Modification history

Release	Comments
Release 2	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 4.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

AHCARB603	Interpret diagnostic test results
Application	This unit of competency describes the skills and knowledge required to interpret diagnostic test results and evaluate and critique the testing methods and results. It requires knowledge and application of tree anatomy, physiology, pathology, tree dynamics and edaphic environment with substantial depth of understanding of diagnostics methods and analysis. The unit applies to individuals with broad theoretical and technical knowledge of a specific area, or a broad field, of work and learning. They have a broad range of cognitive, technical and communication skills and demonstrate autonomy and judgement for defined area of responsibility, undertaking complex work with broad parameters to provide specialist advice and functions. No occupational licensing, legislative or certification requirements are known to apply to this unit at the time of publication.
Prerequisite Unit	Nil
Unit Sector	Arboriculture (ARB)

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Compile diagnostic tool knowledge requirements	1.1 Compile a portfolio of sample reports of diagnostic test results 1.2 Compile peer reviewed papers on the use of each diagnostic tool 1.3 Review the diagnostic tool specifications and user manuals 1.4 Research output ranges for each diagnostic tool 1.5 Identify key thresholds and benchmarks for diagnostic test outputs 1.6 Determine suitability of tool selection for purpose of test
2. Analyse the data and testing methods	2.1 Identify and evaluate testing methods used 2.2 Assess relevance, benefits and limitations of methodology 2.3 Determine assumptions used in formulating testing method 2.4 Determine veracity of equipment, software and systems used for test 2.5 Access raw data and testing evidence for test results 2.6 Verify data relevance and accuracy against standard industry test procedures 2.7 Review report and identify discrepancies against industry testing procedures and testing standards 2.8 Record discrepancies according to workplace procedures
3. Evaluate and critique test results	3.1 Assess the suitability of the testing process as fit for purpose 3.2 Analyse the test results against benchmarks 3.3 Reconcile analysis with original interpretation and account for anomalies 3.4 Determine the validity of outcomes of original report 3.5 Develop substantiated positions to inform critical analysis of test results 3.6 Determine further testing required to verify results 3.7 Document feedback on original results

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
4. Prepare critique document the report	4.1 Compile analysis of test method and results 4.2 Review the completeness and accuracy of the analysis 4.3 Record analysis outcomes and rationale 4.4 Document the analytical processes 4.5 Provide alternative analysis and conclusion 4.6 Document critique in a report 4.7 Present report according to agreed format and timelines

Foundation Skills (NB - To be completed following confirmation of PC's)

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
	•
	•
	•

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCARB603 Interpret diagnostic test results	AHCARB603 Interpret diagnostic test results	Changes to Performance Criteria for clarity Updated Performance Evidence and Knowledge Evidence	Equivalent unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72

TITLE	**Assessment requirements for AHCARB603 Interpret diagnostic test results**

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has analysed and critiqued a minimum of five different diagnostic test results.

There must also be evidence that the individual has:
- compiled a portfolio of sample reports of diagnostic test results including the following types of tests:
    - dynamic and static loading
    - drill resistance measurement device
    - sap flow measurements
    - electronic impedance
    - chlorophyll fluorescence
    - increment core
    - sonic tomography
    - radar imaging system
    - bulk density
    - soil and pH tests
- compiled peer reviewed papers on the use of each diagnostic tool
- reviewed diagnostic tool specifications and user manuals and researched output ranges for each diagnostic tool
- identified key thresholds and benchmarks
- determined suitability of tool selection for purpose of test
- identified and evaluated testing methods
- assessed relevance, benefits and limitations and determined assumptions of methodology
- determined veracity of the equipment, software and systems
- accessed available raw data and testing evidence and verified data relevance and accuracy
- reviewed references cited in the report and identified
- evaluated test results and completed the following:
    - recorded discrepancies against standards
    - assessed the suitability of diagnostic tool for purpose
    - highlighted unsupported statements and factual errors
    - detailed significant omissions, errors and ambiguities
    - detailed inconsistencies and errors of logic
    - identified variances to specifications
- assessed the suitability of the testing process as fit for purpose
- analysed test results, compared test outcomes with original interpretation and considered and accounted for anomalies
- determined validity of outcomes of original report
- developed substantiated positions for critical analysis
- determined further testing required to verify results
- documented feedback on original results
- compiled the analysis and reviewed completeness and accuracy of analysis
- recorded analysis outcomes and rationale and documented the analytical processes
- provided alternate analysis and conclusion and documented critique in a report
- presented report according to agreed format and within agreed timelines.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- diagnostic tests and tools used in arboriculture and their purpose including:
    - dynamic and static loading

Knowledge Evidence

- drill resistance measurement device
- sap flow measurements
- electronic impedance
- chlorophyll fluorescence
- increment core
- sonic tomography
- radar imaging system
- bulk density
- soil and pH tests
- specifications of arboricultural diagnostic tools including
  - arboriculture terminology and language used in tree diagnostics
  - data output, interpretation and output ranges, key thresholds and benchmarks
  - diagnostic tool selection and testing methods
- developing an evidence based critique of testing procedures and results
  - reviewing and verifying cited references and data reports
  - data accuracy and relevance
  - testing diagnostic tools and methods against standards and quality assurance
- identifying non-conformances in documentation of results and reports including:
  - unsupported statements and factual errors
  - significant omissions, errors and ambiguities
  - variances to specifications and standard procedures
  - incorrect use of arboricultural terminology
  - verification and falsification of results
- selecting and determining the suitability of diagnostics tools and testing procedures and deciding best fit for purpose
- analysing test results and use of industry benchmarks and standards.

Assessment Conditions

Assessment of skills must take place under the following conditions:
- physical conditions:
  - access to an arboriculture worksite or environment that accurately represents workplace conditions
- resources, equipment and materials:
  - computer with word processing software and statistical analysis software
  - internet connection
- specifications:
  - access to test equipment manuals, standard procedures and quality standards
  - access to sample reports for the diagnostic test methods listed in the performance criteria.

Assessors must satisfy current standards for RTOs in the assessment of arboriculture units of competency.

Assessment must be conducted only by persons who have:
- arboriculture vocational competencies at least to the level being assessed
- current arboriculture industry skills directly relevant to the unit of competency being assessed.

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72