

## Appendix 2

## Curriculum Vitae: Dr Robert Alfred Patterson

**Current Position** Director, Lanfax Laboratories, Armidale NSW  
 Professional Soil Scientist and Environmental Engineer  
 Adjunct Associate Professor - University of New England (School of Environmental & Rural Science)

<b>Professional Accreditation</b>	Certified Professional Soil Scientist (Leading Professional Stage 3) (CPSS) Certified Professional Agricultural Consultant (CPAg) Qualified ISO 14000 Environmental Management System auditor
<b>Professional Affiliations</b>	Fellow, Institution of Engineers Australia (FIEAust) - past Chair Northern Group Newcastle Division Member Australian Society of Soil Science Society Inc. (ASSSI) Member Australasian Soil and Plant Analysis Council (ASPAC) Member Australian Institute of Agricultural Science and Technology (MAIAST)
<b>Qualifications:</b>	Bachelor of Natural Resources First Class Honours (UNE) – thesis topic on groundwater, surface water and domestic rainwater supplies for rural residential developments. Postgraduate Certificate of Engineering (Deakin) – water and wastewater engineering Doctor of Philosophy (UNE) – thesis – “ <i>On-site treatment and disposal of septic tank effluent</i> ” Postgraduate Diploma of Engineering (Deakin) – environmental engineering Master of Engineering (Deakin) - thesis “ <i>Environmental Indicators of Effective Sewage Effluent Reuse</i> ”
<b>Awards:</b>	2012 Engineers Australia Medal, for contributions towards professional development of engineers 2014 Joint recipient National RW Chapman Medal for contribution to structural engineering
<b>Professional Committees:</b>	2012-2013 Board member, Certified Professional Soil Science Board, Soil Science Australia 2012-2016 Elected member, Newcastle Regional Division committee, Engineers Australia 2015-2016 Elected member, Regional Special Interest Group, Newcastle Rep., Engineers Australia
<b>Professional Experiences and specific expertise</b>	<p>► <b>Director</b> of Lanfax Laboratories, offering analytical procedures and technical expertise in soil, water, plant and wastewater analysis, field monitoring and research development.</p> <p>► <b>Certified Soil Scientist</b> (Leading Professional Stage 3) with specific expertise in landscape analysis, soil description, soil physical and chemical analysis, and soil phosphorus cycling. Recognised by peers as an expert in effects of salinity and sodicity in effluent re-use and water quality assessment. Key achievements: technical advice to local government and private developers in soil science and landscape issues, preparation of technical sheets for Government.</p> <p>► <b>Certified Agricultural Scientist</b> with specific expertise in soil management in agricultural land use planning, salinity and sodicity issues and fertiliser requirements. Key achievements include recognition by agriculturalists of technical competence in measuring soil chemical properties and recommending ameliorating strategies.</p> <p>► <b>Environmental Engineer</b> with practical/technical expertise in water and wastewater, soil resources and environmental issues related to contaminated sites, effluent reuse and biosolids management. Key achievements in recent projects with Armidale Dumaresq Council in relation to effluent and biosolids reuse, providing on-going assessment for Guyra Shire’s conformance to licence conditions and numerous reuse projects for packaged treatment works in coastal developments.</p> <p>► <b>Conference coordinator</b> and principal technical editor of five On-site Wastewater Conferences (1999, 2001, 2003, 2005 and 2007). Technical editor for Engineers Australia for proceeding for three Regional Conventions (2007, 2009, 2011).</p> <p>► <b>Author</b> of numerous professional papers on effects of effluent disposal by land application, use of peat for treatment of domestic effluent, nitrogen and phosphorus in water and effluent, use of soil and water testing for monitoring performance, salinity and sodicity issue, laundry detergents and domestic wastewater issues, including greywater reuse</p> <p>► <b>Training provider</b> to professionals in on-site wastewater management in courses with others (1995 to present) and as Lanfax Labs. Developed and offer courses on “<i>Practical Implementation of AS/NZS 1547: on-site domestic wastewater management</i>” and “<i>Soil and Site Assessment</i>”</p> <p>► <b>Author</b> of refereed manual “<i>Soils and Their Management</i>” for NSW Agriculture and training provider to their farm management students in land management and soil resources (1983-1996).</p> <p>► <b>Lecturer</b>, casual, 1982 to 1999, in disciplines of Soil Science, Rural Science, Natural Resource Management, Ecosystem Management, Surveying, Hydrology, Agricultural Engineering, Geography, Resource Engineering at the University of New England, and lectured to Production and Environmental Monitoring Workshops for Beef CRC and UNE.</p> <p>► <b>Consultant</b>, prepare on-site wastewater management plans to meet environmental constraints and comply with state and national guidelines for traditional septic tank systems, aerated wastewater treatment systems, composting toilets, sand filters, evaporation beds and other treatment systems. Key achievement: recognition by local gov’t and peers of specific expertise in on-site systems</p> <p>► <b>Adviser</b> to Local Gov’t and industry in soil nutrient balances, salinity and sodicity issues. Key achievements: completed project in many jurisdictions, for private and public projects.</p> <p>► <b>Expert Witness</b> in numerous Land &amp; Environment Court cases dealing with effluent disposal and on-site wastewater issues for domestic developments, hydrogeology, river water quality, stormwater and drainage issues and agricultural activities. “Court Appointed Expert” on numerous occasions</p> <p>► <b>Australian Army Reserve</b>: 16 years, Royal Australian Infantry, retired with rank of Major</p> <p>► <b>Papua New Guinea Employment</b>: Patrol Officer; District Officer; Specialist Adviser to Local Government; Regional Staff Development Officer (1972-1978)</p>