

<b>UNIT CODE</b>	<b>NAT10913001</b>
<b>UNIT TITLE</b>	<b>Conduct an indoor air quality assessment</b>
<b>APPLICATION</b>	<p>This unit applies to building biologists or individuals who, as part of their occupation or work role, undertake indoor air quality assessments of the built environment in accordance with clients' needs.</p> <p>It requires knowledge of the sources of indoor air pollutants and their impact on human health, the ability to analyse laboratory results, solve complex air pollutant problems and provide strategies to mitigate exposure. It requires the skills to use technical equipment to quantify indoor air pollutants and compare them to relevant exposure standards.</p> <p>No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.</p>
<b>COMPETENCY FIELD</b>	050999 Environmental Studies, nec
<b>ELEMENTS</b>	<b>PERFORMANCE CRITERIA</b>
Elements describe the essential outcomes of the unit	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan to conduct an indoor air quality assessment	<p>1.1 Define the scope and objectives of the assessment taking into consideration the client's needs and budget</p> <p>1.2 Develop a client questionnaire and checklist to record and conduct the assessment</p> <p>1.3 Research the sources of ambient air pollutants that may impact the built environment</p> <p>1.4 Research the sources of indoor air pollutants that may impact the built environment</p> <p>1.5 Research the adverse health effects arising from exposure to indoor air pollutants</p> <p>1.6 Research exposure standards relating to indoor air pollutants</p>

	<p>1.7 Apply knowledge of workplace health and safety to identify potential risk environments</p> <p>1.8 Identify air sampling hire companies and accredited laboratories to analyse samples</p> <p>1.9 Assign timing, schedule and responsibilities for the assessment</p>
2. Select appropriate assessment tools and equipment	<p>2.1 Identify the tools and equipment required to conduct the assessment</p> <p>2.2 Check calibration certificates are current</p> <p>2.3 Test assessment tools and modify as required</p>
3. Undertake an indoor air quality assessment	<p>3.1 Conduct a visual inspection of the site for sources of air pollutants</p> <p>3.2 Use air sampling equipment to quantify indoor air pollutants</p> <p>3.3 Complete chain of custody documentation</p> <p>3.4 Prepare and send samples to the laboratory</p>
4. Analyse results	<p>4.1 Analyse laboratory results and findings</p> <p>4.2 Compare data results and findings with relevant exposure standards</p>
5. Report the outcomes of the indoor air quality assessment	<p>5.1 Formulate outcomes of the site assessment, data analysis and findings</p> <p>5.2 Provide recommendations to reduce exposure to indoor air pollutants taking into consideration the Hierarchy of Control</p> <p>5.3 Document assessment findings and recommendations in a professional report</p> <p>5.4 Identify key personnel required to assist in implementing the solutions</p>

## FOUNDATION SKILLS

*Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed below, including a brief description of how the skill is applied.*

Skill	Description
Reading skills to:	<p>Evaluate the various sources of written information using authoritative sources</p> <p>Follow instructions and technical drawings presented in equipment and instruction manuals.</p> <p>Read text which includes specialised vocabulary to gather information and create questions to be answered.</p> <p>Understand text which includes symbols and embedded technical information in relation to air quality.</p>
Writing skills to:	<p>Use a variety of words and grammatical structures to achieve precise meaning in client questionnaire and checklist.</p> <p>Address the context, purpose and audience when generating text</p>
Oral communication skills to:	<p>Listen in order to take notes about key points from a spoken conversation within the context of discussions with a client.</p> <p>Determine client requirements through open-ended questioning, active listening, paraphrasing and summarising.</p>
Numeracy skills to:	<p>Use mathematical formulas to convert laboratory results to relevant exposure standards.</p> <p>Use and apply knowledge about probability to the context of an air quality assessment.</p>
Learning skills to:	<p>Research relevant background and professional information to determine the appropriateness of the information in the context of an air quality assessment.</p>
Problem-solving skills to:	<p>Identify sources of air pollutants unique to the client's home, provide recommendations to mitigate or control exposure and identify key personnel required to assist.</p>
Planning and organising skills to:	<p>Conceptualise, analyse, and research in order to make recommendations.</p>

	Assess the appropriateness of testing tools and equipment relevant to the context.
Self-management skills to:	Use simple organising methods to manage reference material.
Technology skills to:	Use software capabilities to produce a professional report. Use software and the internet to store and access information, conduct research and project documentation.

UNIT MAPPING INFORMATION	Code and Title Current Version	Code and Title Previous Version	Comments
	NAT10913001 Conduct an indoor air quality assessment	BLDBIO601 Conduct an indoor air quality assessment	Equivalent unit

TITLE	Assessment Requirements for NAT10913001 Conduct an indoor air quality assessment
PERFORMANCE EVIDENCE	<p>The learner must show evidence of the ability to complete tasks outlined in the elements and performance criteria of this unit and manage tasks and contingencies in the context of the role of a Building Biology Consultant. There must be demonstrated evidence that the learner has completed the following tasks:</p> <ul style="list-style-type: none"> <li>Analysed two client's homes</li> <li>Used communication and questioning skills to determine the client's needs</li> <li>Developed a client questionnaire</li> <li>Developed a checklist to conduct the assessment</li> <li>Identified potential risky environments unique to the site</li> <li>Calibrated, tested and demonstrated correct use of air sampling equipment</li> <li>Researched and located the sources of ambient and indoor air pollutants unique to the site</li> </ul>

	<ul style="list-style-type: none"> <li>• Researched the adverse health effects arising from exposure to indoor air pollutants</li> <li>• Analysed laboratory results</li> <li>• Compared assessment results with relevant exposure standards</li> <li>• Used the Hierarchy of Control to prioritise recommendations</li> <li>• Documented recommendations to address indoor air quality issues</li> <li>• Used computer software</li> </ul>
<p><b>KNOWLEDGE EVIDENCE</b></p>	<p>The learner must be able to demonstrate essential knowledge required to effectively do the tasks outlined in elements and performance criteria of this unit, manage the task and contingencies in the context of variable building sites and client needs. This includes knowledge of:</p> <ul style="list-style-type: none"> <li>• Sources of ambient air pollutants including traffic-related air pollutants, agriculture (farming, pesticides) and industry.</li> <li>• Sources of indoor air pollutants, including: <ul style="list-style-type: none"> <li>○ noxious gases generated from unflued gas heaters</li> <li>○ volatile organic compounds arising from paint, building materials, household products, furnishings and pesticides...</li> <li>○ particulates and allergens such as pet dander, pollen, pests and house dust mite.</li> </ul> </li> <li>• Adverse health effects arising from exposure to indoor air pollutants</li> <li>• Exposure standards relating to indoor air quality</li> <li>• Workplace health and safety relating to potential risk environments</li> <li>• Safety Data Sheets</li> <li>• Air sampling equipment hire companies</li> <li>• Air sampling equipment, including: <ul style="list-style-type: none"> <li>○ indoor air quality meter</li> <li>○ photo-ionisation detector</li> <li>○ lead test kits</li> <li>○ PRISM pump and associated tubes.</li> </ul> </li> <li>• Accredited laboratories to analyse the samples</li> </ul>

	<ul style="list-style-type: none"> <li>• How to prepare samples to send to the laboratory</li> <li>• Chain of custody documentation</li> <li>• Analysing information from a range of authoritative sources including government, non-government, industry associations and YouTube videos relevant to the field of study.</li> <li>• Key personnel to assist in implementing the solutions (Heating, Ventilation and Air Conditioning (HVAC) specialist, plumber, ventilation engineer, integrated pest controllers)</li> <li>• Hierarchy of Control as a risk management and problem-solving tool</li> <li>• Building biology recommendations to reduce and/or avoid exposure to indoor air pollutants may involve air filtration systems, specific vacuum cleaners, plants, integrative pest management, healthier brands of household products and alternatives to plastics for food packaging.</li> </ul>
<p><b>ASSESSMENT CONDITIONS</b></p>	<p>Both practical skills and knowledge must be assessed. Skills must be demonstrated in a simulated environment or a real-life working environment, such as a client's home. Learners must have access to all relevant equipment and resources required to undertake air sampling.</p> <p>Assessment methods must include:</p> <ul style="list-style-type: none"> <li>• knowledge questions/quiz</li> <li>• client questionnaire</li> <li>• checklist</li> <li>• written professional report</li> <li>• photographic evidence taken of the home</li> <li>• practical assessment in a simulated environment</li> </ul> <p><b>Assessor Requirements</b></p> <p>Assessors must:</p> <ul style="list-style-type: none"> <li>• have a minimum of two years' experience working as a Building Biologist</li> </ul>