validation of test methods

This unit This unit of competency covers the ability to validate test methods following defined protocols to ensure that they are based on sound scientific principles and are fit for the purpose for which they are to be used.

Status: Elective "A"
Prerequisites: MSL976003 Evaluate and select appropriate test methods and/or procedures

Elements
- Confirm equipment has been qualified and validated
- Validate test method according to defined protocol
- Evaluate and record results

MSL977004 - Develop or adapt analyses and procedures

This unit This unit of competency covers the ability to develop or adapt analyses, including methods and procedures, to meet workplace and/or regulatory requirements. New analyses, methods and associated procedures may be required to meet a customer's brief, analyse new products or raw materials, improve laboratory efficiency or meet changing regulatory requirements.

Status: Elective "A"
Prerequisites: MSL976003 Evaluate and select appropriate test methods and/or procedures

Elements
- Determine gaps and deficiencies in present methods and procedures
- Research and propose alternatives
- Evaluate alternatives, develop analyses and recommend methods and procedures
- Document and report new methods and procedure

MSL904001 - Perform standard calibrations

This unit This unit of competency covers the ability to calibrate test and measurement equipment in accordance with standard calibration procedures and documented test methods. These procedures/methods specify all associated reference standards, materials, equipment and methods to be used and the required parameters or quantities and ranges to be tested, including the criteria for rejection or approval.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare items for calibration
- Perform calibration
- Document results
- Finalise calibration
MSL905001 - Perform non-standard calibrations

This unit This unit of competency covers the ability to recognise non-conforming calibration work, research and select the most appropriate test method or calibration procedure for a given measurement request, and then conduct the calibration. It also covers the ability to modify and revise existing procedures or substitute alternative instruments and measurement standards, when necessary.

Status: Elective "B"

Prerequisites: MSL904001 Perform standard calibrations

Elements
- Select the appropriate calibration procedure
- Prepare items for calibration
- Perform calibration
- Document results
- Finalise calibration

MSL905002 - Create or modify calibration procedures

This unit This unit of competency covers the ability to create or modify calibration procedures in response to the introduction of alternative/new equipment, changing test circumstances, activities involved in research and development trials or to meet client needs. The unit covers research of current calibration procedures and technology, development or modification of a procedure, its subsequent trialling and confirmation that it is fit for purpose. This unit of competency does not cover the ability to create or edit software controlled calibration procedures as this is covered in another unit of competency.

Status: Elective "B"

Prerequisites: MSL904001 Perform standard calibrations & MSL905001 Perform non-standard calibrations

Elements
- Assess the suitability of available calibration procedures
- Develop procedure
- Prepare equipment for testing
- Trial modified or new calibration procedure
- Confirm the modified or new procedure is fit for purpose
- Document and review modified or new calibration procedure

MSL905003 - Create or modify automated calibration procedures

This unit This unit of competency covers the ability to create, edit, test and document computer controlled calibration procedures for test and measurement instruments. This may be in response to the introduction of alternative or new equipment, changing test circumstances, activities involved in research and development trials or to meet client needs. The unit covers performance of automated, including computer-aided, calibrations as well as the programming and control of automated calibration systems.

Status: Elective "B"

Prerequisites: MSL904001 Perform standard calibrations & MSL905001 Perform non-standard calibrations & MSL905002 Create or modify calibration procedures

Elements
- Assess the suitability of available automated procedures
- Create or edit automated procedure
- Configure instruments/equipment
- Refine the automated procedure
- Verify automated procedure is fit for purpose
- Document and review automated procedure
MSL915001 - Provide information to customers
This unit This unit of competency covers the ability to respond to both internal and external inquiries of a specialised technical nature. The advice and information requested will require the gathering of information, such as trend analysis, collection of data and samples, confirmation of validity of results, and revision of plans or product advice additional to that on data sheets.

Status: Elective "B"
Prerequisites: Nil

Elements

- Assess the request for information and/or advice
- Prepare response
- Provide information and/or advice
- Record details of the request and response

MSL915002 - Schedule laboratory work for a small team
This unit This unit of competency covers the ability to schedule laboratory work for a small team to meet operational requirements. It covers the ability to identify resource requirements and then document, monitor and adjust schedules in response to operational variations and in consultation with relevant personnel.

Status: Elective "B"
Prerequisites: Nil

Elements

- Determine work requirements and laboratory resources
- Develop schedules in consultation with relevant personnel
- Monitor schedules
- Adjust schedules in consultation with senior personnel

MSL924001 - Process and interpret data
This unit This unit of competency covers the ability to retrieve data, evaluate formulae and perform scientific calculations, present and interpret information in tables and graphs and keep accurate records. The unit requires personnel to solve problems of limited complexity where the information may be less obvious, but not contradictory, and can be determined by direct reasoning.

Status: Elective "B"
Prerequisites: Nil

Elements

- Retrieve and check data
- Calculate scientific quantities
- Present data
- Interpret data
- Keep accurate records and maintain confidentiality
**MSL925001 - Analyse data and report results**

This unit This unit of competency covers the ability to perform scientific calculations, analyse trends and uncertainty in data and report results within the required timeframe.

**Status:** Elective "B"

**Prerequisites:** MSL924001 Process and interpret data

**Elements**

- Perform scientific calculations
- Analyse trends and relationships in data
- Determine variation and/or uncertainty in data distributions
- Check for aberrant results
- Report results

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**MSL925002 - Analyse measurements and estimate uncertainties**

This unit This unit of competency covers the ability to use statistical analysis to estimate and report measurement uncertainty in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (or its replacement Standard). Personnel are required to review their estimates of measurement uncertainty to assist with making decisions on the fitness for purpose of the measurements.

**Status:** Elective "B"

**Prerequisites:** MSL924001 Process and interpret data

**Elements**

- Identify the measured quantity and the uncertainty components
- Determine the size of each uncertainty component
- Reduce each uncertainty component to a standard uncertainty
- Calculate an expanded uncertainty to the required confidence level
- Report the expanded uncertainty

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**MSL935001 - Monitor the quality of test results and data**

This unit This unit of competency covers the ability to analyse a series of test results and data to detect potential or actual non-conformances, assess their significance and recommend preventative or corrective actions. The unit assumes personnel will have access to workplace quality assurance procedures based on Australian and/or international standards. This unit of competency does not cover the adaptation or development of test methods or procedures.

**Status:** Elective "B"

**Prerequisites:** MSL924001 Process and interpret data

**Elements**

- Verify accuracy of data and technical records
- Assess the quality of data/results
- Identify potential causes for unacceptable results
- Report findings to relevant personnel

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MSL935002 - Assist in the maintenance of reference materials

This unit This unit of competency covers the ability to assist in the maintenance of reference materials that can be used in tests and the identification of new specimens as part of quality control of laboratory procedures. The unit of competency does not cover the scientific identification of species or specimens.

Status: Elective "B"
Prerequisites: Nil

Elements
- Acquire reference materials
- Maintain reference materials
- Dispense reference materials to clients
- Maintain a safe work environment

MSL935003 - Authorise the issue of test results

This unit This unit of competency covers the ability to critically assess the accuracy of data and validity of test results prior to formally authorising their release to the client. It involves the statistical analysis of data and information generated during calibration, sampling and testing to determine whether quality and/or process parameters have been achieved. Personnel are required to investigate and, if necessary, rectify results that are not consistent with expected values.

Status: Elective "B"
Prerequisites: MSL924001 Process and interpret data & MSL925001 Analyse data and report results

Elements
- Verify the accuracy of data and technical records
- Determine if results are acceptable and within expectation
- Investigate unexpected or unacceptable results
- Liaise with clients about results

MSL935004 - Maintain instruments and equipment

This unit This unit of competency covers the ability to check the serviceability and calibration of laboratory/field instruments and equipment and perform routine maintenance, such as cleaning and replacement of consumables and minor components. Personnel are also required to perform basic troubleshooting and repairs consistent with warranty and service agreements.

Status: Elective "B"
Prerequisites: Nil

Elements
- Perform serviceability checks
- Conduct routine maintenance safely
- Perform calibration/qualification checks
- Arrange instrument servicing where appropriate
MSL953002 - Operate a robotic sample preparation system

This unit This unit of competency covers the ability to operate a robotic sample preparation system to ensure efficient throughput of samples without sacrificing quality or safety. Personnel are expected to seek advice from their shift supervisor when non-routine problems arise.

**Status:** Elective "B"

**Prerequisites:** Nil

**Elements**
- Prepare robotic system for operation
- Load samples into system
- Monitor system and report errors
- Unload samples
- Maintain a safe work environment

MSL954001 - Obtain representative samples in accordance with sampling plan

This unit This unit of competency covers the ability to obtain a range of samples that are representative of the source material (e.g. raw ingredients, product in process and final product) and to prepare the samples for testing. All sampling activities are conducted in accordance with a defined sampling plan. This unit does not cover the subsequent testing of the samples.

**Status:** Elective "B"

**Prerequisites:** Nil

**Elements**
- Prepare for sampling
- Conduct sampling and log samples
- Prepare samples for testing
- Address client issues
- Maintain a safe work environment

MSL954002 - Prepare mineral samples for analysis

This unit The unit of competency covers the ability to reduce given mineral samples to representative client samples and analytical portions that meet client requirements for analysis. Personnel are also required to recognise problems and invalid preparation steps and take appropriate corrective actions.

**Status:** Elective "B"

**Prerequisites:** Nil

**Elements**
- Interpret and schedule client requirements
- Prepare client samples for analysis
- Use non-destructive methods to prepare laboratory portions for analysis
- Maintain a safe work environment
MSL955001 - Supervise a robotic sample preparation system

This unit

This unit of competency covers the ability to ensure that a workplace's robotic sample preparation system operates safely and continuously to provide clients with samples that meet their specifications. This includes prioritising and planning job sequences, solving common system problems as they arise and working closely with system operators to ensure safety and achievement of production targets and quality standards. Personnel are not expected to undertake system repairs, servicing or non-routine cleaning and maintenance.

Status: Elective "B"

Prerequisites: MSL953002 Operate a robotic sample preparation system

Elements

- Plan work for shift
- Oversee system set-up
- Monitor system performance and recover from errors and breakdowns
- Maintain system safety
- Maintain system records
- Contribute to system improvements

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MSL963001 - Operate basic handblowing equipment

This unit

This unit of competency covers the ability to operate handblowing equipment to perform basic glasswork. Personnel may be less experienced workers working under the guidance of an experienced scientific glassblower.

Status: Elective "B"

Prerequisites: Nil

Elements

- Prepare for handblowing operations
- Follow sequence of operations for glasswork procedure to be performed
- Use annealing equipment
- Maintain a safe work environment
- Maintain records

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MSL963002 - Repair glass apparatus using simple glassblowing equipment

This unit

This unit of competency covers the ability to perform basic repairs to glass apparatus using simple glassblowing equipment. It includes the ability to assess the economics of salvage and to follow a procedure of disassembly/assembly of the apparatus in accordance with specifications.

Status: Elective "B"

Prerequisites: MSL963001 Operate basic handblowing equipment

Elements

- Prepare for repair operations
- Repair apparatus
- Operate annealing equipment
- Maintain a safe work environment
- Maintain records

***************
MSL965001 - Design and manufacture glass apparatus and glass systems

This unit This unit of competency covers the ability to design and manufacture glass apparatus and glass systems. It includes consulting with clients regarding design specifications and cost, as well as designing equipment and systems to improve efficiency, increase production capabilities and improve safety of equipment and processes.

Status: Elective "B"

Prerequisites: MSL963001 Operate basic handblowing equipment & MSL963002 Repair glass apparatus using simple glassblowing equipment

Elements

- Scope the design of glass apparatus and system
- Design glass apparatus and systems
- Manufacture glass apparatus and systems
- Maintain a safe work environment
- Maintain records

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MSL965002 - Perform glass coating, grinding and finishing operations

This unit This unit of competency covers the ability to perform glass coating, grinding and finishing operations for scientific glassware.

Status: Elective "B"

Prerequisites: MSL963001 Operate basic handblowing equipment & MSL963002 Repair glass apparatus using simple glassblowing equipment

Elements

- Prepare for work
- Perform glass coating operations
- Perform glass grinding operations
- Perform glass finishing operations
- Maintain a safe work environment
- Maintain records

***************

MSL965003 - Construct, modify and maintain high vacuum systems

This unit This unit of competency covers the ability to construct, monitor, modify and maintain high vacuum systems. Personnel are required to use advanced bench/hand glasswork techniques and equipment to fabricate glass apparatus.

Status: Elective "B"

Prerequisites: MSL963001 Operate basic handblowing equipment & MSL963002 Repair glass apparatus using simple glassblowing equipment

Elements

- Construct high vacuum systems
- Modify high vacuum systems
- Maintain high vacuum systems
- Monitor and finetune vacuum operation
- Maintain a safe work environment
- Maintain records

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MSL973004 - Perform aseptic techniques
This unit This unit of competency covers the ability to perform aseptic techniques to maintain the integrity of both the sample source and the sample. It applies to sampling techniques in tissue culture and to generic microbiological procedures.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare for aseptic sampling or transfer
- Transfer materials aseptically
- Maintain work area and equipment to prevent cross-infection and contamination

MSL973009 - Conduct field-based acceptance tests for construction materials
This unit This unit of competency covers the ability to conduct in situ tests to confirm the acceptability of raw or manufactured, construction materials prior to or after their use. Personnel are expected to be able to work independently and liaise with site personnel to ensure that testing is conducted safely and efficiently. They may transport samples and/or equipment to and from the site, as necessary, and prepare test pieces on-site for later laboratory testing.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare for field-based acceptance tests
- Perform field tests
- Collect site samples and prepare test pieces
- Finalise field testing
- Maintain a safe work environment

MSL973010 - Conduct laboratory-based acceptance tests for construction materials
This unit This unit of competency covers the ability to conduct laboratory tests to confirm the acceptability of raw and/or manufactured construction materials. Personnel will have access to established test methods, workplace procedures and readily available advice. They are expected to obtain reliable test results safely and efficiently. In general, these personnel do not calibrate equipment and make only limited adjustments to the controls. The unit of competency does not cover interpretation or analysis of results or troubleshooting equipment problems.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare for laboratory-based acceptance tests
- Prepare samples or test pieces
- Check test equipment before use
- Perform laboratory tests
- Maintain a safe work environment
MSL973011 - Perform fire pouring techniques

This unit This unit of competency covers the ability to follow standard procedures for extracting precious metals from their host matrices in readiness for analysis. Fire pourers are expected to handle routine samples, recognise common sample preparation and cupellation problems and make standard adjustments to fluxes and firings. They are expected to seek advice from their supervisor when non-routine problems arise.

Status: Elective "B"
Prerequisites: Nil

Elements
- Plan work for shift
- Prepare sample racks for fusion
- Obtain acceptable buttons and prills
- Troubleshoot and correct common recovery failures
- Perform daily maintenance of assay equipment
- Maintain a safe work environment

MSL974002 - Conduct geotechnical site investigations

This unit This unit of competency covers the ability to prepare for and conduct and conclude site activities, such as excavations, sampling and testing as part of a geotechnical investigation team. Personnel are expected to solve common site problems and seek advice to deal with situations beyond their own technical competence.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare for on-site operations
- Arrange excavation of boreholes, test pits and/or trenches
- Conduct site sampling
- Conduct testing
- Finalise site operations
- Maintain records
- Maintain a safe work environment

MSL974003 - Perform chemical tests and procedures

This unit This unit of competency covers the ability to interpret chemical test requirements, prepare samples, conduct pre-use and calibration checks on equipment and perform routine chemical tests/procedures. These tests will involve several measurement steps. The unit includes data processing and interpretation of results and tracking of obvious test malfunctions where the procedure is standardised. However, personnel are not required to analyse data, optimise tests/procedures for specific samples or troubleshoot equipment problems where the solution is not apparent.

Status: Elective "B"
Prerequisites: Nil

Elements
- Interpret and schedule test requirements
- Receive and prepare samples
- Check equipment before use
- Test samples to determine chemical species or properties
- Process and interpret data
- Maintain a safe work environment
- Maintain laboratory records
MSL974004 - Perform food tests

This unit This unit of competency covers the ability to interpret food test requirements, prepare samples, conduct pre-use and calibration checks on equipment, and perform routine testing of raw food materials, in-process materials and final products. These tests will involve several measurement steps. The unit includes data processing and some interpretation of results and tracking of obvious test malfunctions where the procedure is standardised. However, personnel are not required to analyse data, optimise tests/procedures for specific samples or troubleshoot equipment problems where the solution is not apparent.

Status: Elective "B"
Prerequisites: Nil

Elements
- Interpret and schedule test requirements
- Receive and prepare food samples
- Check equipment before use
- Test samples to determine food components and characteristics
- Process data
- Maintain a safe work environment
- Maintain laboratory records

MSL974005 - Perform physical tests

This unit This unit of competency covers the ability to interpret physical test requirements, prepare samples, conduct pre-use and calibration checks on equipment and perform routine physical tests. These tests will involve several measurement steps. The unit includes data processing and interpretation of results and tracking of obvious test malfunctions where the procedure is standardised. However, personnel are not required to analyse data, optimise tests or procedures for specific samples or troubleshoot equipment problems where the solution is not apparent.

Status: Elective "B"
Prerequisites: Nil

Elements
- Interpret and schedule test requirements
- Receive and prepare samples
- Check equipment before use
- Test samples to determine physical properties
- Process and interpret data
- Maintain a safe work environment
- Maintain laboratory records

MSL974006 - Perform biological procedures

This unit This unit of competency covers the ability to interpret work requirements, prepare samples, conduct pre-use and calibration checks on equipment, and perform routine biological procedures. These procedures may involve several steps and are used to classify cell types, species and biologically active compounds by analysing their biological and chemical characteristics. This unit includes data processing, interpretation of results and troubleshooting obvious departures from standard procedures.

Status: Elective "B"
Prerequisites: Nil

Elements
- Interpret and schedule work requirements
- Receive and prepare biological samples
- Perform techniques that assist in the classification of a cell or species
- Perform techniques that analyse biological activity
- Process and interpret data
- Maintain a safe work environment
- Maintain laboratory records
MSL974007 - Undertake environmental field-based monitoring

This unit This unit of competency covers the ability to organise and undertake field monitoring programs that are primarily focused on the determination of physical and chemical parameters and/or observation and documentation of biological/ecological systems. It covers confirming the requirements of the monitoring activities, sampling, sample handling, physical and chemical monitoring, and simple field-based analysis, data collection and recording. It also covers field camp maintenance and field safety. This unit of competency covers gaining clearance for animal trapping, tagging, keeping or experimentation. This unit does not cover animal handling techniques for specific species of animals. All work would be performed under the guidance and supervision of a scientific officer.

Status: Elective "B"
Prerequisites: Nil

Elements
- Confirm requirements for field monitoring activities
- Prepare for field monitoring activities
- Perform field activities
- Close down field monitoring activities

MSL974010 - Perform mechanical tests

This unit This unit of competency covers the ability to interpret mechanical test requirements, prepare samples, conduct pre-use and calibration checks on equipment and perform routine mechanical tests. These tests will involve several measurement steps. The unit includes data processing and interpretation of results and tracking of obvious test malfunctions where the procedure is standardised. However, personnel are not required to analyse data, optimise tests/procedures for specific samples or troubleshoot equipment problems where the solution is not apparent.

Status: Elective "B"
Prerequisites: Nil

Elements
- Interpret and schedule test requirements
- Receive samples and prepare test pieces
- Check equipment before use
- Test samples to determine mechanical properties
- Process and interpret data
- Maintain a safe work environment
- Maintain laboratory records

MSL974012 - Perform tests to determine the properties of construction materials

This unit This unit of competency covers the ability to conduct multi-stage tests to determine the properties of raw and/or manufactured construction materials. These test results are typically used by clients to prove raw material deposits, tender for supply of construction materials, classify soils, determine the suitability of construction materials for specialised uses and to inform the design of civil engineering works. The unit includes data processing and interpretation of results to identify obvious errors or unexpected results and take corrective action. However, personnel are not required to analyse data, optimise test methods or workplace procedures for specific samples or troubleshoot equipment problems where the solution is not apparent.

Status: Elective "B"
Prerequisites: MSL973010 Conduct laboratory-based acceptance tests for construction materials

Elements
- Interpret and schedule test requirements
- Prepare samples or test pieces
- Check test equipment before use
- Conduct test to determine sample properties
- Process and interpret data
- Maintain laboratory records
- Maintain a safe work environment
MSL974013 - Monitor performance of structures

This unit: This unit of competency covers the ability to monitor civil engineering structures (such as roads, dams, embankments, open cut faces, bridges, tunnels, towers and other concrete/steel erections) to measure their performance, confirm design parameters or measure the effects of improvements or rehabilitation. The unit involves confirming the requirements of the monitoring activities, liaising with site personnel, performing monitoring activities, setting up monitoring equipment, collecting reliable data and reporting results. Personnel are also expected to interpret results in the field, recognise/rectify obvious errors or unexpected results and troubleshoot common problems.

Status: Elective "B"
Prerequisites: MSL973009 Conduct field-based acceptance tests for construction materials

Elements
- Confirm requirements for monitoring activities
- Prepare for monitoring activities
- Collect and verify monitoring data
- Finalise monitoring activities
- Maintain a safe work environment

MSL974014 - Classify soils

This unit: This unit of competency covers the ability to classify soils for geotechnical and civil construction purposes using the symbols and descriptors specified in the Australian Standard for Geotechnical Site Investigations (AS 1726-1993 Geotechnical site investigations, or its replacement). The unit involves confirming the client’s requirements, physical examination of site samples, interpreting field observations and test results and assignment of an appropriate soil classification. Personnel are expected to recognise and rectify obvious errors or unexpected results, perform confirmatory tests if required and seek advice to deal with situations beyond their own technical competence.

Status: Elective "B"
Prerequisites: MSL973009 Conduct field-based acceptance tests for construction materials & MSL973010 Conduct laboratory-based acceptance tests for construction materials

Elements
- Prepare to classify soil samples
- Examine properties of soil samples
- Analyse available test results
- Record soil classification
- Maintain a safe work environment

MSL975001 - Perform microbiological tests

This unit: This unit of competency covers the ability to contribute to the culture, isolation and identification of microorganisms, such as bacteria, fungi, viruses, protozoans, algae and parasites, in order to investigate the physiology and pathology of plants and animals, monitor the natural environment, and to assist in the production of foods, pharmaceutical goods and other manufactured materials.

Status: Elective "B"
Prerequisites: MSL973004 Perform aseptic techniques & MSL973007 Perform microscopic examination

Elements
- Receive samples and process associated request forms
- Prepare for safe microbiological work and aseptic applications
- Process samples for direct examination
- Prepare pure cultures for microbiological work and aseptic applications
- Perform procedures that can assist in the identification of microorganisms
- Estimate the number and/or size of micro-organisms in samples
- Maintain records of laboratory work
**MSL975002 - Perform haematological tests**

This unit This unit of competency covers the ability to determine levels, function, activity and interactions of cellular and plasma components of blood using tests and procedures identified with the discipline of laboratory haematology.

**Status:** Elective "B"

**Prerequisites:** MSL973007 Perform microscopic examination

**Elements**
- Process samples and associated request details
- Perform tests
- Maintain a safe environment
- Maintain laboratory records

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**MSL975003 - Perform histological tests**

This unit This unit of competency covers the ability to perform tests and procedures associated with processing and staining tissues for examination of tissue structure and abnormalities by pathologists and scientists to assist with disease diagnosis. The unit covers tests and procedures that are associated with anatomical pathology and may involve the use of automated processors and staining machines.

**Status:** Elective "B"

**Prerequisites:** MSL973007 Perform microscopic examination

**Elements**
- Process specimens and associated request forms
- Prepare specimens for cut-up
- Process tissue
- Embed tissue
- Cut tissue sections
- Stain tissue sections
- Maintain a safe environment
- Maintain laboratory records

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**MSL975004 - Perform chemical pathology tests**

This unit This unit of competency covers the ability to perform tests and procedures associated with the detection and monitoring of tissue and bodily fluid responses to normal physiological processes and disease through the identification and quantifying of chemical components. It covers tests and procedures that are usually associated with the discipline of clinical biochemistry.

**Status:** Elective "B"

**Prerequisites:** MSL974003 Perform chemical tests and procedures OR MSL974006 Perform biological procedures

**Elements**
- Process samples and associated request forms
- Perform tests
- Maintain a safe work area and environment
- Maintain laboratory records

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MSL975005 - Conduct sensory analysis
This unit This unit of competency covers the ability to set up and coordinate sensory analysis and assess the results obtained from a routine sensory analysis.

Status: Elective "B"
Prerequisites: Nil

Elements
- Select panellists/individuals for sensory analysis
- Prepare panellists for sensory analysis
- Prepare samples for sensory analysis
- Conduct routine sensory analysis
- Evaluate and report findings
- Maintain a safe work environment

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MSL975006 - Perform immunohaematological tests
This unit This unit of competency covers the ability of technical personnel to perform routine tests and procedures that are part of the requirements of pre- and post-blood transfusion practice. The unit also covers tests and procedures that are indicated in laboratory investigations in obstetric and perinatal medicine, in suspected haemolysis and haemolytic episodes, and in other clinical circumstances.

Status: Elective "B"
Prerequisites: MSL974006 Perform biological procedures

Elements
- Process samples and associated request forms
- Perform tests
- Maintain a safe environment
- Maintain laboratory records
- Issue blood and blood products

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MSL975007 - Supervise sampling, inspections and testing at construction sites
This unit This unit of competency covers the ability to supervise and direct the placement of materials, such as soil, concrete and asphalt, at a construction site. The unit involves confirming the requirements of the inspection and testing plans, liaising with site personnel and organising sampling and testing activities, collecting reliable data and reporting results. Personnel are also expected to interpret results in the field, provide reliable advice to construction personnel, recognise and rectify obvious errors or unexpected results and troubleshoot common problems.

Status: Elective "B"
Prerequisites: MSL954001 Obtain representative samples in accordance with sampling plan & MSL974002 Conduct geotechnical site investigations

Elements
- Prepare for on-site operations
- Establish on-site operations
- Supervise materials placement
- Analyse project data and report to client
- Maintain workplace records
- Promote a safe work environment

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MSL975008 - Apply electrophoretic techniques

This unit This unit of competency covers the ability to analyse samples using electrophoretic techniques. The unit also includes establishing client needs for routine and non-routine samples, optimising workplace procedures and instruments for specific samples, obtaining valid and reliable data and reporting test results. Personnel are required to recognise atypical test data/results and troubleshoot common analytical procedure and equipment problems.

Status: Elective "B"
Prerequisites: MSL974003 Perform chemical tests and procedures OR MSL974006 Perform biological procedures

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

MSL975009 - Apply routine chromatographic techniques

This unit This unit of competency covers the ability to analyse samples using routine chromatographic techniques. The unit also includes establishing client needs for routine and non-routine samples, optimising workplace procedures and instruments for specific samples, obtaining valid and reliable data and reporting test results. Personnel are required to recognise atypical test data/results and troubleshoot common analytical procedure and equipment problems.

Status: Elective "B"
Prerequisites: MSL974003 Perform chemical tests and procedures OR MSL974006 Perform biological procedures

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

MSL975010 - Perform fire assay techniques

This unit This unit of competency covers the ability to safely extract a range of precious metals from their host matrices in readiness for analysis. The unit also covers the ability to select and/or modify laboratory methods to suit particular ores and to ensure total recovery.

Status: Elective "B"
Prerequisites: MSL954002 Prepare mineral samples for analysis OR MSL973011 Perform fire pouring techniques

Elements
- Classify ore samples and select fluxing method
- Prepare for precious metal recovery
- Recover precious metals from ore sample
- Troubleshoot and correct failed recovery
- Perform daily maintenance of assay equipment

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MSL975011 - Design and supervise complex environmental field surveys

This unit This unit of competency covers the ability to design and supervise complex field surveys for a wide range of environmental systems. This unit covers confirming survey requirements, designing and organising field surveys to achieve their purpose, and supervising the field survey according to a defined plan.

Status: Elective "B"

Prerequisites: MSL974007 Undertake environmental field-based monitoring

Elements
- Confirm survey requirements with senior staff
- Design field survey activities
- Identify resources and supervise pre-survey checks
- Supervise field survey activities
- Supervise close-down of field activities

MSL975012 - Provide input to production trials

This unit This unit of competency covers the ability to work closely with production personnel to conduct a routine trial to adjust formulations or develop products and processes following preliminary laboratory work. The unit covers monitoring critical process parameters, collecting and testing of samples, and analysing results. The unit does not cover the planning and management of the trial, development of product briefs or the troubleshooting of equipment and production processes.

Status: Elective "B"

Prerequisites: MSL974003 Perform chemical tests and procedures OR MSL974004 Perform food tests OR MSL974005 Perform physical tests OR MSL974010 Perform mechanical tests

Elements
- Prepare for the trial
- Participate in the trial
- Assess and report trial outcomes
- Maintain a safe work environment

MSL975013 - Perform tissue and cell culture techniques

This unit This unit of competency covers the ability to prepare, maintain and preserve cells and cell lines for a variety of applications, such as large scale culture, production of monoclonal antibodies, production of viral vaccines and amniocentesis studies. Personnel are required to optimise equipment set-up, media and growth techniques. They are required to detect and investigate contamination and take preventative and/or corrective actions under supervision.

Status: Elective "B"

Prerequisites: MSL973004 Perform aseptic techniques & MSL973007 Perform microscopic examination

Elements
- Interpret and schedule production requirements
- Work safely according to the legal and regulatory framework
- Assemble and maintain tissue culture equipment
- Prepare and test cell and tissue culture media
- Obtain, monitor and maintain tissue and cell lines
- Preserve cells and tissues
- Maintain records

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MSL975014 - Perform molecular biology tests and procedures
This unit This unit of competency covers the ability to isolate, purify, verify and manipulate biomolecules and their products. This work requires close attention to working with small volumes, multiple-step procedures and prevention of contamination. Personnel are required to apply a wide range of molecular biology tests and procedures.

Status: Elective "B"
Prerequisites: MSL973004 Perform aseptic techniques & MSL973007 Perform microscopic examination

Elements
- Interpret and schedule test requirements
- Receive and handle samples
- Prepare equipment and reagents
- Extract, verify and manipulate biomolecules
- Process data
- Maintain a safe work environment
- Report and communicate results

MSL975015 - Prepare animal and plant material for display
This unit This unit of competency covers the ability to perform a range of techniques to collect and preserve animals and plant material for both public and scientific research display. Personnel are required to assist clients to clarify their display requirements, select the most appropriate collection and preservation procedures and display configuration and then assemble and conserve the display items. The unit does not cover techniques and procedures for handling vertebrates that are subject to national and state/territory animal care and ethics regulations.

Status: Elective "B"
Prerequisites: Nil

Elements
- Confirm the requirements of the display and plan the work
- Work safely according to the legal and regulatory framework
- Collect plants and animal material
- Preserve plant and animal material
- Display plant and animal material

MSL975016 - Perform complex tests to measure engineering properties of materials
This unit This unit of competency covers the ability to prepare test specimens and perform multi-stage mechanical tests on them. The unit requires personnel to create test conditions that suit the materials intended use, optimise measurement procedures and recognise critical measurement points during the tests. The unit also covers data analysis and troubleshooting procedures/equipment that have led to atypical data or results.

Status: Elective "B"
Prerequisites: MSL973010 Conduct laboratory-based acceptance tests for construction materials & MSL974012 Perform tests to determine the properties of construction materials

Elements
- Interpret and schedule test requirements
- Prepare and measure test specimens
- Check equipment before use
- Test samples
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records
MSL975017 - Perform laboratory-based ecological techniques

This unit This unit of competency covers the ability to participate in laboratory investigations involving animals, plants and related environmental parameters. The animals or plants might be single specimens, parts of specimens or be in culture or under propagation. The investigations might also be part of experimental models that examine interactions of animals and/or plants and their environments. Investigations would generally relate to taxonomy, physiology and pathology, and would be oriented to scientific research, food production and manufacture, and to investigation of biological environments and ecosystems.

Status: Elective "B"
Prerequisites: MSL974006 Perform biological procedures

Elements
- Process specimens and documentation
- Participate in the identification and classification of species
- Maintain viability and integrity of specimens during experimentation
- Integrate laboratory and field data
- Maintain a safe work environment

MSL975018 - Perform complex tests to measure chemical properties of materials

This unit This unit of competency covers the ability to isolate analytes from complex matrices and perform multi-staged and multi-component analyses on them. The unit requires personnel to apply detailed knowledge of analytical chemistry to plan the analysis, prepare and measure samples, analyse and report results and make approved adjustments to procedures as required. Personnel are required to recognise atypical test data and results and troubleshoot common analytical procedure and equipment problems.

Status: Elective "B"
Prerequisites: MSL975009 Perform routine chromatographic techniques & MSL974003 Perform chemical tests OR MSL974006 Perform biological procedures OR MSL975020 Apply routine spectrometric techniques & MSL974003 Perform chemical tests OR MSL974006 Perform biological procedure

Elements
- Develop an analysis plan with supervisor
- Reduce the complexity of the sample
- Apply quantification method
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records
**MSL975019 - Apply complex instrumental techniques**

This unit This unit of competency covers the ability to analyse samples using specialised analytical instruments that require highly developed technical skills to operate effectively. Competency includes the ability to establish client needs for routine and non-routine samples, optimising workplace procedures and instruments for specific samples, obtaining valid and reliable data and reporting test results. Personnel are required to recognise atypical test data/results and troubleshoot common analytical procedure and equipment problems.

**Status:** Elective "B"

**Prerequisites:** MSL975009 Perform routine chromatographic techniques & MSL974003 Perform chemical tests OR MSL974006 Perform biological procedures OR MSL975020 Apply routine spectrometric techniques & MSL974003 Perform chemical tests OR MSL974006 Perform biological procedure

**Elements**
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument and sub-systems
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

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**MSL975020 - Apply routine spectrometric techniques**

This unit This unit of competency covers the ability to analyse samples using routine spectrometric techniques. The unit also includes establishing client needs for routine and non-routine samples, optimising workplace procedures and instruments for specific samples, obtaining valid and reliable data and reporting test results. Personnel are required to recognise atypical test data/results and troubleshoot common analytical procedure and equipment problems.

**Status:** Elective "B"

**Prerequisites:** MSL974003 Perform chemical tests OR MSL974006 Perform biological procedures

**Elements**
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

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MSL975021 - Apply routine electrometric techniques

This unit This unit of competency covers the ability to analyse samples using routine electrometric techniques. The unit also includes establishing client needs for routine and non-routine samples, optimising workplace procedures and instruments for specific samples, obtaining valid and reliable data and reporting test results. Personnel are required to recognise atypical test data/results and troubleshoot common analytical procedure and equipment problems.

Status: Elective "B"
Prerequisites: MSL974003 Perform chemical tests OR MSL974006 Perform biological procedures

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

MSL975022 - Perform food analyses

This unit This unit of competency covers the ability to analyse the nutrient and ingredient composition of foods and the identification and quantification of both chemical and biological contaminants within raw and processed foods. These tests may involve complex sample preparation followed by multi-staged and/or multi-instrumental analysis, immunoassay and computer-based nutrient analysis.

Status: Elective "B"
Prerequisites: MSL974004 Perform food tests

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Set up and optimise instrument
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records

MSL975023 - Supervise geotechnical site investigations

This unit This unit of competency covers the ability to supervise and direct geotechnical site investigations based on observation and testing. The unit involves confirming the scope of the investigation, liaising with site personnel and coordinating geotechnical sampling and testing activities, collecting reliable data and reporting results. Personnel are also expected to interpret results in the field, provide reliable advice to clients, recognise and rectify obvious errors or unexpected results and troubleshoot common problems.

Status: Elective "B"
Prerequisites: MSL974002 Conduct geotechnical site investigations

Elements
- Plan geotechnical investigation
- Establish on-site operations
- Coordinate geotechnical sampling and testing
- Analyse project data and report to client
- Maintain workplace records
- Promote a safe work environment

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MSL975024 - Locate, record and collect forensic samples

This unit This unit of competency covers the ability to locate, record and collect evidence or samples that will be used for forensic examination or testing. Competency includes the ability to locate, collect, package, transport and store forensic samples.

Status: Elective "B"
Prerequisites: Nil

Elements
- Prepare for evidence/sample collection
- Record locations and details of evidence/samples
- Collect evidence/samples
- Package evidence/samples
- Maintain a safe work environment

MSL975025 - Perform complex laboratory testing of forensic samples

This unit This unit of competency covers the ability to perform complex laboratory testing of samples that may be used as forensic evidence. Competency includes the ability to establish client needs for routine and non-routine forensic samples, select suitable techniques and methods and modify them if required, obtain valid and reliable data, and report test results. Personnel are required to recognise atypical test data/results, troubleshoot common analytical procedure and equipment problems and ensure all testing and reporting meets judicial requirements.

Status: Elective "B"
Prerequisites: Nil

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records and report results

MSL975026 - Perform physical examination of forensic samples

This unit This unit of competency covers the ability to perform physical examination and testing of samples that may be used as forensic evidence. Competency includes the ability to establish client needs for routine and non-routine forensic samples, select suitable techniques and methods and modify them if required, obtain valid and reliable data, and report test results. Personnel are required to recognise atypical test data/results, troubleshoot common analytical procedure and equipment problems and ensure all testing and reporting meets judicial requirements.

Status: Elective "B"
Prerequisites: Nil

Elements
- Establish client needs and schedule analysis
- Prepare samples and standards
- Perform analysis
- Process and analyse data
- Maintain a safe work environment
- Maintain laboratory records and report results
MSL975027 - Classify building sites

This unit This unit of competency covers the ability to classify building sites, including residential, light industrial, commercial and institutional structures for the purpose of providing guidance for the design of footing systems.

Status: Elective "B"

Prerequisites: MSL973009 Conduct field-based acceptance tests for construction materials & MSL973010 Conduct laboratory-based acceptance tests for construction materials & MSL974014 Classify soils

Elements

- Prepare to classify site
- Analyse site information and test results
- Report site classification
- Finalise site classification

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