

About the Environmental Analysis Laboratory

EAL – Southern Cross University’s Environmental Analysis Laboratory – is an Australian leader in providing high quality analytical services to environmental, agricultural and industrial managers through universities, government, corporate and private partnerships. EAL draws on 23 years of experience and innovation.

State-of-the-art equipment and modern facilities:

Enables EAL to offer chemical and physical analysis of:

- soil and sediment
- compost, mulch and potting mix
- plant tissue
- water, waste water and effluent
- livestock and human hair
- acid sulfate soil and rock
- concrete, soil and rock engineering properties.

At EAL we specialise in:

- agricultural soil and leaf testing
- Australian Standard compost, mulch, topsoil and potting mix testing
- environmental contamination analysis
- trace and ultra-trace metal analysis in soil, water and seawater, plants, compost biota and hair
- acid sulfate soil and rock method development.

Rigorous monitoring and sampling services are offered in:

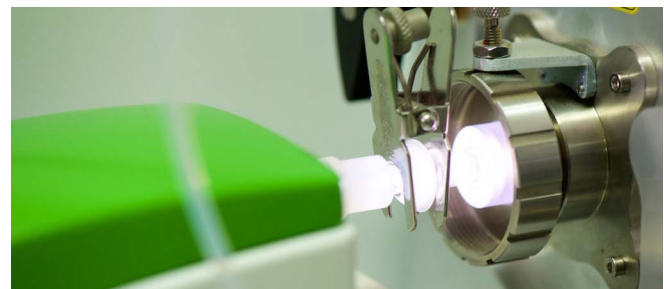
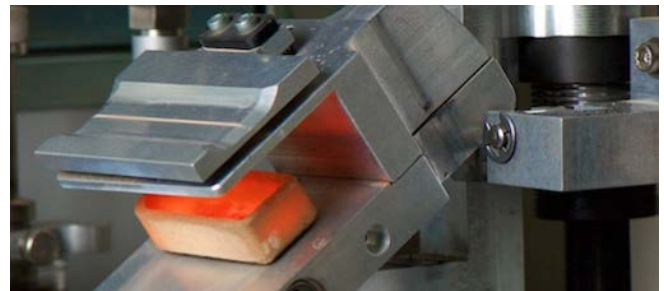
- ground and surface waters
- environmental and contamination assessment
- leachate monitoring
- environmental drilling programs.

Strong partnerships with Southern Cross University, and The University’s Special Research Centres, and EAL’s flexibility and capacity to diversify into new and innovative testing parameters, attracts enquiries from a wide range of research and commercial entities.

EAL management and staff have a **strong commitment to quality assurance**, providing world-standard work in the shortest possible time frame, at commercially competitive prices.

EAL holds **NATA accreditation** for a wide range of tests. All analysis is backed by rigorous quality control procedures with testing carried out under ASPAC accreditation. Full confidentiality and security are provided for all analytical work.

Agricultural soil, plant, fertiliser and basic compost batches are analysed with **rapid reporting** within two to five working days.



Contact EAL:

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Testing information

Agricultural soil testing

EAL developed an Australian version of the Albrecht/Reams soil test (RA-PACK-001) in 1998, suitable for Australian soil types:

- standard Australian testing for exchangeable cations (Ca, Mg, K, Na, H, Al)
- plant available micronutrients (Fe, Cu, Zn, Mn, B, Si)
- phosphorus tests (Bray 1, Bray 2, Colwell)
- nutrients (nitrate, ammonium, sulfur)
- 'Reams' dilute Morgan extract for determining soluble nutrients (Ca, Mg, K, P) pH, electrical conductivity, basic colour, basic texture, total LECO carbon and total LECO nitrogen.

An extended suite of tests (RA-PACK-002) provides additional information on nutrients adsorbed to soil particles and organic matter. This information, not available through traditional testing, includes:

- RA-PACK-001 tests
- 'pseudo-totals' extracted with concentrated acids (Ca, Mg, K, Na, S, Fe, Cu, Zn, Mn, B, Al, Si, P, Co, Mo and Se).
- A large range of additional soil tests are described in the 'Full Analytical Services Price List' on the EAL website: <https://www.scu.edu.au/media/scueduau/commercial-services/eal/2018-Full-Price-List.pdf>

Popular additional tests include:

- labile carbon (SS-SING-018)
- Phosphorous Buffer Index (SS-SING-037)
- chloride (SS-SING-038)
- pH – CaCl₂ (SS-SING-066)
- phosphorous – Olsen (SS-SING-034).

Soil analysis reports are provided with desirable levels, based on soil texture, to assist soil management.

EAL can also arrange for an independent soil fertility report to be commissioned at the client's request.

Plant testing

EAL provides comprehensive chemical analysis of plant tissue (leaf, fruit, roots, bark, sap, etc.) Washing is available to remove foliar sprays and liquid fertilisers (SS-PREP-009).

Popular testing suites include:

- total acid extractable macro and micronutrients (P, K, Ca, Mg, K, Na, Fe, Cu, Zn, Mn, B, Si, Co, and Mo) with total C, N and S testing (PA-PACK-001)
- nitrate and ammonium levels (PA-PACK-005).

Compost, mulch, potting mix, landscape and garden soil testing

EAL analyses growing media by Australian Standards methods to meet regulatory requirements:

- AS4454 compost soil conditioners and mulch testing (CA-PACK-003)
- AS3743 potting mix – regular and premium testing (CA-PACK-006 and CA-PACK-007)
- AS4419 landscape and garden soil testing (SS-PACK-057 and SS-PACK-058).

Each standard includes a combination of physical, chemical and contaminant tests:

- physical – moisture, pH, EC, wettability, large particles, particle size, bulk density, toxicity, permeability, dispersibility, air-filled porosity, water holding capacity
- chemical – total C/N, dissolved nutrients (NO₃, NH₃, PO₄), NDI, total and available nutrients (Na, K, Ca, Mg, P, S, Fe, Mn, Zn, Cu, B)
- contaminants – pathogens (faecal coliforms, salmonella), low level pesticides (OC, PCB), heavy metals (Hg, Pb, Ni, Cd, C, Se, As, Zn, Cu).

Water and other liquids testing:

EAL provides a range of testing options for a wide variety of liquids, including environmental waters, potable waters, effluents and trade wastes. These options include inorganic and organic testing suites as well as microbiological testing.

Testing requirements can be accommodated for a range of industries, from individuals through to local councils, government agencies, research facilities (including other Universities), environmental consultants, and large scale construction projects.

A recent expansion of services has allowed EAL to extend capabilities to include the analysis of speciated Arsenic and Mercury across a number of matrices. Trace metal analysis in seawater is another specialty, enabled through the purchase of a seaFAST coupled to a NexION ICP-MS.

