

## TITLE: Sampling for traces of possible Erionite

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### Introduction:

Erionite is a toxic mineral which is usually located in both volcanic and sedimentary rocks which have formed in response to temperature and pressure in the presence of saline water.

Erionite is classified as a Class I carcinogen which has been linked to malignant mesothelioma by the World Health Organization (WHO). Toxicity levels (especially through inhalation) are greater than that of asbestos. Care and mitigations are necessary for a person's health and well-being.

### Context(s)

Traces of erionite may be found when performing civil engineering works such as: survey, Geotech, cut/fill for roading, tunnelling, quarrying and mining. After extraction, samples can also be taken from spoil when transporting/logistics, disposal and storage. During these times erionite could come into direct contact with persons (i.e. workers and/or public). Especially if erionite becomes airborne.

### Objective (s)

- ◆ To raise awareness of the potential for erionite exposure to occur in some locations where disturbing activities take place,
- ◆ To minimise the exposure of erionite to persons by: eliminating, isolating and/or minimising erionite's harmful effects,
- ◆ To perform 'work' in a manner safe for workers,
- ◆ To minimise the actual and potential harm to adjacent public and the environment.

### Sampling

When in the vicinity of erionite and performing civil engineering sampling processes PCBUs need to mitigate exposure to erionite. It is advisable to select samples of similar colour, type, properties and derivation for analysis and testing.

A Sampling Plan should be designed with 3D GPS coordinates using Topographic Maps. Erionite is usually found in layers so the GPS coordinate and the depth/spread of the deposit is relevant. where erionite is likely to be found in the vicinity of the project.

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The design criteria for Sampling Plan should be based on the risk of locating erionite, its toxicity and the likelihood of exposure – prior to and during ‘works’. A PCBU should also include (for consideration the disposal of deposits (and its possible future recycling/use).

### Risk(s)

All PCBUs should manage the risk of erionite exposure to their: workers, neighbours, contractors and the public.

Respiratory problems and other medical issues may not become evident for several years after exposure.

### PPE

Respiratory Mask (XYZ); Gloves; Safety Glasses and a Visor.

Safety PPE needs to be sanitised (or replaced) after exposure to erionite. See ‘Cleaning’ for the relevant EIG ‘guideline’. Ref EIG\_XYZ)

### Notifications, Monitoring & Records

Project records should contain an information page/pack about the presence, level of certainty, locations, depths and toxicity of erionite at the time of the project. Associated/related supporting information would include personnel involved, equipment used and the Sampling Plan, Extraction Plan and the Disposal Plan.

If the presence of erionite is verified, then notify: the Project Owner, WorkSafe and the persons in the vicinity.

Persons who have regular potential exposure to erionite should be monitored and have a health check every XYZ years.

### Further Information

For further information refer:-

- University of Auckland Erionite website <https://erionite.blogs.auckland.ac.nz/>
- WorkSafe website <https://www.worksafe.govt.nz/>
- MinEx website <https://minex.org.nz/> etc.

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