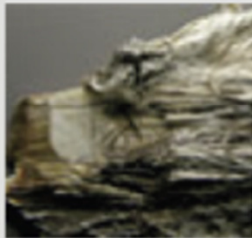




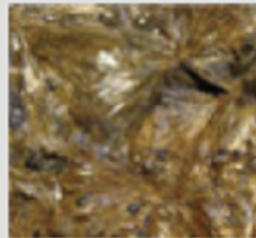
Welcome!

Today's Workshop is Asbestos, Part II

THERE ARE 6 TYPES of ASBESTOS



Chrysotile



Amosite



Crocidolite



Tremolite



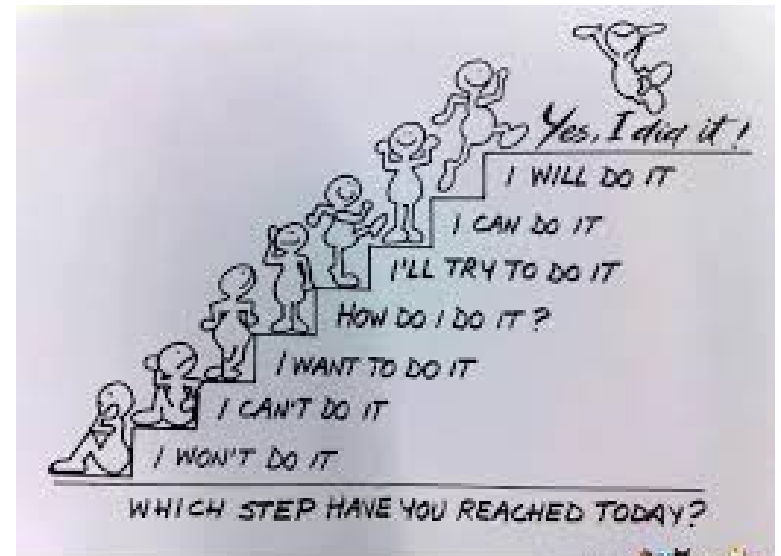
Anthophyllite



Actinolite

Why are you here?

- Required by law and NH Solid Waste Rules.
- Build your resume



Why this Workshop?

Asbestos, Part II

- Tie together the concepts you learned in Basic Training and previous Asbestos Workshops.
- Learn how to manage and identify asbestos within the constraints of your SW Permit.





Asbestos, Part I

- Health Concerns of Asbestos
- History of Asbestos Use & Production
- Overview of Current Uses of Asbestos & Asbestos in the Waste Stream
- Asbestos Regulations: Soup to Nuts
- Best Management Practices



Today's Agenda

- Why & How Asbestos is Regulated
- Asbestos at SW Facilities
- Shipping Asbestos
- Activity
 - Outlining an Asbestos Response Plan
 - Implementing an ARP
 - Public Education & Disposal Options

Why & How Asbestos is Regulated

Thomas E. Livingston
NHDES Air Division





Asbestos

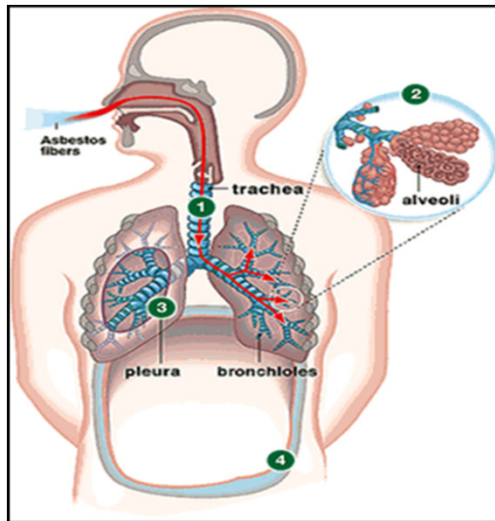
HEALTH AND SAFETY CONCERNS

Asbestos – Naturally Occurring Mineral

- Most Common Types
 - Chrysotile (Fibers)
 - Amosite (Needles)
 - Crocidolite (Needles)
- Two Forms
 - Friable
 - Non-Friable



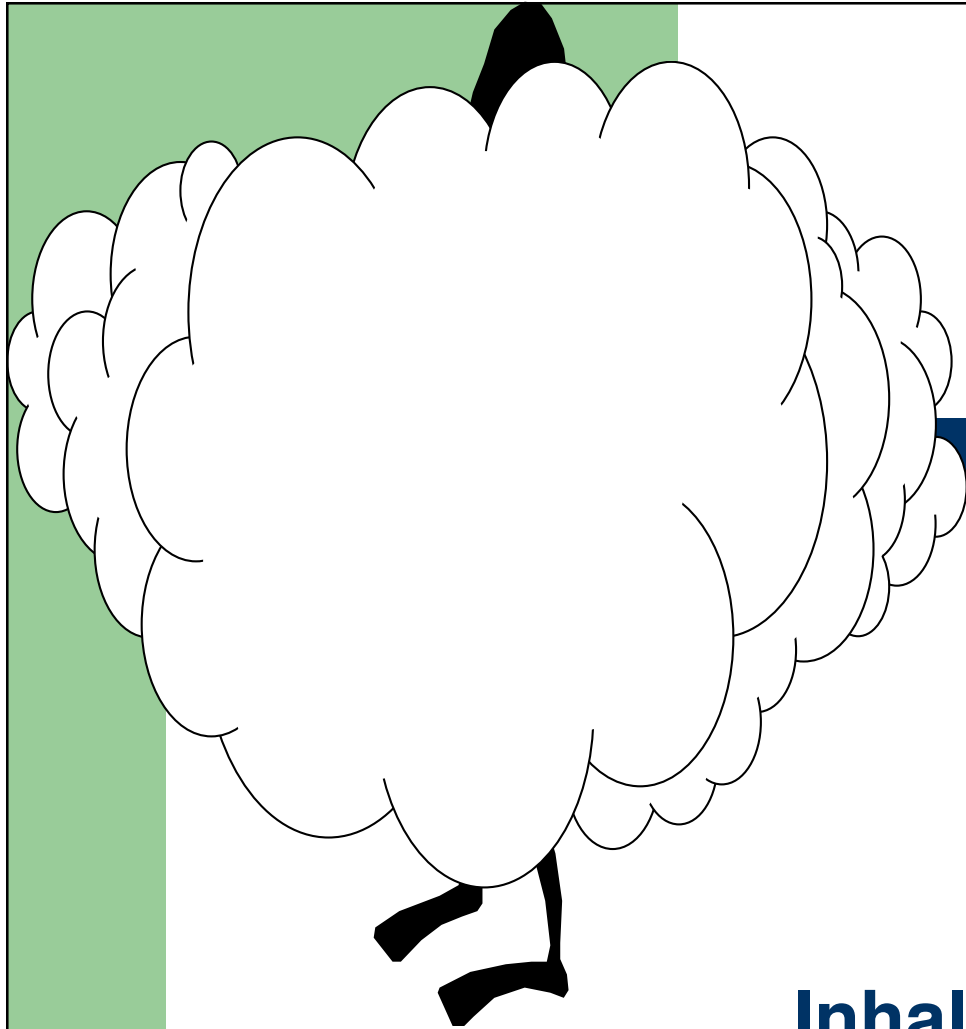
Diseases associated with inhalation exposure to asbestos fibers



Asbestos Fibers Will Lodge Deep in Lungs

- Lung cancer
- Mesothelioma
- Asbestosis

*Latency period
10 to 40 years before
symptoms*



Types of Exposure:

- 1) Ingestion
- 2) Inhalation

Inhalation exposure occurs when airborne fibers are breathed in and deposited deep within the lung tissue.

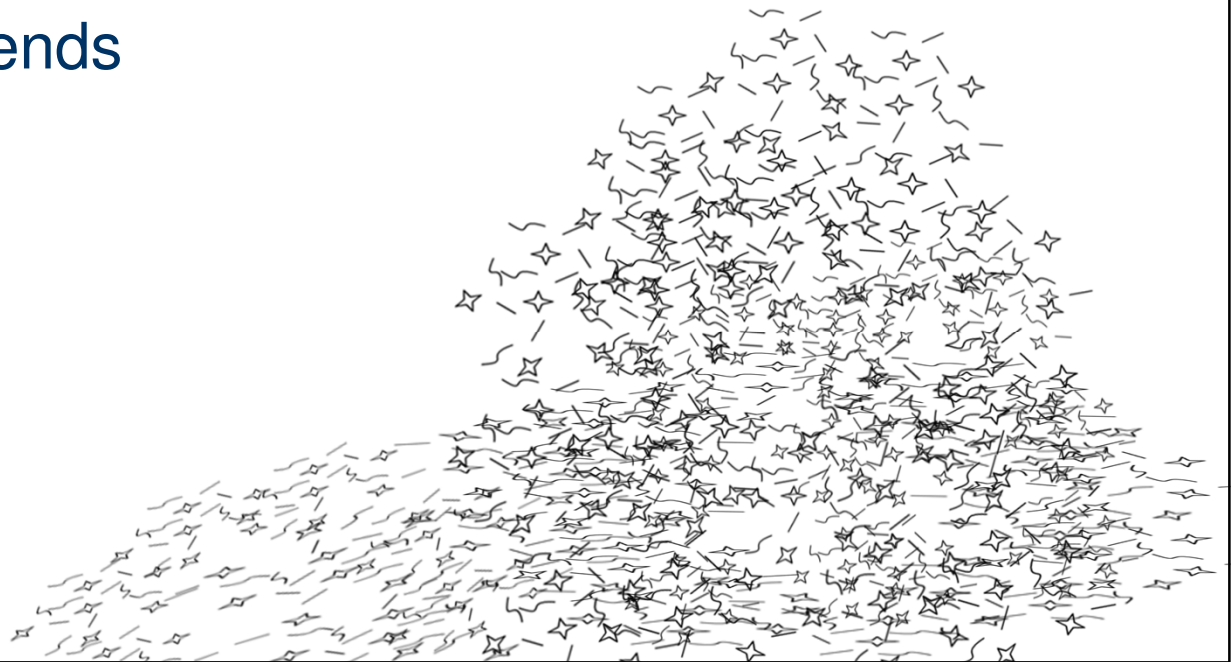
Factors that determine risk for developing disease

- Dose
- Duration of exposure
- Frequency
- Other environmental irritants
- Genetic predisposition



First & Second Hand Exposure

- You (inhalation, clothing, shoes)
- Your Co-Workers
- Residents
- Family and Friends





Rules and Regulations

BRIEF OVERVIEW

Federal Requirements

- 40 CFR 61 US EPA
 - Mandates Inspections
- 49 CFR 107, 171-173 US DOT
 - Packaging and Transport
- 40 CFR 763 AHERA
 - Training for Inspectors
- 29 CFR 1926 OSHA
 - Employee Safety





State Requirements

NH Department of Environmental Services

Air Resources Division: Env-A 1800

- Requires that Inspections for Asbestos be Conducted
- Establishes Work Practices for Asbestos Abatement Activities
- Requires that Asbestos Abatement and Asbestos Disposal Site Contractors and Workers be Trained and Licensed

Waste Management Division: PART Env-Sw 901

- Establishes Requirements for the Collection, Packaging, Storage, Transportation and Disposal of Asbestos Waste

Local Requirements

City & Town Governments

- Building & Code Department Permitting
- Notification
 1. Code Department
 2. Health Officer
 3. Abutters



Homeowners can do their own asbestos abatement work...

- Only applies to single-family owner occupied residence.
- Must not be sold for six months after asbestos abatement.
- Must still follow the work practices, properly package, and properly dispose of the ACM per Env-A 1800, as would a Certified or Licensed worker.



Pre-Demo Inspection

40 CFR 61
and
Env-A 1800



Mandates that materials which will be disturbed be inspected by a **“COMPETENT”** person, prior to being demolished.

Pre-Demo Inspection

Env-A 1800 defines “**COMPETENT**” as:

“Capable of identifying asbestos hazards in a commercial, private, or residential structure, and who has completed, at a minimum, a training course for asbestos inspectors meeting the requirements of 40 CFR 763, Subpart E, Appendix C, Section I: 1,A.”



Pre-Demo Abatement

1. 40 CFR 61
2. Env-A 1800



Mandates that all Asbestos Containing Building Materials (ACBM) be “**REMOVED**” by a licensed asbestos abatement contractor, prior to the demolition of the building in which the ACBM is located.

Packaging Requirements

- All waste is to be packaged “Wet”.
- Packaging must allow no “Visible Emissions”.
- Packaging must be “Sealed”.
- Packaging must be properly “Labeled”.
- Packaged waste must be stored in a “Secure” location.





Identifying Asbestos

ASBESTOS IN THE SOLID WASTE STREAM

Demolition & Renovation Projects Asbestos Hazards

NHDES receives 1200 demolition/renovation notifications per yr.



Some Common Products Containing Asbestos

- ✓ *Vinyl Flooring - tile/sheeting backing & mastics*

By the way, did you know that you can still purchase items that contain asbestos?

- ✓ *Caulking and Putty*
- ✓ *Dry Wall, Plaster & Joint Compound*
- ✓ *Friction Devices*
- ✓ *Vermiculite*

Vinyl Floor Tile



Ceiling Tile



Roofing



Shingles



Flashing/Caulking



Insulation



Concrete or Asphalt Cements

Asbestos Siding









Where might
you find
asbestos here?



ASBESTOS SOLID WASTE RULES

(Env-Sw 901)



Melanie Doiron WMS III

NHDES Solid Waste Management Bureau

How is Asbestos Waste Regulated in NH?



Law: RSA 149-M

Rule: CHAPTER Env-Sw 900

PART: Env-Sw 901



This Rule applies to:

- *Collecting, Storing and Transferring*
- *Processing and Treating*
- *Disposal*
- *Reuse and other Limitations*
- *Transporting, Packaging, Labeling*
- *Testing and Reporting*

What is Asbestos Waste?

- A solid waste that contains more than one percent asbestos by weight;
- Any asbestos-containing solid waste that is collected in a pollution control device designed to remove asbestos; and
- The entire volume and weight of any waste identified in the above when mixed with any other material or any solid waste.



Remember...

Asbestos can be found here

- Thermal Insulation
- Roofing Materials
- Spray on Insulation
- Floor Tiles
- Vinyl Sheet Flooring
- Adhesives
- Ceiling Tiles
- Siding
- Other Materials



Is Your Facility Prepared to Accept Asbestos Waste?

- Are you authorized/ permitted to accept asbestos at your facility?
- Can you properly handle/or store it?
- Do you have written procedures in place, for when it comes into your facility?





Permit Authorization

Section IV: Terms and Conditions

- **Authorized Waste:** This permit authorizes the facility to **receive and store asbestos waste** generated from the Permittee's **contracted asbestos abatement projects**.
- (2) **Facility Capacity:** Pursuant to Env-Sw 1204.04, the rate of incoming authorized waste shall be **limited** to 30 tons per day, on average, but in no case shall the rate exceed the quantity of waste the facility is able to actively manage and properly handle and process in accordance with this permit.
- (3) **Location Restrictions:** The location of the facility shall comply with siting **requirements** provided in Env-Sw 1203, except for the setback requirements specified in Env-Sw 1203.01(b).

AUTHORIZED

Asbestos Waste Holding Facilities for Abatement Contractors

Env-Sw 407.06

Eligible for a PbN to receive and store asbestos if:

- Hold a current license (Env- A 1800)
- Meet certain requirements
 - Waste from contracted projects (limited private company)
 - Only employees of permittee (certified) can handle waste
 - 100 cyd max stored at facility
 - Other requirements i.e. Env-Sw 901

APPROVED

What is Needed To Prepare?

Accepting it (authorized)

- Permits- type, approvals
- A written plan
- Prepare- training, handling, storing, shipping

Unexpected (gift)

- Prevention
- A written plan
- Prepare- training, handling, storing, shipping



Is Your Facility Prepared to Manage Asbestos Waste?

- Do you know Your BMPs?
- Do you Have PPE? respirators/
mask, clothing, footwear
- Are you Familiar with Rules?
-which ones are
applicable?



What Training Do I Need if I am to Handle Asbestos?

Env-Sw 901.08

Personnel handling asbestos must be trained and equipped as required by 29 CFR 1910 (federal) and Env-A 1800 (state)



Env-Sw 901 Asbestos

Env-Sw 901.01

What do these rules apply to?

- Friable and Non- Friable Asbestos Waste
- Material that is potential asbestos (visual, form, function)
- Wastes and materials combined with asbestos waste
- From point of origin (generator) to disposal



Your Facility Must Prevent Releases



How is Asbestos Waste Treated to Prevent Releases?

- Quarantine the area/pile
- Spray with water
- Cover so it cannot become airborne
- Any other equivalent method



How To Package and Label Asbestos Prior to Storing, Transporting, or Disposal

Env-Sw 901.03

- Treat Friable: Spray water, cover or seal
- Bags: 6 mil (or equivalent)/one time use



Where/How Can Asbestos Waste be stored?

- In area restricted from public access
- Protected from elements (wind/water)
- Regularly Monitored (assures site security)
- Posted with signs

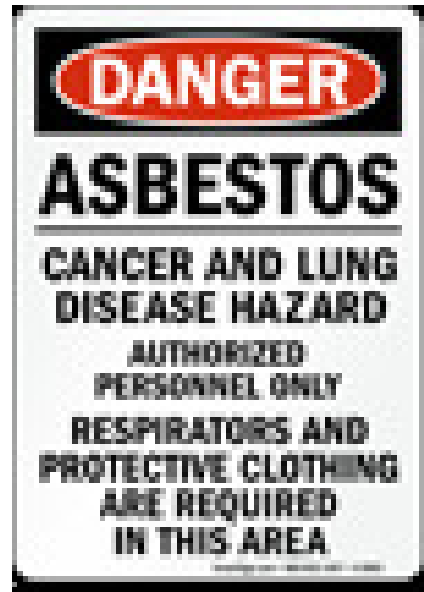


Env-Sw 901.02 (d)

What Needs to be Posted?

Env-Sw 901.02 (d)(4)

- Danger
- Asbestos Waste Storage Area
- Dust, cancer, and lung hazard
- Authorized personnel only



Who Needs to be Notified?

Env-Sw 901.02(e)

Local Fire Officials

- You have asbestos
- Where it is located



Why Notify?

So they can be prepared for potential hazards, in case of a fire

Where Can it be Dispose of?

Only to a landfill facility authorized to receive asbestos waste Env-Sw 901.04



What Records are Needed When Transporting?

Env-Sw 901.06

- Waste shipment records must accompany all asbestos waste when transported (40 CFR 61)
- Comply with USDOT regulations
- Notify the landfill prior to delivery

The image shows a 'Manifest and Asbestos Waste Shipment Record' form. The form is filled out with handwritten information. The sender is 'RED Technology LLC' and the receiver is 'RED Technology LLC'. The date is '03/03/2018'. The form includes fields for 'Manifest No.', 'Date of Shipment', 'Sender Name', 'Receiver Name', 'Waste Description', and 'Quantity'. There are also sections for 'Signature of Sender' and 'Signature of Receiver'. The form is a standard document used for tracking hazardous waste shipments.



Final Disposal of Asbestos (LF)

Env-Sw 901.04

- Sent to an authorized landfill (permit)
- Treated and packaged properly
- LF must be properly equipped and staffed (PPE/ trained staff/ equipment for wetting and decon)
- Prepare disposal area –place and cover immediately/ must prevent releases
- Non-rigid containers must be disposed if exposed
- Cover immediately (3 feet waste/ 18 in. soil)
- Keep records that identify area (map-location, depth, area, quantity)

What if I Have a Spill (> 1 lb, friable)?

Env-Sw 901.07(a)

- Must report it Immediately: NHDES Air Resources, Department of Safety, National Response Center





What's In Your Operating Plan?

Can the facility accept asbestos?

- List authorized and prohibited waste

How is it managed?

- Waste acceptance /rejection procedures

Is there a plan?

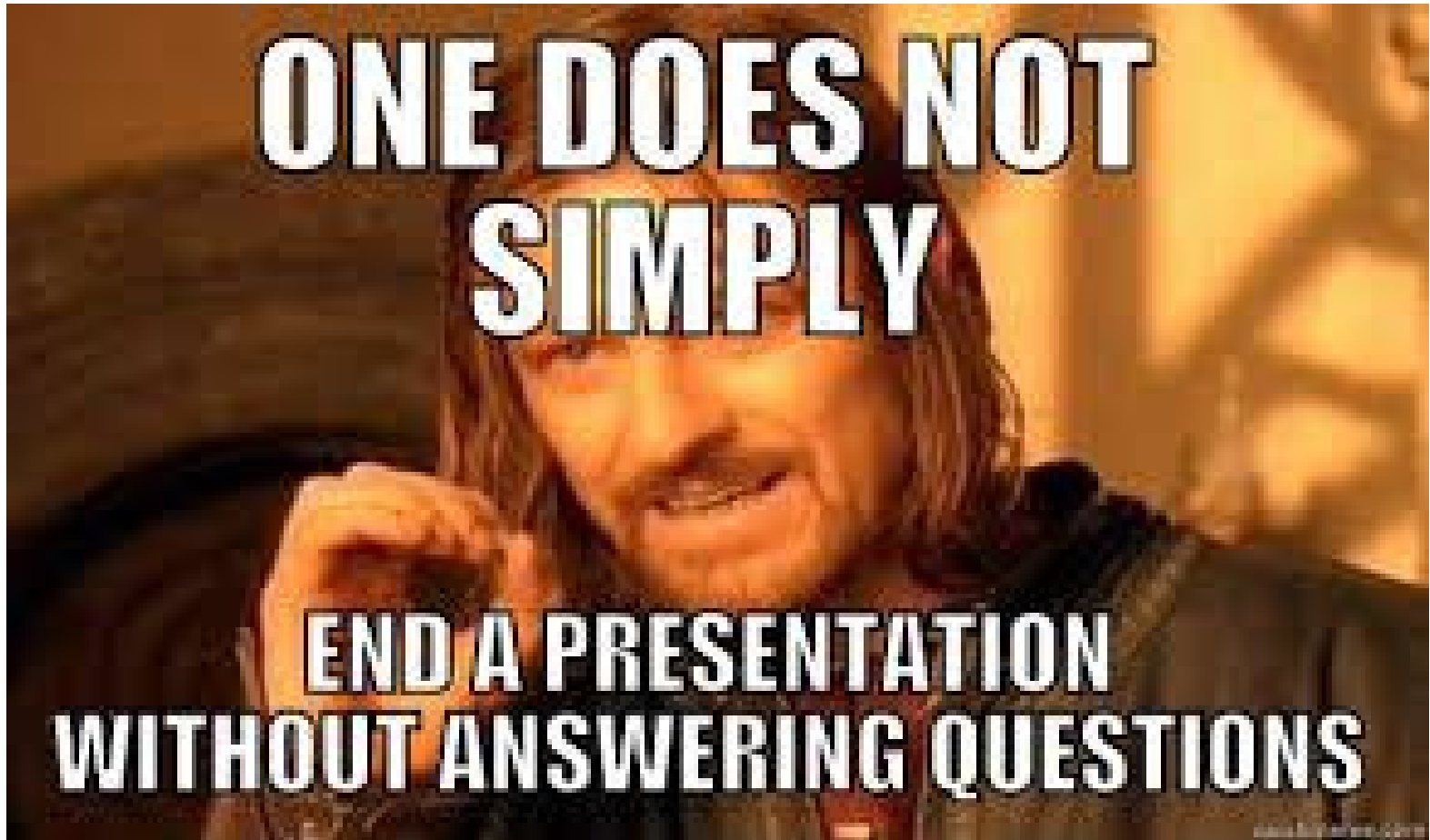
- Contingency plan/ Training

Where is it shipped? Where does it go?

- Disposal options

What records/reporting is need?

- Shipment papers/ AFRs/ Inspections



Shipping Asbestos to an Authorized Destination

Thomas E Livingston
NHDES Air Division





Asbestos

PREPARING A SHIPMENT FOR FINAL DISPOSAL

Standard Waste Bag

- OSHA Warning
- DOT Information
- Generator Label



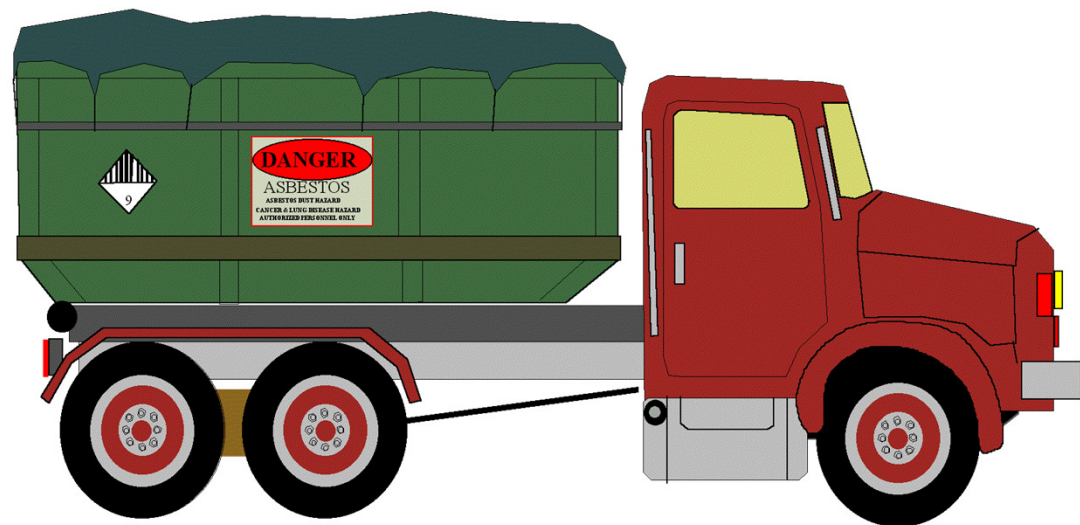
Packaging

- Non-Bulk Packaging
- Asbestos bags, Fiber drums, Gaylords, other leak proof containers usually used for small quantities



Bulk Packaging

Placing waste directly into lined transport vehicles such as dumpsters, dump trucks, dump trailers. Liner must be **leak proof** and be a minimum of 20 mil thickness of polyethylene or its functional equivalent.



Transportation Documentation

- USEPA: Waste Shipment Records
- USDOT: Waste Shipping Papers



LAWSUIT

A photograph showing a person's hands holding a white document. The word "LAWSUIT" is printed in large, bold, black capital letters on the document. The person is wearing a dark suit jacket and a white shirt cuff is visible. The background is a blurred office setting.



Asbestos

RECORDKEEPING AND REPORTING

The Waste Shipment Record

- ✓ WHO OWNED THE ASBESTOS?
- ✓ WHERE DID IT COME FROM ?
- ✓ WHO REMOVED AND PACKAGED IT?
- ✓ WHO TRANSPORTED THE ASBESTOS?
- ✓ WHO IS RECEIVING THE ASBESTOS?

WASTE SHIPMENT RECORD				
GENERATOR (Retain copy of form)	1. <u>Work site:</u> Name: Mailing Address: City/State/Zip:		<u>Owner's Name</u>	<u>Owner's Telephone #</u>
	2. <u>Remover's name and address:</u> Name: Mailing Address: City/State/Zip: He-P 5000 License #:		<u>Remover's Telephone #</u>	
	3. <u>Waste Disposal Site (WDS), meaning the facility that will receive the waste:</u> Name: Mailing Address: City/State/Zip: Physical Location:		<u>WDS Telephone #</u>	
	4. <u>Name and address of responsible agency:</u> NH Dept. of Environmental Services, PO Box 95, 6 Hazen Drive, Concord, NH 03302-0095			
	5. <u>Description of materials:</u> Name: Asbestos Division Class #: 9 Identification #: NA2212 Packing Group #: III Reportable Quantity (RQ): 1 lb (one pound)		6. <u>Containers</u> No. Type	7. <u>Total quantity (m³ or yd³)</u>
8. <u>Special handling instructions and additional information (provided by generator):</u>			<u>Emergency Telephone #</u>	
9. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.				
<u>Printed/typed name & title</u>		<u>Signature</u>	<u>Month</u>	<u>Day</u> <u>Year</u>
TRANSPORTER (Retain copy of form)	10. <u>Transporter 1 (Acknowledgment of receipt of materials)</u>			
	<u>Printed/typed name & title</u>		<u>Address and telephone #</u>	
	<u>Signature</u>		<u>Month</u>	<u>Day</u> <u>Year</u>
	11. <u>Transporter 2 (Acknowledgment of receipt of materials)</u>			
<u>Printed/typed name & title</u>		<u>Address and telephone #</u>		
<u>Signature</u>		<u>Month</u>	<u>Day</u> <u>Year</u>	
DISPOSAL SITE (Retain copy of form & return original to 2 above)	12. <u>Discrepancy indication space:</u>			<u>Rejected:</u> Yes <input type="checkbox"/> No <input type="checkbox"/> <u>Destination:</u>
	13. <u>Waste disposal site owner or operator:</u> Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.			
	<u>Printed/typed name & title</u>		<u>Signature</u>	<u>Month</u>



Any Questions?

THANK YOU

It is a **Group Effort!**



Outlining & Implementing an Asbestos Response Plan

Group Activity led by your instructors to assist you in developing an asbestos response plan that can be added to your Operations Plan required through your permit.



Hint

This is what
NOT to do!



Asbestos



EDUCATION & RECAP

A photograph of a construction site. In the foreground, there is a dirt ground with a yellow caution tape stretched across it. A sign with the word 'ASBESTOS' is visible on the ground. In the background, there are several large, green, rectangular structures, possibly storage containers or parts of a building under construction. The sky is overcast.

Problems Can (& WILL) Result When

- A homeowner or contractor who is not “Competent” conducts the inspection.
- A homeowner or contractor who is not knowledgeable removes the Asbestos.
- The inspector is not able to see the ACM during the pre-demo inspection.



BMP - Asbestos Waste

Ask the Resident/Contractor:

- Where did the waste material come from?
- Was an asbestos survey completed before beginning the demolition/renovation project?
- If so, was all asbestos properly removed and disposed of before bringing the waste to the transfer station?
- How old was the building from which the waste came from?

Education for Residents

THE DANGERS OF **ASBESTOS** IN YOUR HOME

Asbestos is a naturally occurring material that is used frequently in construction. However, when asbestos is damaged and fibers are released into the air, they pose a **health risk**.

Asbestos can cause
**asbestosis,
mesothelioma,
and lung cancer.**

Asbestos can be found in up to 4,000 different materials including:

Exterior surfaces
(Window putty, roof shingles, transite siding, and roof felt)






Heating and Ventilation
(Cover gaskets, pipe insulation, and duct coverings)



Interior Surfaces
(Popcorn ceilings, woodstoves, wall texture, and acoustical tiles)

Flooring (Vinyl asbestos sheets, mastic, tiles, and undersheeting)

Before renovating your home, it is important to make sure you aren't disturbing any asbestos. You can do this by taking a sample of any suspicious materials and sending it to a lab to be tested. Follow these steps to take a sample:

1.  **Wet down material** lightly before taking a sample.
2.  Be careful to **not disturb** any more material than necessary to minimize risk.
3.  Collect a thumb-sized sample and place it in a **small glass jar or plastic bag**.
4.  **Clearly label** where and when the sample was taken, as well the color and type of material.
5.  Send the sample to a **lab for analysis**. Make sure to take a sample of all suspicious materials.

If you're planning a renovation or demolition and don't want to take samples, you can hire a **certified inspector to survey your home**.

This survey will identify **asbestos-containing materials** that will be disturbed during the renovation or demolition, so proper techniques can be applied to **minimize risk**.

For a list of certified asbestos inspectors, contractors, and labs, call LRAPA at (541)-736-1056, visit www.lrapa.org or email us at asbestos@lrapa.org.



Asbestos in the Home

*Asbestos usage has declined dramatically and in several cases, its usage has been banned. As a result, older homes are more likely to be at risk.



(A) Exterior Surfaces

1. Roof Felt and Shingles
2. Window Putty
3. Cement Asbestos Board Siding / Undersheating

(B) Insulation

1. Vermiculite Insulation
2. Batt Insulation

(C) Flooring

1. Vinyl Asbestos Flooring Material

(D) Interior Surfaces

1. Sprayed-on Ceiling Material
2. Textured Paint

(E) Boilers, Heating and Piping

1. Heat Source Covering
2. Door Gaskets
3. Duct Lining
4. Wall Gaskets and Lining

(F) Electrical Equipment

1. Recessed Lighting
2. Wiring Insulation
3. Fuse Boxes
4. Outlets

(G) Appliances

1. Refrigerators / Freezers
 2. Range Hoods
 3. Woodstoves (Heat Reflectors)
 4. Clothes Dryers
- * Not Shown: Dishwashers, Toasters, Slow-cookers, Portable Heaters, Hair Dryers

(H) Miscellaneous

1. Fireplace Logs

(J) Automotive

1. Brake Linings, Gaskets, and Clutch Facings



If you have any concerns:

- Do not accept the waste.
- Handout NHDES' Asbestos Brochure.
- Direct them to Contact NHDES for assistance.

...and above all, remember...

