

Basic Elements for a Naturally Occurring Asbestos Compliance Plan

Introduction

Any Standard Operating Procedure is must be designed in compliance with the Fairfax County Health Department Division of Environmental Health Air Monitoring and Trends Analysis, Directives 1 and 2, effective March 1994, and applicable requirements of OSHA 29 CFR 1926.1101, effective August 10, 1994. Copies of these directives are attached to this document. The intent of this document is to outline the components, which will comprise a naturally occurring asbestos abatement program for site work.

Background

Naturally occurring asbestos has been mapped in approximately 11 square miles of Fairfax County, which includes a part of Fairfax City. Asbestos bearing rock are interspersed in the Green Stone Rock Formations that underlie the surface soils in the Orange Soils Group. Surface exposure of these rock formations is not usually seen, but it does happen. Even though the soils do not typically contain asbestos, they provide a good surface marker for detecting the possible presence of asbestos bearing rock.

Asbestos is a generic term used to describe the fibrous form of six different minerals. The minerals identified in this particular soil group are actinolite and tremolite.

Before beginning any activities that have changed and not in an agreed upon plan, an amended plan must be submitted and reviewed by Fairfax County Health Department Air Monitoring and Trends Analysis.

The purpose of an asbestos abatement plan is to maintain safe working conditions on the construction site and to prevent migration of asbestos laden dust off the site.

Major Elements

1) Minimizing Generation of Asbestos Laden Dusts:

When excavating soils or rock below the depth of the existing topsoil, or there is rock that requires the use of drilling, blasting or hoe rams, the surfaces likely to generate dust must be kept wet to minimize the potential generation of asbestos dust. Excavated soils suspected to contain asbestos that are held on site must be kept wet or covered until properly disposed.

Adequate vehicle and equipment cleaning must be performed to avoid the spread of asbestos to places such as parking lots and roads.

2) Personal Protection:

Workers in areas of potential dust generating operations, where OSHA permissible exposure limit (PEL) may be reached, must be equipped with disposable Tyvek

coveralls, rubber boots and respirators to protect them and their families from asbestos.

All employees must be provided asbestos awareness training to familiarize affected workers with the nature of asbestos, including the types of health problems it can cause, the appropriate protective gear that is recommended to minimize the exposure to asbestos dust, and the proper use of that equipment. Additional training is required for the individuals directly working within regulated areas, which require the utilization of personal protection equipment. Regulated areas shall be clearly delineated with barrier tape imprinted with appropriate asbestos warning labels.

Strict decontamination procedures must be followed to help ensure that asbestos dust stays where it belongs.

3) Personal and Perimeter Ambient Air Monitoring:

Certain representative workers will be equipped with devices to monitor asbestos levels to which they could be exposed. Personal results will be compared to the OSHA permissible exposure limits (PEL).

Ambient air will be monitored along the perimeter of the site to ensure that dust control measures are keeping airborne fibers concentrations from migrating from the site. Personal and ambient air monitoring results will be compared to the Fairfax County Air Pollution Control Directives and standards on a daily basis.

Right to Know

Any multi-employer (i.e., subcontractors, inspectors, etc.) working on site, must be notified of the possible asbestos hazard. They must also be informed of the control measures and guidelines which must be enforced on-site to limit the generation of dust, and the spread of contaminated soil and rock. Such notification shall be provided in writing.

Employers with employees that have a potential for exposure to asbestos, will review the compliance plan and by endorsement of the plan, agree that the provisions and protocols of the plan are understood and will be implemented and observed routinely. All personnel involved in operations where exposure to asbestos dust may occur must participate in asbestos awareness training in accordance with the 'Right to Know' law. The prime contractor will maintain records of attendance. Key topics to be addressed include Recognition and uses of asbestos, Health effects and medical surveillance, Applicable regulatory requirements, and Personal protection equipment.

As part of the training, those personnel operating rock drills, rock saws, or performing any other operation which could reasonable exceed the PEL must be instructed in personal protection. Training information will come from 29 Code of Federal Regulations section 1910.134.

If air monitoring data indicates that workers performing other tasks may be exposed to levels in excess of standards, those personnel must also be trained and be required to use proper respiratory protection and other personal protection as prescribed.

Engineering Controls

The key to controlling naturally occurring asbestos fibers is to keep all visible dust levels down to an absolute minimum through the use of water. Operations that disturb asbestos containing soil or rock shall not be undertaken without first wetting the soil or rock to control the emission of dust. For those operations where it is likely that visible dust will be generated even after initial wetting (i.e., rock drills), additional dust control measures must be taken. These additional measures may include reducing the drilling or excavating speeds, and continuous misting of the air with water to reduce airborne dust and fibers. A dedicated water source must be in place and be ready to used at all times.

If at anytime during operations, visible dust is observed, operations will cease until the area is wetted or other measures are taken to control the dust.

Air Monitoring

During all operations in which potentially asbestos containing soils or rock are being disturbed, ambient air monitoring will be performed at the site's perimeter lines to determine if dust control measures are adequate.

Air monitoring must be maintained downwind and near the immediate vicinity of daily work activities. Daily results will be compared to the Fairfax County Air Pollution control's 24-hour average standard of 0.02 f/cc for public exposure and OSHA's 8 hour 0.10 f/cc time weighted average limit for worker exposure. In addition, breathing zone air monitoring will be performed on representative personnel, with the greatest risk of exposure. This will help to ensure and document that exposures remain within acceptable levels and that dust suppression methods employed are adequate to reduce airborne fiber releases. Phase-contrast microscopy (PCM), using the most current version of the OSHA method ID-60 or NIOSH Method 7400, must be used to determine the concentration of fibers in the air. Transmission electron microscopy (TEM), or Polarized Light Microscopy (PLM) may be utilized to verify actual asbestos fiber concentrations versus total fiber concentrations. This confirmation can be done since other fibrous substances, if present, may interfere with PCM analysis (see 29 CFR vol 59 #153 Appx. B).

All air monitoring results must be included in the weekly project report to Fairfax County Health Department's Air Monitoring and Trends Analysis. This report must consist of sample dates, location, and fiber concentration per cubic centimeter of air.

As air monitoring information is collected and evaluated, changes in the levels of personal protection and dust control may be made. Written notification of the changes must be made to the Air Monitoring and Trends Analysis.

Daily Activities Log

The individual conducting air monitoring tasks must maintain a log of pertinent site activities including recordation of information that describes and tracks the use of health and safety procedures, activities, locations on site, flow rates, wind direction and temperatures. This is all necessary to interpret the data correctly. A summary of the information from this log must be incorporated into the air monitoring reports which are required to be submitted weekly to the Fairfax County Health Department Air Monitoring and Trends Analysis. Records shall be kept in accordance with applicable OSHA requirements.

Competent Person

Per OSHA requirements in 29 CFR 1923.1101b, there shall be a designated "competent" person on site during all construction activities where asbestos containing soil or rock may be distributed. The competent person shall be a person with the proper training required to recognize asbestos hazards and have the authority to direct corrective actions. This person must be on site or able to be on site within 5 minutes.

Personal Protective Equipment and Decontamination According to Task

Depending on the tasks being performed on-site, workers will fall into one of four categories. The following categories are defined according to the relative potential for exposure to the asbestos containing soil, rock, and/or airborne fibers and the personal protective equipment (PPE) which will be required to be used by individuals in that category:

CATEGORY 1

Exposure Potential: Those individuals who will not be in contact with asbestos containing soil, rock, or airborne fiber levels suspected to be over the standards. This includes workers nowhere near the vicinity of excavations and up wind and workers on days of no excavations that don't come into any contact with any form of asbestos.

PPE required: No special PPE required.

Decontamination requirements: There are none.

CATEGORY 2

Exposure potential: Those individuals whose only contact with asbestos containing soil

or rock will be by walking through these wetted materials. This includes site workers who are engaged in activities in the vicinity of open excavations or trenches, where there is successful dust suppression, but who are not working within the open excavations or trenches.

PPE required: Rubber boots, which can be removed and hosed off to limit spread of contaminated soil.

Decontamination requirements: All visible soil on boots shall be cleaned with water as the individual leaves the area where asbestos containing material is exposed.

CATEGORY 3

Exposure potential: Those individuals whose job duties would cause their clothing to be soiled with asbestos-containing soil, rock, or dust, but who would not be exposed to airborne fiber levels in excess of the Fairfax County standard or Osha's PEL. This includes site workers who are engaged in activities in open excavations with adequate dust suppression.

PPE required:- Rubber boots
- Disposable Tyvek coveralls*

Decontamination requirements: As individuals exit areas where asbestos soil is exposed, clean with water all visible soil from boots and other washable gear and wet wipe visible debris from Tyveks or remove and properly dispose of them if grossly contaminated. Then wash hands properly.

CATEGORY 4

Exposure potential: Individuals operating rock drilling or sawing equipment, hoe ramming, rock removal, or other job categories identified (or found through air monitoring) to be at risk of exposure to airborne fibers in excess of the Fairfax County standard or the OSHA's PEL.

PPE required:- Rubber boots
- Disposable Tyvek coveralls*
- Half-face negative pressure respirators with HEPA protection

* For the performance of some tasks, rubber or vinyl rain suit pant may be worn over the Tyvek suits to protect them from tearing. Precautions should be observed when wearing unbreathable clothing to prevent hypothermia during warm temperatures.

** The use of respirators shall meet the requirements of OSHA 20 CFR 1910.134. Accordingly, a written respirator plan must be developed to address the needs of all employees using respirators, including medical reports. (See next section)

Decontamination requirements: If the potential exists for the OSHA permissible exposure level to be reached or exceeded, as evidenced by personnel monitoring data,

planned work activities (i.e., drilling, rock sawing), or physical conditions of the site (i.e., fibrous rock outcroppings), personnel shall exit work area through decontamination facilities and shower units with appropriate filtration devices. The workers shall dispose of Tyveks properly, and use the decontamination facilities to clean all portions of the exterior of respirators prior to their removal.

As air monitoring data is collected and evaluated, changes in the levels of personal protection may be made. Any such changes would follow consultation between air monitoring personnel, representatives from the primary contractor, and prior approval or an amended Compliance Plan submitted to the Fairfax County Air Monitoring and Trends Analysis.

Medical Surveillance

According to the Virginia Occupational Safety and Health Administration, the dust-generating operations impacting the asbestos bearing rock could potentially cause workers exposures at or above the OSHA PEL (0.1 f/cc), then a medical surveillance program should be implemented in accordance with 29 CFR 1926. The medical evaluation for the affected personnel should entail a medical history, pulmonary function testing, chest x-ray, and any additional tests considered necessary by the examining physician. Workers over the age of forty years are required to have an EKG performed.

All personnel that are provided respirators should be in good physical condition and be judged by a physician to be fit to wear a negative pressure respirator. Personnel required to wear respirators should undergo an asbestos medical history check, X-ray, and pulmonary function tests. However, additional tests may be required as deemed necessary by the examining physician.

Decontamination of Equipment

All tools, equipment, trucks, or machinery must be cleaned of visible soil as they exit the areas where asbestos containing soil is exposed. For wheeled vehicles, this cleaning must take place prior to entering paved roads or parking areas to ensure that asbestos contaminated soils are not tracked onto road surfaces.

Contaminated Spoils

All asbestos contaminated spoils maintained on-site shall be covered with a minimum of 6" of clean (non-asbestos containing) compatible material or other suitable for sealing material such as plastic. Run off from water or air erosion must be totally controlled. Actinolite/tremolite-containing spoils transported off-site must be wetted and covered. Prior notice including the date(s) of transport and the name and location of the recipient

shall be given to Fairfax County Air Monitoring and Trends Analysis for approval.

During transport of actinolite/tremolite-containing material on the site, the material must be adequately wetted. Personal monitoring may be performed for equipment operators transporting the actinolite/tremolite-containing material. If results of the personal and perimeter monitoring indicate elevated fiber concentrations, additional engineering controls including re-wetting the material shall be employed. Should the elevated fiber concentrations approach the PEL, appropriate personnel protective equipment shall be employed.

Disposable Tyveks, towels, and used respirator filters shall be bagged and disposed of as friable asbestos-containing waste according to appropriate Federal, State and local regulations.