

**Chapter 17**  
**Table of Contents**

| <b><u>Section</u></b>  | <b><u>Page</u></b> |
|--|--------------------|
| 17.1 INTRODUCTION.....   | 17.2               |
| 17.2 ASSESSMENT PROCEDURES .....                               | 17.2               |
| Activity No. 1: Assess NDOT Material Sites.....                | 17.4               |
| Activity No. 2: Assess NDOT Project Sites.....                 | 17.4               |
| Activity No. 3: Evaluate Projects During the NEPA Process..... | 17.6               |
| Activity No. 4: Assess Import Material.....                    | 17.6               |
| Activity No. 5: Maintain the NOA/Erionite Database.....        | 17.7               |
|  |                    |
| <b><u>Figure</u></b>   | <b><u>Page</u></b> |
| Figure 17-A — NOA AND ERIONITE ASSESSMENT.....                 | 17.3               |

## Chapter 17

# NATURALLY OCCURRING ASBESTOS AND ERIONITE

### 17.1 INTRODUCTION

Naturally Occurring Asbestos (NOA) and erionite are fibrous minerals that occur in soils and rocks and have been identified within the geology of Nevada. Both asbestos and erionite have been classified as Group 1 Carcinogens by the International Agency for Research on Cancer. NDOT, therefore, developed a comprehensive approach to NOA and erionite to protect its employees and the public during construction and operations of its facilities. A comprehensive approach minimizes NDOT project delays, additional project cost, and liability. The approach to assessing and managing NOA and erionite includes:

- evaluating projects, NDOT material sites, and rock, soil or other mineral materials that are imported for NDOT projects for their potential to contain NOA or erionite;
- conducting laboratory analysis as needed to complete the evaluation process;
- making recommendations to address NOA or erionite potentials identified during the evaluation process;
- compiling data on NOA and erionite in a GIS database; and
- providing awareness training to address NOA and erionite exposure as needed.

### 17.2 ASSESSMENT PROCEDURES

NDOT material sites, project sites, sites under NEPA review, commercial material pits, and any material imported to a site require assessment to determine the potential for sites and materials to contain NOA and erionite. Figure 17-A summarizes the steps required for assessments.

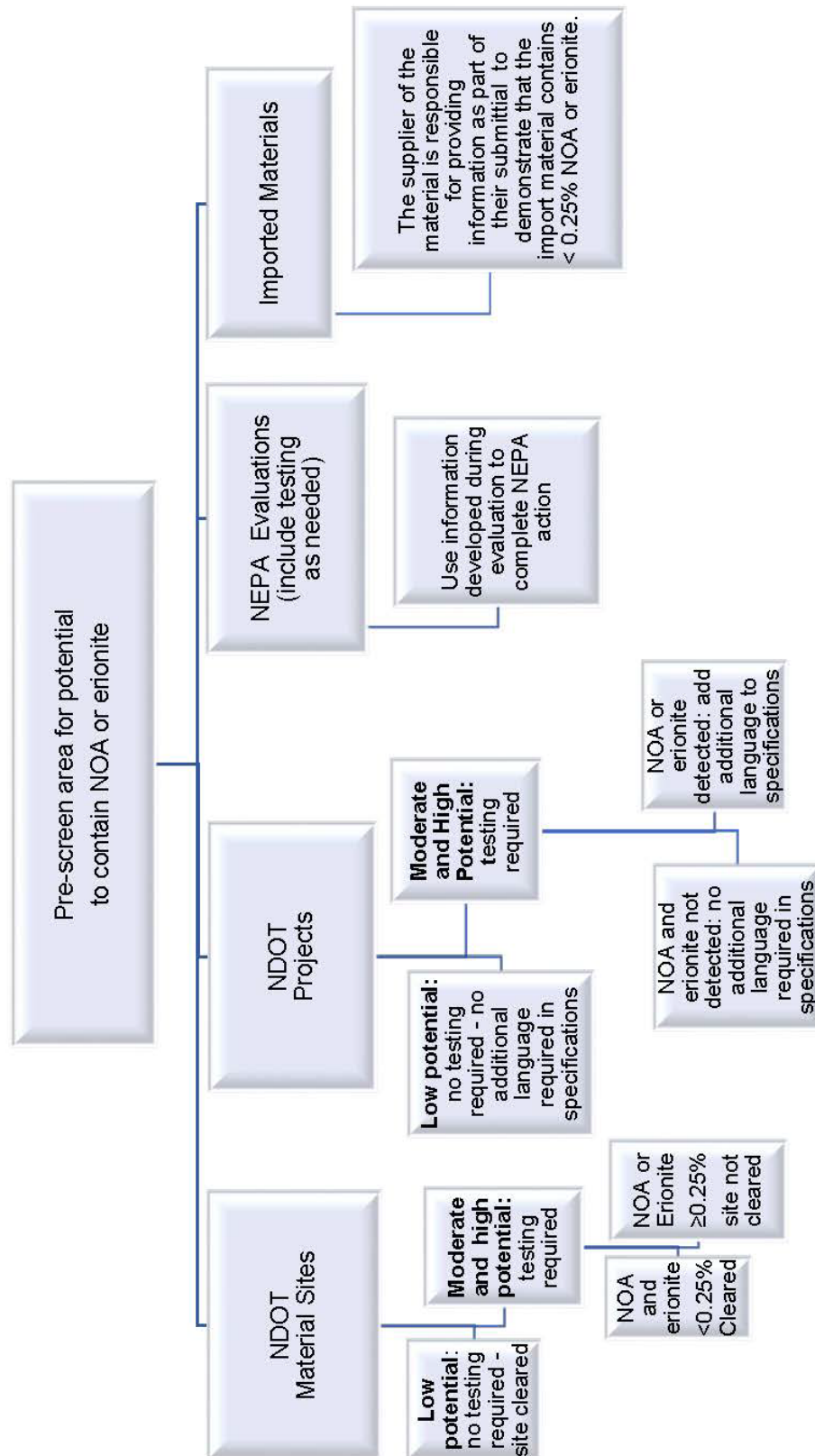


Figure 17-A — NOA AND ERIONITE ASSESSMENT

## ACTIVITY NO. 1:

## Assess NDOT Material Sites

Material site clearance is requested for project and maintenance use as outlined in Chapter 11 of this manual. As part of the clearance process, material sites are evaluated for their potential to contain NOA and erionite. This includes prescreening the sites and reviewing the location, geology, and topography of the site and surrounding area. Sites are placed into the following categories based on the likelihood that a location will contain NOA or erionite.

- Moderate-to-High Potential: Relatively extensive intrusive or tuffaceous sedimentary formations are present at the site or the potential source areas for the alluvial fans where the proposed material sites are located.
- Low-to-Moderate Potential: Limited intrusive rocks at the site or in the potential source areas, and the upland bedrock (source) area for the alluvium is a significant distance away.
- Very-Low-to-Low Potential: Very little or no intrusive, metamorphic or tuffaceous sedimentary formations present at the site or within the source area.

NDOT has decided to further assess locations that fall into the Low-to-Moderate and Moderate-to-High categories by conducting soil and/or rock sampling. As results from the sampled locations are evaluated, this decision may be modified. NOA/Erionite Branch personnel coordinate the characterization activities.

To assure that defensible data are produced, evaluation activities follow the EPA model for evaluating sites. This includes having a Quality Assurance Project Plan (QAPP), Field sampling Plan (FSP), and a site-specific Health and Safety Plan (HSP) for the sites to be sampled. These plans are developed by the NOA/erionite Branch personnel.

If after sampling and testing, NOA and erionite are determined to be <0.25% the site is cleared for use. If NOA or erionite are  $\geq 0.25\%$ , it is recommended that material from the site is not used, and that the site be relinquished to BLM or other land owner/manager.

### Regulations and Guidance

[Guidance for Quality Assurance Project Plans, EPA QA/G-5](#) – EPA, December 2001

[Sampling and Analysis Plan Guidance and Template](#) – EPA, May 2014

[Framework for Investigating Asbestos-Contaminated Superfund Sites, OSWER Directive #9200.0-68](#) – EPA, September 2008

*Master Sampling and Analysis Plan and Quality Assurance Plan for Statewide Naturally Occurring Asbestos (NOA) and Erionite Project* – Tetra Tech, INC., 2017

## ACTIVITY NO. 2:

## Assess NDOT Project Sites

Project sites must be evaluated and characterized for the potential to contain NOA and erionite. This includes prescreening project sites and reviewing site location, geology, and topography,

and surrounding areas. Project sites are placed into the following categories based on the likelihood that a location will contain NOA or erionite.

- Moderate-to-High Potential: Relatively extensive intrusive or tuffaceous sedimentary formations are present in the project area or potential source areas of the project site's soils.
- Low-to-Moderate Potential: Limited intrusive rocks in the project area or the potential source areas, and the upland bedrock (source) area for the soils in the project area is a significant distance away.
- Very-Low-to-Low Potential: Very little or no intrusive, metamorphic or tuffaceous sedimentary formations present in the project area or source area.

NDOT has decided to further characterize locations that fall into the Low-to-Moderate and Moderate-to-High categories by conducting soil and/or rock sampling. As results from the sampled locations are evaluated, this decision may be modified. NOA/Erionite Branch personnel coordinate the characterization activities.

To assure that defensible data are produced, evaluation activities follow the EPA model for evaluating sites. This includes having a QAPP, FSP, and site-specific HSPs for the sites to be sampled. These plans are developed by NOA/Erionite Branch personnel.

If NOA and erionite are identified at any level at the project site, Special Language will be added to the project specifications, requiring the contractor to address NOA/erionite issues during construction. This could involve one or more of the following:

- special health and safety requirements,
- air quality testing during and after the project,
- sampling of soil and rock within the project area,
- installation of Best Management Practices (BMPs) to reduce dust and track out, and
- awareness training for NDOT and contract personnel.

### Regulations and Guidance

[Guidance for Quality Assurance Project Plans, EPA QA/G-5](#) – EPA, December 2001

[Sampling and Analysis Plan Guidance and Template](#) – EPA, May 2014

[Framework for Investigating Asbestos-Contaminated Superfund Sites, OSWER Directive #9200.0-68](#) – EPA, September 2008

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[OSHA Asbestos Standard, 1910.1001](#)

[OSHA General Industry Standard, 1926.1101](#)

## ACTIVITY NO. 3:

## Evaluate Projects During the NEPA Process

As part of the NEPA process, a project area must be evaluated and characterized for the potential to contain NOA and erionite. This includes prescreening the area, including reviewing site location, geology, and topography. Sites are placed into the following categories based on the likelihood that a location will contain NOA or erionite.

- Moderate-to-High Potential: Relatively extensive intrusive or tuffaceous sedimentary formations are present in the project area or potential source areas for the projects soils.
- Low-to-Moderate Potential: Limited intrusive rocks in the project area or the potential source areas, and the upland bedrock (source) area for the soils in the project area is a significant distance away.
- Very-Low-to-Low Potential: Very little or no intrusive, metamorphic or tuffaceous sedimentary formations present in the project area or source area.

NDOT will decide if testing will be conducted for the project during the NEPA study or will be required when the project enters the design phase. NOA/Erionite Branch personnel coordinate the prescreening and any sampling activities deemed necessary.

If sampling is required, NDOT will follow the EPA model for evaluating sites. This includes having a QAPP, FSP, and site-specific HSPs for the sites to be sampled. These plans will be developed by NOA/Erionite Branch personnel.

Information generated during evaluation and characterization of the project area will be used to identify project impacts and mitigation strategies for the NEPA document.

#### Regulations and Guidance

[Guidance for Quality Assurance Project Plans, EPA QA/G-5](#) – EPA, December 2001

[Sampling and Analysis Plan Guidance and Template](#) – EPA, May 2014

[Framework for Investigating Asbestos-Contaminated Superfund Sites, OSWER Directive #9200.0-68](#) – EPA, September 2008

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## ACTIVITY NO. 4:

## Assess Import Material

According to NDOT policy, rock, soil, and other mineral material (*Materials*) obtained or produced for use on NDOT projects shall not have NOA and/or erionite levels equal to or greater than 0.25%. Suppliers of such materials shall follow the procedure outlined in the *Documenting Naturally Occurring Asbestos and Erionite in Import Material for Nevada Department of Transportation Projects* (most recent edition) to document concentrations of NOA and/or erionite in the proposed imported material. The guidance document can be obtained by contacting the NDOT Environmental Services Division, NOA/Erionite Branch, at 775-888-7691.

After the evaluation of the imported material has been completed by the supplier, the evaluation will be sent to NDOT for review and concurrence. This must be done before the material is accepted for use on NDOT projects.

**ACTIVITY NO. 5:****Maintain the NOA/Erionite GIS Database**

The NOA/Erionite Branch has developed and will maintain a GIS database that serves as a repository for prescreening and testing data generated during the evaluation of material sites and project sites, and for information submitted by commercial pit operators. The GIS database will document information gathered by NDOT for NOA and erionite, and will be used as a decision-making tool for future projects and material site evaluations.