



OVERVIEW

ERIONITE BULK SAMPLING GUIDELINES FOR NORTH DAKOTA

The North Dakota Department of Health (NDDoH) has developed new guidelines on testing for the presence of erionite in existing and proposed gravel pits near the Killdeer Mountains, Chalky Buttes and Little Badlands areas in western North Dakota.

Erionite is a naturally occurring, fibrous mineral. Like asbestos, erionite may pose health risks to those who breathe in the fibers. Its exposure effects appear to be similar to asbestos, with increased risks of fibrogenic lung disease, lung cancer and mesothelioma.

What areas of North Dakota are affected?

The NDDoH has mapped the land surrounding the Killdeer Mountains, Chalky Buttes and Little Badlands and makes the following recommendations: (1) Exclusion Radius – where no gravel should be mined, and (2) Test Radius – where appropriate testing for the presence of erionite should be conducted prior to new or continued gravel mining. (See map at right.)

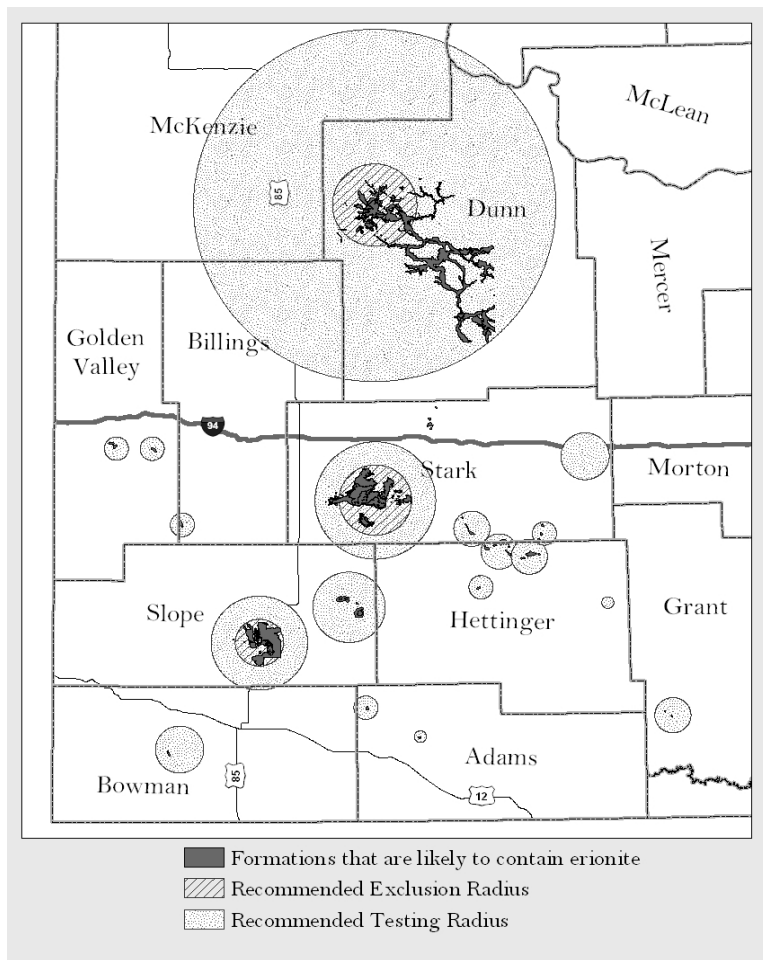
In addition, random sampling of areas outside of the Test Radius area is recommended if there is a concern.

What type of testing is needed?

Bulk sampling is recommended to contractors mining existing gravel pits or exploring new areas for gravel pits in the affected areas.

Where should bulk samples be collected?

Within the Test Radius area, samples should be collected from (1) each acre of land containing any areas of proposed excavation, pit exploration test holes or actual excavations; and (2) every 1,000 tons of piled gravel.



How many bulk samples must be collected?

To obtain accurate testing results, the number of bulk samples that must be collected depends on the type and size of the gravel pit development. Please refer to the NDDoH's *Erionite Bulk Sampling Guidelines for North Dakota* for detailed information pertaining to individual projects.

Who may collect the bulk samples?

Parties collecting samples should be aware of the health hazards associated with erionite and the measures needed to reduce exposure to themselves and to the public. They also should be familiar with Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) regulations and knowledgeable about proper hazard communication, training and use of respirators, use of disposable clothing and decontamination procedures. Contact the NDDoH for a list of contractors who can conduct sampling.

What type of laboratory analysis is conducted?

For bulk sample analysis, a combination of scanning electron microscope (SEM) and energy dispersive x-ray spectroscopy (EDS) or x-ray diffraction (XRD) are needed to identify erionite. Phase contrast microscopy (PCM), polarized light microscopy (PLM) or transmission electron microscopy (TEM) should not be used because they are not as reliable at discriminating among erionite, asbestos, non-erionite and non-mineral fibers.

Which laboratories can perform erionite analysis?

Not all mineral fiber laboratories are able to conduct erionite analysis. A list of laboratories that test for erionite is available on the NDDoH website at www.ndhealth.gov/ehs/erionite.

How will the laboratory results be used?

The laboratory results will enable the NDDoH to better map areas of concern. The presence (rather than concentrations) of any erionite in the samples will automatically cause an area to be classified as an Exclusion Radius area. As more information about erionite becomes available, the Test Radius and Exclusion Radius areas may be adjusted to address any potential public health concerns.

What are the reporting requirements?

Parties conducting erionite sampling should submit a copy of their sampling plan to the NDDoH for review prior to sampling. The NDDoH will return the plan with any revisions within two weeks. Once revisions are incorporated, samples should be collected and submitted to the laboratory selected. The laboratory should provide results within two weeks.

How long does approval take once the laboratory results are final?

Once the party doing the sampling receives final laboratory results, it has two weeks to send a copy of all results, along with the sampling plan, to the NDDoH. The NDDoH will provide written denial or approval of the site to the party submitting the samples within two weeks. Contractors providing gravel for roadways must provide the NDDoH written approval to the North Dakota Department of Transportation two weeks prior to starting to mine or process material.

**For more information about erionite, please contact the North Dakota Department of Health,
Division of Waste Management, at 701.328.5166**