Health and Safety Guideline

HSG 8.4 Workplace Exposure Monitoring

1. Purpose

This document provides guidance on the assessment of exposure to airborne contaminants including sampling, testing and / or monitoring of the exposure to prevent or detect adverse health effects. Airborne contaminants include hazardous substances such as asbestos, coal dust, and crystalline silica, as well as noise hazards.

2. Scope

This Guideline applies to all health, safety and wellbeing activities of staff, students, visitors (including volunteers and contractors), Council members, and other persons interacting with the University of Newcastle (workers); the operations of staff of University aligned Research Centres and controlled entities; and all activities conducted by or on behalf of the University of Newcastle on and outside of the University's campuses.

3. Guidelines

3.1. Assessment of airborne contaminant exposure

Where a hazardous material, chemical, or airborne contaminant is thought to be present as listed in the SafeWork Australia Workplace Exposure Standards for Airborne Contaminants, and may place a worker at risk, **an assessment including sampling, testing and / or monitoring** must be undertaken by a suitably competent person to be arranged through IFS. The assessment must be undertaken by the leader or supervisor of the work area in consultation with the Health, Safety and Wellbeing Team.

Where the assessment identifies the existence of a hazardous substance (outside of a planned and controlled use of that substance) IFS must be contacted to isolate the area from workers through covering, locking doors, or by some other means, until the hazardous substance is removed or treated.

A management plan for the treatment of the hazardous substance must be developed by IFS and may involve removal, improvement such as re-painting, or signage to ensure as far as reasonably practicable, persons are not inadvertently exposed to the hazardous substance.

Where the hazardous substance is identified as an airborne contaminant which cannot be removed from the workplace, engineering controls must be installed, or where such controls already exist, the maintenance schedule is to be reviewed if it is found to be not functioning effectively (e.g. dust or fume extraction; fume hoods; negative or positive ventilation).

The results of a workplace exposure assessment, including results of sampling, testing and / or monitoring, may indicate that a worker must be included in the University's Health Monitoring Program. Further details regarding health monitoring requirements are outlined in Guideline HSG 8.5: Health Monitoring and Immunisation.

3.2. Asbestos

The University will, as far as is reasonably practicable, ensure that persons at the workplace are not exposed to airborne asbestos. Where elimination of exposure is not possible, the University will, as far as reasonably practicable, minimise exposure.

IFS must review the Work Health and Safety Regulations, Workplace Exposure Limits for airborne contaminants, historical and current workplace exposure assessments, and KRA 3.3: Asbestos Management before commencing work where asbestos or asbestos containing materials may be present.

3.3. Manufactured stone and crystalline silica

IFS must ensure that a risk assessment is completed prior to work with manufactured stone and crystalline silica to ensure controls are adequate, effective and suitable for the activity. The Work Health and Safety Regulations and Workplace Exposure Limits for airborne contaminants must also be reviewed as part of the risk assessment, including requirements for respiratory protective equipment for workers.

3.4. Airborne contaminant monitoring

Air monitoring is to be carried out:

- if it is not certain on reasonable grounds whether the exposure standard is being exceeded or not, or
- if it is necessary to determine whether there is a risk to health.

A risk management plan must be developed by IFS which identifies the airborne contaminant hazard, and how these are controlled - whether a risk to health exists or not. The risk management plan must include:

- review of the regulatory requirements and relevant Codes of Practice governing workplace storage and handling of hazardous substances, and exposure to airborne contaminants, fumes, heat, chemicals, noise and vibration;
- review of manufacturer safety data sheets;
- review of historical workplace monitoring results and assessment reports;
- identification of exposures which could result in an identifiable disease occurring in a worker, and assessment of any resulting health monitoring requirements as outlined in Guideline HSG 8.5: Health Monitoring and Immunisation;
- analysis of the results of workplace airborne contaminant monitoring to determine corrective actions and continual improvement initiatives to eliminate or reduce exposure to the hazard; and
- analysis of effectiveness of airborne contaminant risk controls to determine the future periodic cycle for assessing control effectiveness.

Monitoring and assessment must only be carried out by a competent person. The Health, Safety and Wellbeing Team must be contacted prior to any air monitoring being organised. The cost of air monitoring is to be met by the business area that requires the monitoring.

3.5. Gas monitoring

Gas monitoring may also be required if there is potential for a hazardous atmosphere to exist where:

- oxygen levels fall to an unsafe level (e.g., because of an asphyxiant gas leak);
- an oxygen leak could increase the risk of a fire;
- the concentration of a flammable gas (or vapour, mist or fume) exceeds 5% of the LEL for that gas;
- combustible dust is present in a form and quantity that could ignite; or
- a toxic gas could be present at levels exceeding the occupational exposure standard.

In all such cases, gas monitoring equipment must be inspected, calibrated and maintained as per manufacturers' requirements. Where new activities require gas monitoring, this must be indicated in a Safety Review in tick@lab which will notify Health, Safety and Wellbeing Team and IFS of the requirement. See Guideline HSG 3.1: Health and Safety Risk Management for requirements.

3.6. Noise monitoring

Hazardous noise can affect a worker's hearing and can make it difficult to hear sounds necessary for working safely e.g. warning signals and communication. It is essential that all sources of noise hazards are identified, monitored and assessed. A noise assessment must be completed by a competent person in accordance with the procedures in AS/NZS 1269.1 Measurement and assessment of noise emission and exposure.

The assessment can be used to determine the noise levels in an area, or the exposure to a worker over a time period. The assessment report is to be used as a guide to assist in making decisions regarding the control of noise hazards. KRA 1.6: Noise Management contains further details on noise management requirements.

Guideline HSG 8.5: Health Monitoring and Immunisation also outlines requirements for exposure to ototoxic substances that can cause hearing loss or exacerbate the effects of noise on hearing. Hearing loss is more likely to occur if a worker is exposed to both noise and ototoxic substances than if exposure is just to noise or ototoxic substances alone.

3.7. Assessment and Report Record Management

Sampling, testing and monitoring reports and assessments must be kept in accordance with the University's Records and Information Management Policy and Guideline HSG 7.1: Health and Safety Records and Document Control.

4. Definitions

In the context of the Health and Safety Management System Framework:

Airborne Contaminant	A hazardous substance in the form of a fume, mist, gas, vapour or dust and includes micro-organisms.
Hazard	A situation, condition, or event, including a person's behaviour, that exposes a worker to a risk to their health or safety during the course of work in a workplace, that has the potential to cause injury, illness or even death or to damage buildings, plant or equipment.
Hazardous Substance	A substance that: (i) is included on the GHS Hazardous Chemical Information List published by the National Occupational Health and Safety Commission [NOHSC:10005(1994)], which can be found on the Safe Work Australia website; or

	(ii) has been classified as a hazardous substance by the manufacturer or importer in accordance with the Approved Criteria for Classifying Hazard Substances published by the National Occupational Health and Safety Commission [NOHSC:1008(1994)].
Health Monitoring	Involves periodic monitoring or assessment of a worker's health to ensure that the worker is not being harmed by the use of hazardous substances or other workplace exposures.
Leader / Supervisor	Any member of the University who is responsible for supervising staff and/or undergraduate or postgraduate students and/or for leading research projects.
Ototoxic substance	Is a substance that can cause hearing loss or exacerbate the effects of noise on hearing. They consist of industrial chemicals and some medications. Ototoxic substances absorbed into the bloodstream may damage the cochlea in the inner ear and/or the auditory pathways to the brain, leading to hearing loss and tinnitus. Hearing loss is more likely to occur if a worker is exposed to both noise and ototoxic substances than if exposure is just to noise or ototoxic substances alone.
Worker	Includes an employee, conjoint, student on work experience, contractor, sub-contractor, and volunteer. A person is a worker if the person carries out work in any capacity for the University or another person conducting a business or undertaking, including work as: (a) an employee, or (b) a contractor or subcontractor, or (c) an employee of a contractor or subcontractor, or (d) an employee of a labour hire company who has been assigned to work in the person's business or undertaking, or (e) an outworker, or (f) an apprentice or trainee, or (g) a student gaining work experience, or (h) a volunteer, or (i) a person of a prescribed class.
Workplace Exposure Monitoring	Involves undertaking an assessment of the potential exposure to a hazardous substance or other hazard e.g. noise in the workplace, and includes sampling and analysis to determine the level of risk to workers.

5. Responsibilities

A comprehensive list of health, safety and wellbeing responsibilities is provided in the Roles and Responsibilities Guideline.

Specific responsibilities under this Guideline include:

Infrastructure and Facility Services (IFS)

- Undertake or arrange for workplace exposure monitoring or assessment in line with regulatory requirements for activities that involve potential for contamination by a hazardous substance.
- Monitoring prior to work commencing, during the work and after completion to provide data on potential exposures at each stage of the work.

- Determine the effectiveness of airborne contaminant risk controls and the periodic cycle for assessing control effectiveness.

Supervisors and Leaders

- Carry out risk assessments to determine the potential for hazardous contaminants or exposures within their areas of responsibility.
- Ensure that where there is a use of a space, that may introduce a hazardous exposure that requires environmental monitoring that the appropriate monitoring is undertaken.
- Ensure that a program of ongoing monitoring is put in place where required.
- Ensure periodic health monitoring is carried out where a need has been identified, and that workers consent is obtained prior to the health monitoring.
- Ensure that personal results from health monitoring are treated as outlined in HSG 8.5 Health Monitoring.
- Take action to improve exposure controls where indicated by health monitoring or environment monitoring results.

Health, Safety and Wellbeing Team

- Provide advice and support to IFS requests in respect to the type of workplace exposure monitoring and identifying competent providers to undertake any workplace exposure monitoring.
- Obtain all reports and outcomes of workplace exposure monitoring to ensure that records are maintained appropriately.
- Maintain a hazardous chemicals manifest in respect of all University premises and locations.
- Determine and advise on health surveillance assessments and regulatory requirements.
- Assist workers and Supervisors and Leaders with interpretation of surveillance outcomes.
- Provide input to identifying risk controls and improvements in exposure controls.
- Provide education and training where required to assist Leaders, Supervisors and workers to understand their responsibilities with respect to health surveillance.

Workers

- All workers must follow any directions of personnel undertaking workplace exposure monitoring, and any signage relating to monitoring, to avoid disrupting or contaminating results.
- All workers must follow the direction of the University in relation to health surveillance requirements and participate in the health and safety risk management process

including reporting of hazards identified and monitoring for ongoing improvements of risk controls.

- Complete questions relating to health surveillance and personal health monitoring during the recruitment process, or upon a role change when required.

6. References & Related Documents

The following documentation is referenced in, or applicable to this Guideline:

HSG 1.2: Roles and Responsibilities
HSG 3.1: Health and Safety Risk Management
HSG 7.1: Health and Safety Records and Document Control
HSG 8.5: Health Monitoring and Immunisation
KRA 1.6: Noise Management
KRA 1.7: Laboratory Safety
KRA 3.3: Asbestos Management
SafeWork Australia Workplace Exposure Standards for Airborne Contaminants (2022)
University of Newcastle Records and Information Management Policy

7. Amendment History

Version	Date of Issue	Approval	Section(s) Modified	Details of Amendment
1, 2	October 2016	Manager Health and Safety	-	Original version with latest amendment for HSG 4.2 Workplace Exposure Monitoring
3	July 2023	CPCO	All	1. Renumbered from HSG 4.2 to HSG 8.4 Workplace Exposure Monitoring 2. Updated all content in all sections including requirements of SafeWork Australia Workplace Exposure Standards for Airborne Contaminants (2022). Updated to include monitoring exposure of airborne contaminants including hazardous substances such as asbestos, coal dust, and crystalline silica, as well as hazards including noise and risks of potential exposures. 1. Added new/renamed Related Documents 2. Added Amendment History

				3. Amended document control header and footer

8. Appendices

Nil