DEQ	Air Quality Div POLICY AND PRO	DEPARTMENT OF ENVIRONMENTAL QUALITY	
	Subject: Asbestos NESHAP Pro	gram – Standard	Category:
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			Policy and Procedure

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory, does not affect the rights of or procedures and practices available to the public, and does not have the force and effect of law. DEQ staff shall follow the directions contained in this document.

PURPOSE:

This procedure outlines the standard operating procedures associated with the Air Quality Division (AQD) asbestos program. The procedure provides guidance regarding notifications; inspections; complaint responses; safety, sampling, and personal protection equipment; disposal; and entering a negative air pressure containment area.

AUTHORITY:

The Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to develop and enforce regulations to protect the public from exposure to airborne contaminates that are known to be hazardous to human health. The USEPA established the National Emission Standards for hazardous Air Pollutants (NESHAP) under the authority of Section 112 of the CAA; and asbestos was one of the first hazardous air pollutants regulated. The Asbestos NESHAP was promulgated in 1973 and revised in 1990.

Asbestos is a fibrous mineral that has been used in more than 3,000 different products over the past century for its insulating, acoustical, and fire protection properties. This material can separate into microscopic needle-like fibers. Once airborne, these fibers can easily be inhaled into the lungs and over time can lead to such lung diseases as asbestosis, lung cancer, or mesothelioma. The established NESHAP asbestos regulations protect the public by minimizing asbestos fiber release into the ambient air during renovation and demolition activities. These regulations are cited in Title 40, Part 61, Subpart M of the Code of Federal Regulations.

The AQD was delegated the authority to enforce the Asbestos NESHAP in Michigan. In addition, the State of Michigan has adopted the federal regulation into the Michigan Administrative Code (MAC), 1995 AACS R336.1942 (Rule 942), which went into effect as of November 30, 2000. A violation of the federal asbestos regulation is also a violation of the MAC. The AQD reviews the notifications, inspects demolitions and asbestos removals, and initiates enforcement actions when violations occur.

DEFINITIONS:

A demolition is defined as the wrecking or removing of any load-supporting structural member of a facility together with any related handling operations. The intentional burning of any facility is also regulated and determined to be a demolition.

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A renovation is defined as the altering of a facility or one or more facility components in any way, including the stripping or removal of regulated asbestos containing material from a facility component. The act of removing asbestos containing material is commonly referred to as abatement.

POLICY:

The goal of the Asbestos Program is to receive and document the submitted notifications, and to conduct inspections of demolition and renovation/abatement projects to insure compliance with the Asbestos NESHAP.

Notification

An important aspect of the Asbestos NESHAP is the advance notification requirement, which enables the AQD to ensure that all precautions are being taken to minimize asbestos emissions. Building owners or contractors must submit notifications for all subject demolitions and for subject renovations where an amount of regulated asbestos containing material meets or exceeds the thresholds specified in the regulation. Notifications are submitted online using the <u>Asbestos Notification System</u> (ANS) at least ten working days prior to the start of the project. Notifications entered into the asbestos database are assigned a unique notification identification number. The Asbestos Targeting Program is used to help the inspectors determine which projects they will inspect. Inspections are made based on contractor history, areas of the state, and type of project. Inspections are also performed in response to complaints.

A database/module is located in the Michigan Air Compliance & Enforcement System (MACES). The MACES asbestos module is maintained for the notifications, contractors, disposal sites, and inspections. The asbestos module has linked fields. For example, once the contractor information is entered into the notification database, the information also goes into the appropriate fields of the other databases upon being updated. After the notification database, the most frequently utilized database is the inspection database. The inspection database tracks the type of activity being conducted, date and nature of the inspection (scheduled or in response to a complaint), contractor information, facility information, and disposal information. Records are also kept on whether or not a violation occurred, the date of violation and any comments.

Inspections

An inspection is defined as any field visit to determine compliance with the Asbestos NESHAP regulations. An inspection can occur as the result of a notification, complaint, referral from another agency, and/or as a follow-up to a previous inspection or complaint. Generally, inspections are performed at regulated facilities as defined by the standard to determine compliance with the Asbestos NESHAP. All work place violations (actions that cause or may cause emissions such as inadequate wetting or packaging of the material) found during the inspection result in the issuance of a violation notice (VN). Other minor violations may result in an on-site verbal warning at the inspector's discretion.

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<u>Safety</u>

Given the largely unpredictable and changing nature of conducting compliance inspections under the Asbestos NESHAP, extreme caution and prudence should be exercised by the inspector.

Minimally, the inspector should wear an approved hard hat, safety glasses, and safety boots. Depending on the noise level, hearing protection should also be considered, as well as leather work gloves for basic hand protection. The inspector should also have a department-approved and properly fit-tested respirator outfitted with the appropriate respirator cartridges; Tyvek suits; latex, nitrile or some other similar style glove; and safety steel-toe rubber, latex, or some other similar style boot. This highest level Personal Protective Equipment (PPE) should be used at the inspector's discretion.

Landfill Inspections

If a landfill has a renewable operating permit (ROP), the assigned AQD air inspector will conduct an inspection every two year. If the landfill accepts asbestos waste, the ROP contains special conditions for part of the inspection called EU-ASBESTOS. Section 40 CFR 61.54 of the Subpart M is cited in the ROP.

Landfills are required to notify the respective AQD District office in writing at least 45 days prior to any excavation or disturbance of any buried asbestos waste. This notification is normally handled by the district offices but may be submitted to the ANS. Usually this notification is for periodic drilling for venting of gases. This activity may initiate an inspection by staff. Any landfill inspection will be entered into MACES. A report is being created to include all types of landfill inspections for annual workload.

Schedu	Scheduled or Landfill Inspections			
Step	Who	Does What		
1	Owner/operator	 Notification: Submits a notification of intent to renovate/demolish no less than ten working days prior to the commencement of the project. Notifications must meet the following minimum requirements: The Notification must be submitted online; faxes or email are not acceptable. Notifications must be submitted at least 10 working days prior to the beginning of the project. 		
2	Asbestos Notification System (ANS)	 The <u>Asbestos Notification System</u> (ANS) drives the user to complete the notification accurately and completely based on the notification type. The ANS updates the other linked AQD databases. An internet-based tool called the <u>NESHAP Asbestos</u> <u>Notification Search System</u> allows the public, owner, contractor or inspector to track all submitted notifications. 		

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Step	Who	Does What		
		3. The notification is filed by a unique number.		
3	AQD Inspectors	 Prior to Inspection The inspector(s) runs the inspection targeting program at the beginning of the week based on the notifications received. This program assists the inspector in selecting and prioritizing inspections for the week. Inspection locations are determined based on a variety of factors: Ranking in asbestos database. Prior knowledge of individual contractors. Submitted notifications identifying unique or abnormal project characteristics. Complaints After running the targeting program, the asbestos inspectors coordinate with each other to determine who will conduct which inspection. Inspections may only be performed by inspectors who have had the specific training and possess the appropriate safety equipment. Prior to initiating the field inspection, the notification and/or file should be reviewed for information concerning the location of the project and potential hazards at the site. The asbestos removal procedures indicated on the notification may also provide information about appropriate levels of PPE. The inspection fields in the asbestos database are updated as necessary prior to the inspection. 		
4	AQD Inspector	 At the site Once at the site, the inspector should assess the area for safety and compliance. Once this assessment has been completed, a pre-inspection meeting should be held with the appropriate site personnel to review site specific health and safety risks. General information that should be reviewed includes; emergency evacuation procedures, evacuation routes, warning codes or sirens, and a layout drawing of the site. The inspector should request that site personnel accompany them during the inspection. General walking hazards can be recognized and avoided by working at a controlled pace and using common sense. A lack of footprints in an area may be an indication that it is not generally traversed. Exercise caution when entering an area not normally traversed. The inspector should exercise extreme caution when walking over debris and stand clear of heavy equipment, not assuming the operator is aware of their presence. The inspector should not 		

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Step	Who	Does What
		approach heavy equipment until the machine is stopped.
		The inspector should also be aware of work occurring
		overhead and stand clear to minimize the risk of falling
		objects.
		4. If the site is vacant, the inspector should exercise extreme
		caution while inspecting the site. Entering abandoned
		buildings alone is not recommended.
		5. Extreme caution should be exercised when climbing
		ladders. Even ladders that appear to be in good condition
		can present slip hazards, so the climber must always be
		cautious and use proper climbing techniques. To minimize
		the risk of falling if a load bearing foot slips off a foot rung,
		the climber should hold onto the horizontal foot rungs
		instead of the vertical side rails. Also, flexible climbing
		gloves, such as standard leather palmed gloves, should be
		worn to provide the best possible grip. Since both hands
		are needed to safely climb a ladder, clipboards,
		respirators, and other small equipment should be placed in
		a bag. Only one person at a time should be on the ladder.
		6. The inspector should never assume that a roof is safe to
		walk on. Roofs can have a variety of safety hazards
		including hidden skylights, hidden temporary roof patches,
		corroded roof supports, or slippery, sloped surfaces.
		Roofs that appear dangerous (e.g., with obvious holes, ice,
		steep slopes, heavy solids loading) should not be crossed.
		If a roof appears to be secure, the inspector should have
		the site personnel go first and lead them across on a path
		that has been proven safe. Following site personnel is a
		critical safety measure—the inspector should never
		venture out on a roof without such an escort.
		Elevated platforms and scaffolds should be assessed for
		safety prior to using. Those that appear to be in poor
		condition should be avoided.
		8. The inspector should also be cognizant of the risk of
		electric shock. Frayed electrical cords, ungrounded
		equipment, and a lack of Ground Fault Interrupters are
		hazards that should be avoided.
		9. Fire hazards should also be avoided. Conditions
		conducive to fires or explosions include flammable
		materials, flammable liquids, explosive vapors, explosive
		dusts, compressed gas cylinders, and other miscellaneous
		materials. "Hot work" such as drilling into ducts or pipes is
		also a hazard due to the sparks and potentially flammable
		materials inside the duct or port. Ignition sources can
		include smoking and discarded matches. If the inspector

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Step	Who	Does What
		 is a smoker these items should not be taken onto the site during the inspection. 10. The inspector should not enter confined spaces. Confined spaces are areas that: a. Are not large enough to be entered. b. Are not configured to enable an employee to perform work. c. Limit or restrict a person's ability to enter/exit the space. d. Are not designed or intended for continuous human occupation.
5	AQD Inspector	 During a Scheduled Inspection An asbestos inspection includes, but is not limited to, performing and documenting the following elements. The appropriate inspection forms can be used to document the following information (see Appendix B, NESHAP Asbestos Inspection Report). The inspector should conduct an inspection with the intent of making the following determinations: Determine if the facility (and work being conducted) is regulated by the Asbestos NESHAP. Confirm that all of the parameters documented in the notification are accurate. Obtain the name(s) and address(es) of all the contractors in charge at the work site. Confirm that at least one on-site representative has been properly trained in the regulations and the means of complying with them and that the training certificate is present (contractor/supervisor certification). Document the activity being conducted at the site (demolition or renovation/abatement). Document the suspected type of asbestos containing material (ACM) involved at the site (example: insulation types, ceiling or acoustical tiles, category I non-friable, or category II non-friable). Determine if the amount of asbestos material being abated or disturbed is above the regulated threshold as specified in the NESHAP (>160 square feet, 260 linear feet, or 35 cubic feet if material is off of facility components where the length or area could not be measured previously. Document the quantity of material being abated.

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Step	Who	Does What
		 h. Determine whether the ACM is friable, which is defined as material that when dry can be crumbled, pulverized, or reduced to powder under hand pressure. i. Determine whether the ACM is regulated which is defined as (a) Friable asbestos material, (b) Category 1 non-friable ACM that has become friable, (c) Category 1 non-friable ACM that has become friable, (c) Category 1 non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of the demolition or renovation operation. j. Determine if the ACM being removed is adequately wetted, as required in the regulations. k. Determine if the ACM is placed in leak-tight containers and proper disposal procedures are performed. During a Landfill Inspection The Asbestos Program staff will conduct a compliance inspection at landfills to insure proper disposal of asbestos containing material. This inspection may or may not be in conjunction with the air inspector. An inspection at the landfill includes, but is not limited to, the following activities. 1. Determine whether the delivery containers to the landfill display the proper labeling. 2. Determine whether the material, once disposed in the landfill, is covered within the required 24-hour time period. 3. Review and reconcile manifest documentation that is retained by the landfill facility for asbestos waste deposition and/or Ordered Demolition waste. 4. Take photographs and samples when necessary.
6	AQD Inspector	Samples During either type of inspection the inspector should take as many photographs as necessary to document the site, work being conducted, samples collected, and the containment of the material. The inspector also collects sufficient samples of the suspect material, when necessary, and submits the samples to a certified laboratory to perform the analysis. Properly documented and collected samples are one component of a thorough compliance inspection and are necessary to document violations. Inspectors are encouraged to collect

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		samples often to develop and maintain proper sampling	
		technique. Important considerations of the sample collection	
		process include personal safety, sample contamination, and chain	
		of custody.	
		1. Prior to collecting samples of suspected asbestos material,	
		the inspector should assess the hazards of the situation	
		and don the appropriate level of personal protective	
		equipment.	
		Prior to, and following, the collection of each sample of	
		suspected asbestos material, the inspector should be	
		certain sampling tools are decontaminated. This is done	
		to prevent cross-contamination of samples.	
		Proper precautions are used to avoid contact with contaminated materials.	
		4. The inspector needs to make every effort to collect an	
		adequate number of samples of suspected asbestos	
		containing material.	
		5. The inspector should collect the sample in a manner which	
		does not cause fibers to release (for example pre-wetting	
		the material prior to removal or packaging).	
		6. The size and nature of the material may determine the	
		type of packaging that is used. Samples can be collected	
		into Ziploc-type plastic bags or plastic Petri-type dishes.	
		7. All samples will be sealed with tamper-proof tape. This	
		should be affixed to the sample container before the	
		laboratory seal is attached.	
		8. If a sample is collected into a Ziploc-type plastic bag, the	
		opening is secured with the evidence label on top of the	
		tamper-proof tape. The sample is then double bagged.	
		9. If a sample is collected into a Petri-type dish, the dish is	
		sealed with the evidence label on top of the tamper-proof	
		10. The sample container is labeled with the site information,	
		date, and the inspector's initials.	
		11. The inspector needs to document the samples collected in	
		the inspection report.	
		12. The samples are kept in the care, custody, and control of	
		the inspector (in a locked area unavailable to non-AQD	
		statt) until snipped or submitted to the laboratory	
		13. The inspector will need to fill out the laboratory analysis	
		request and chain of custody forms and submit the	
		samples to the laboratory for analysis as soon as possible.	
		14. The final results from the laboratory analysis are included	
		in the inspection report file.	

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Step	Who	Does What
		15. The physical samples are retrieved from the laboratory following analysis and stored in a locked storage devise away from the general office area for an appropriate period.
		Chain of Custody
		An official and appropriate chain of custody (COC) for each sample taken is needed. COC is a method of tracking who had control of - and access to - the samples from the time they were collected until escalated enforcement occurs. In the event of an administrative, civil, or criminal case this is imperative to ensure proof the samples presented as evidence are the same samples that were collected.
		Once samples are collected they should be recorded on the COC form. A COC form should be completed for each site where samples are collected. When the samples are sent to the laboratory for analysis, the COC form must be included. The laboratory staff should sign the COC form when they accept control of the samples. (If samples need to be mailed to the laboratory the inspector should sign off control when they are placed in the mail. The US Post Office should be recorded as the entity who receives the samples.) The laboratory will retain the COC form as long as they have the samples. The COC form should always accompany the samples and should never be separated.
		Sample Storage
		The laboratory does not keep samples indefinitely. Typically they are disposed of every 6 months. At the beginning of each month a Lansing inspector will obtain all samples stored at the lab and transfer them to the locked sample storage container located at the Filley Street shop. The COC form will be signed when the samples are accepted and accompany the samples. When the samples are stored in the storage container the inspector should sign off the COC form and Storage Container should be recorded as the entity who receives the samples.
		An Asbestos Sample Storage Sign-In Log will be kept in the locked container. Any entry to the container will require a sign-in on the log. The log will record the date, time in, printed and signed name of staff, activity at storage container, and time out. This will record who has accessed the storage site.

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Step	Who	Does What		
		Samples will be retained in the storage container for a minimum of five years. The COC forms will be kept with the samples during this time. At the end of the five-year duration any samples not associated with active cases can be disposed of appropriately by returning to the laboratory.		
7	AQD Inspector	 After the Inspection (scheduled, complaint or landfill) The inspector completes the inspection report for each facility. This includes a. the post inspection interview, b. chronology of events, and c. summary of conclusions and findings. A complete inspection report, photographs, and sample analysis information is entered into the compliance database module of MACES. Since each site inspected is entered into MACES the inspection should be in MACES within a week. The inspector should designate time during the week (i.e. every Monday or Friday morning) to enter the inspection reports. If available, the notification will be tied to the inspection in MACES. A paper file for each inspection is kept by the inspector for any other documents. Also, a checklist has been prepared to make sure all steps are followed for an inspection, violation notice and escalated enforcement. This is attached to the front of the paper file. PPE are decontaminated or disposed of properly. 		
8	AQD Inspector	Violation Notices All work place violations (actions that cause or may cause emissions such as inadequate wetting or packaging of the material) result in the issuance of a violation notice (VN). Other minor violations may result in an on-site verbal warning at the inspector's discretion. 1. When a violation notice is issued, it is sent to the following people: a. the owner(s) b. the operator(s) c. the AQD Enforcement Unit d. the respective District Supervisor e. the Technical Programs Unit Supervisor f. the Assistant Division Director h. the Division Director		

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Step	Who	Does What
		 Any responses from the initial VN, including the date of the response, are documented in MACES. If a response is not received within 21 calendar days, a second VN will be sent. Also, if a phone number or email is available the recipients may be contacted if a response is not received. The date of the follow-up or second VN will be documented in MACES. Any additional follow-up will be documented in MACES, in the comments field. The date of receipt of any response to a VN shall be documented in MACES. If no response is received after the second attempt, the lack of response must be documented in the comment field in MACES. Each VN shall be posted to the AQD Source Information Internet site by the secretary who finalizes and sends it to the recipients. When the VN is resolved the inspector shall inform the program manager who will update the master VN list in MACES.
9	AQD inspector	Escalated Enforcement If the AQD Enforcement Unit agrees to escalate the case, the inspector will prepare a referral package containing all the inspection information and a staff activity report. The enforcement unit will be responsible for any follow-up documentation in the MACES enforcement module.

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<u>Complaint Response</u> The Asbestos Program places a high priority on complaint investigations and follow-up. The Asbestos NESHAP inspector will determine the urgency of the complaint and act accordingly with prompt follow-up of citizen complaints.

Step	Who	Does What
1	Citizen	 Provides a complaint to staff via telephone, fax, letter, or other means. The following information should be provided as part of the complaint: Address of the site where the complaint was observed; Complainant's name (unless anonymity is requested); Phone number; Address of the complainant;
		Date and time the complaint was received by the inspector; and
		6. Date/time the concern was observed by the complainant.
2	AQD staff	Complaint Response
	person	 The complaint information is entered into the asbestos module of MACES.
		 a. If the complaint is under the jurisdiction of the NESHAP an investigation is performed by the asbestos program staff. This investigation can consist of a phone call(s), site visit(s), or other means to discern whether or not there is a basis for the complaint or any NESHAP violations. The specific nature of the complaint should be ascertained as follows: whether the complaint is related to asbestos renovation or demolition. a. If the complaint is asbestos related work practice or assumed work practice violations should be determined. b. Demolition related – discern whether it is a failure to notify or other. c. Whether the situation is ongoing, or has occurred earlier. d. Duration of the complaint. e. Determine from the complaint if the complaint has suspected health effects. f. If the complaint is a result of a PEAS call – Note the PEAS number on the complaint investigation/inspection report. g. Complaints with confidential information should be filed in the appropriate file. h. The inspector will try to determine the personal name, company name, and other necessary information of the party or parties responsible for the alleged violations from the complainant.

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Step	Who	Does	What
			i. The complainant may be contacted by the inspector
			with the results of the complaint investigation.
		3.	If the complaint is not under the jurisdiction of the asbestos
			program, the complaint is forwarded to the appropriate
			agency/person.
3	AQD Staff	1.	If it is determined the NESHAP program has jurisdiction,
	Person		the complaint investigation may begin by contacting the
			alleged responsible parties, and/or conducting an
		2	Drier to conducting a site inspection, the inspector should
		۷.	auery the ashertos database: determine if a patification
			has been submitted for work at the site address, or any
			other pertinent information concerning the complaint
		3	If the alleged responsible parties are known, search the
		0.	asbestos company files for historical information regarding
			the contractor/person. Make note of names, phone
			numbers, and addresses of the responsible persons.
4	AQD Staff	Comp	laint Investigation
	Person	1.	The inspector may choose to inspect the site after
			determining that there may be a basis for the complaint
			received.
		2.	The inspector may choose not to immediately enter the
			site upon arrival at the site.
			a. When arriving at the site the inspector will assess the
			area for safety and compliance and note if work is
			ongoing.
			b. The inspector may calcium survey the worksite while
			and company name on any vehicles at the site
			License plate numbers of vehicles at the site may be
			recorded. The inspector may take photos as needed
			prior to site entry.
			c. For site entry, the inspector will attempt to make
			contact with a responsible person prior to conducting
			a complaint investigation at the site.
		3.	The inspector should identify themselves by using the
			MDEQ identification card and state the reason for entry is
			to perform a complaint investigation. The responsible
			person may accompany the inspector during part or all of
		4	the complaint investigation.
		4.	The inspector will determine it a NESHAP violation is
			occurring of has occurred at the site.
			a. Fridlos, sample collection, and discussions with responsible persons at the site will be performed as
			needed to determine compliance with the NFSHAD
			regulations
			regulations.

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		 b. If there is not a NESHAP violation observed, the inspector will determine if the investigation needs to be referred to another State of Michigan department or agency. c. If a potential NESHAP violation is observed, the responsible person should be made aware of the potential violation and the steps needed to correct the situation. d. The inspector will provide any appropriate printed information to persons at the site regarding the NESHAP regulations as needed. e. The inspector will collect information regarding all responsible parties at the site, such as name, phone numbers, and mailing and work addresses of all parties involved with work at the site. f. The inspector will collect business cards of parties at the site.
5	AQD Staff Person	 Complaint Post Inspection Samples, if collected, will be forwarded to the laboratory for analysis. A laboratory form and chain of custody form will be completed and forwarded to the lab along with the samples. The inspector will determine if the owner and/or operator is in compliance with the federal NESHAP regulations and follow-up accordingly with a violation notice if not in compliance with the NESHAP. The results of the complaint inspection, including a record of the violation notice will be entered in the MACES Asbestos Module.

Safety, Personal Protective Equipment & Containment Entry

Personal safety is critical in performing any investigation. Prior to any site investigation the inspector should have the appropriate personal protective equipment on hand: safety steel-toed shoes, hard hat, safety glasses/goggles, hearing protection, half or full-face respirator, work gloves, boots, Tyvek suits, duct tape, flashlight, latex gloves, Petri dishes, sampling bags/labels for sample collection, and other safety equipment as required. A camera, notepad and pencil/pen should be in the possession of the inspector.

To determine compliance, an inspector may need to enter a negative pressure containment. This should only be done when absolutely necessary and while wearing the highest level of personal protective equipment. If the inspector determines this is necessary, he/she should follow the recommendations contained in the Entering a Negative Pressure Containment Area portion of this procedure

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Protective clothing is worn during inspections of active asbestos removal projects for a number of reasons including:

- 1. preservation of health
- 2. comfort
- 3. ease of decontamination

Asbestos is known cause of asbestosis, mesothelioma, lung cancer and other ailments. Using protective clothing and following proper decontamination procedures help to protect the inspector and his/her family members by preventing asbestos from being brought out of the worksite.

Use of protective clothing can also reduce the occurrence of skin problems associated with ACM contact. In addition to asbestos, ACM commonly contains substances such as mineral wool, fiberglass, plaster, and cement which can produce rashes in sensitive individuals. Long-term exposure to ACM can also cause "asbestos warts" which often take months to heal.

Protective clothing can also ease the decontamination process. Following an inspection, an improperly clothed individual will find it very difficult to remove ACM from his/her clothing, skin and hair because the adhesives used to make the ACM stick to the substrate are reactivated by the water applied during the removal process.

The most common protective clothing worn in contaminated environments consists of disposable coveralls, foot and head coverings, and gloves. These items are available in many styles and materials.

Recommended Protective Equipment

The following information has been extracted from the USEPA's Health and Safety Guidelines for USEPA Asbestos Inspectors. Inspectors should be prepared to wear the following protective clothing when entering a removal, demolition, or renovation area:

- 1. Respiratory protection is of the utmost importance. Minimally, inspectors should wear a properly sized and fit-tested respirator outfitted with high efficiency particulate cartridges.
- 2. Disposable, full-body, hooded outer coveralls (e.g., Tyvek® suit or equivalent). If the inspector is wearing a Self-Contained Breathing Apparatus (SCBA), coveralls with an expanded back should be worn. In certain cases, an inspector may be required to use specialty coveralls such as Saranex-coated Tyvek® (chemically resistant) or Nomex® (fire retardant).
- 3. A bathing suit (or equivalent) or inner disposable coveralls. When possible, particularly when a changing or decontamination area is available, all street clothing should be removed, the inspector may choose to wear a bathing suit under the protective clothing. If it is not possible to remove street clothing, the inspector should roll up pant legs and sleeves and don inner disposable coveralls. Outer coveralls are then worn over the bathing suit or inner coveralls.
- 4. Disposable gloves taped to the outer overalls.
- 5. Disposable inner booties (e.g., Tyvek® or equivalent).

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- 6. Disposable outer booties (water-resistant material) taped to outer coveralls.
- 7. Hard hats, safety glasses, safety shoes, hearing protection, when required by the situation or by the owner/operator.

Step	Who	Does What
1	AQD Inspector	Decontamination
		A three-stage decontamination system consists of a clean room,
		shower room, and equipment room, (sometimes referred to as a
		dirty room) contiguous with the active removal area. A detailed
		description of this type of decontamination system, commonly
		used in the asbestos abatement industry, can be found in the
		OSHA Construction Standard, 29 CFR 1926.1101.
		Prior to Entering the Clean Room
		1. Examine the respirator thoroughly to determine whether it
		will function properly.
		2. Make sure that you have all materials and equipment
		necessary to conduct the inspection safely (e.g., protective
		clothing, respirator, duct tape, extra plastic bags, spray
		bottle, disposable towels, flashlight, camera, etc.). All
		materials carried into the contaminated area should be
		sealed in a plastic bag to minimize contamination.
		3. If you take a camera which is not waterproof into the
		contaminated area, seal it in an impermeable clear camera
		box to protect it and facilitate decontamination.
		In the Clean Room
		1. Remove all street clothing including socks and underwear
		and seal them in a clean plastic bag. If desired, wear a
		bathing suit (or equivalent), appropriate footwear
		(sneakers-steel-toed shoes, etc.) and inner disposable foot
		coverings. Tape tops of inner disposable foot coverings to
		your skin. (Inner footwear and foot coverings are
		unnecessary if washable, steel-toed boots can be worn.)
		Any equipment not taken into the contaminated area
		should also be placed in the plastic bag.
		2. If an SCBA will be used, don the SBCA with the air flow
		valve closed; let the respirator face piece hang from the
		neck by the strap.
		3. Don disposable, full-body, hooded coveralls. Do not yet
		put on the hood or zip up the suit. If using an SCBA, use
		coveralls with an expandable back or oversize (XXL)
		Tyvek®.
		4. Since Tyvek® booties will rip quite easily once they
		become wet; wear disposable, reinforced, or steel-toed

Entering and Exiting Site with a Three-Stage Decontamination System

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Step	Who	Does What
		washable rubber boots over coveralls. Use duct tape to
		attach boots to coveralls.
		5. Don respirator face piece and tighten straps. Perform
		negative-and positive-pressure field checks for air-
		purifying respirator. For SCBA, connect hose to regulator
		and open air valve.
		6. Fit the hood of the coveralls snugly around the respirator
		face piece and zip up the coveralls. Use duct tape to
		close gap at neck if desired.
		 Don disposable gloves. Use duct tape to seal them to the coveralls.
		8. Proceed to the shower area; leave disposable towels
		(sealed in a plastic bag), an extra plastic bag and soap
		near the shower.
		9. Proceed through the equipment room to the contaminated
		area and conduct the inspection.
		1 While standing poor the exit HEPA vacuum (if possible)
		and wet wine all visible debris from protective clothing
		sample containers, sampling equipment, and any other
		items which are being taken out of the work area. (Use a
		spray bottle and disposable towels as necessary.)
		Proceed to the equipment room.
		In the Equipment Room
		1. If possible, decontaminate all non-disposable equipment
		including footwear at the site. If decontamination is not
		possible, seal all contaminated non-disposable materials
		in a plastic bag and take them with you to decontaminate
		later.
		2. While still wearing the respirator, carefully remove the
		coveralls, rolling them inside out in the process. If a DAPP
		(Powered Air Purifying Respirator) is worn remove the
		belt which supports the motor/filter unit and hold the unit
		while removing coveralls.
		3. Place all disposable contaminated protective clothing in a
		proper waste disposal container and place non-disposable
		items in the shower.
		4. Wear respirator (bathing suit, and taped inner booties, if
		worn), proceed to the shower.
		In The Shower Area
		1. Clean non-disposable items and place them in clean room.
		2. Thoroughly well the entire body. Remove respirator. Soak
		and dispose of HERA miler callinges as aspesios-
		equipment room). Clean respirator and place it into the

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Step	Who	Does What
		clean room. Remove booties and inner footwear (if worn).
		Place footwear in clean room.
		3. If wearing a bathing suit, remove and thoroughly rinse it,
		put it in a plastic bag, and place it in the clean room.
		Finish showering, thoroughly washing the entire body with
		soap and water.
		4. Proceed to the clean room.
		In The Clean Room
		1. Drv off and dress in street clothes.
		2. Give all disposables (including used towels) to the site
		operator if permitted and if they will be disposed of in an
		approved landfill. Otherwise place disposables in labeled
		plastic bags and remove them for proper disposal
		Entering and Exiting Sites Without a Three-Stage
		Decontamination System
		1 Inspections are often required at sites where a three-stage
		decontamination system is not available. When
		confronted with such a situation the inspector must use
		bis or her judgment regarding the safest method of
		conducting the inspection
		Before Entering the Contaminated Area
		1 Examine the respirator thoroughly to determine whether it
		will operate properly
		2 Make sure you have all materials and equipment
		2. Make sure you have an materials and equipment pocossary to conduct the inspection safely (e.g. protective
		clothing disposable towels, extra plastic bags, spray
		bottle flashlight camera etc.) Materials carried into the
		inspection site should be sealed in a plastic bag to
		minimize contamination
		3 If you take a camera which is not waterproof into the
		5. If you take a camera which is not waterproof into the
		boy to protect it and facilitate decontamination
		A Leave all street clothing on Short-cloove shirts and short
		Leave an succe dourning on. Short-Sheeve shints and Short
		parts are preferable. If you are wearing forg parts of forg
		5 Don innor bootion (o.g. Tweek® or aquivalant) and innor
		disposable coveralls over street elethes. (Inner feetweer
		and foot covorings will not be personantly if stool tood
		and tool coverings will not be necessary if steer-toed,
		washable bools can be wolli.)
		u. If a SUDA will be used, util the SUDA with the all HOW
		valve dioseu, let the respirator race piece hang nom the
		The constant dispersible sourcelle. Maar sourcelle with an
		7. Don outer disposable coveralls. Wear coveralls with an
		expandable back or an oversize (XXL) I yvek® suit if an
		SCBA is used, but do not zip it up.

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Step	Who	Does What
		 Since Tyvek® booties will rip quite easily once they become wet, wear disposable reinforced, or steel-toed washable rubber boots over the outer coveralls. Use duct tape to attach boots to the coveralls. Fit the respirator face piece to the face, tighten the face piece straps and check face seal. If using a SCBA, connect hose to regulator and open the air valve. If using an air-purifying respirator, conduct negative- and positive-pressure field tests. Fit the hood of the coveralls snugly around the respirator face piece and zip up the coveralls. Fit the hood of the coveralls snugly around the respirator face piece and zip up the coveralls. Don disposable gloves; use duct tape to seal gloves to the sleeves of the outer coveralls. Proceed to the contaminated area and conduct the inspection. Before Leaving the Contaminated Area While standing near the exit, HEPA vacuum (if possible) and wet wipe all visible debris from the outer protective clothing. Use a spray bottle containing amended water and disposable to wels to wet wipe the suit; use plenty of water. Standing at the doorway inside the work area, remove outer protective clothing and immediately step outside the area. Place all disposable materials in a proper container for disposal. Outside the Contaminated Area Once outside, thoroughly wet wipe and mist spray the respirator and inner protective clothing. Place all disposable materials into a proper container for disposal.

DIVISION DIRECTOR APPROVAL:

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Lynn Fiedler, Director Air Quality Division