

**Minutes: September 13, 2004**  
**Children's Environmental Health and Protection Advisory Council**  
**Maryland Department of Environment (MDE), 1800 Washington Blvd., Baltimore, MD**

**Members Present:** Barbara Bice, Maureen Edwards, Peyton Eggleston, Benjamin Gitterman, Phil Heard for Richard Eskin, David Jett, Judy LaKind, Mary Ellen Setting

**Guests:** Monique Falconer, Ed Crow, Betty Dabney, Tracy Wolff

**Review & Approval of Minutes: July 12, 2004:**

The minutes were reviewed. The Council was advised to send any changes to Mary Johnson.

**Regulation Review**

No new regulations to review

**OLD BUSINESS**

**Road Dust Control**

Monique Falconer, a University of Maryland medical student with an M.S. in toxicology, presented a summary of dust control and the major points were:

Dust suppression methods are used to control and prevent the dust from becoming airborne. The risk to human health and the environment depends on many factors, including the hazardous characteristics of products, application practices, and the environmental characteristics of the site. In 1982, the EPA closed down the town of Times Beach, Missouri after discovering dangerous levels of dioxin after waste oil was sprayed on its roads. It was one of the most extensive cleanups in EPA Superfund history. In Maryland dust suppression measures are required during several different activities; for example, mining and construction and these activities are regulated under the following:

Maryland Department of the Environment, Air Quality COMAR 26.11.06.03 Particulate Matter.  
Disposal Of Controlled Hazardous Substances COMAR 26.13.10.01  
Surface Coal Mining And Reclamation COMAR 26.20.02.13. COMAR 26.20.23.01  
Maryland Department of Agriculture, Soil and Water Conservation COMAR 15.20.01.04

In Maryland, water is primarily used as a dust control measure. The law specifically prohibits the use of waste oil. Pennsylvania's Conservation Commission's (SCC) Dirt & Gravel Road Maintenance Program was created to deal with the sediment and dust pollution generated on sections of more than 17,000 miles of unpaved roads in Pennsylvania.

There was further discussion by the Council on dust control issues. HUD has reconstruction and remodeling education for construction workers to help control lead dust. There are lead dust control regulations that were not cited here. The health effects of dust were discussed including visibility problems for automobile drivers, respiratory symptoms, and effects resulting from the chemical properties. Benzene was found in one compound in the past. MDE is not aware of any health problems in Maryland from dust control efforts. It is possible that the higher humidity helps keep dust from creating problems. A summary provided by Ms. Falconer was distributed at the meeting and is attached.

**Infrastructure Study**

The infrastructure report is in the editing stage. The study included two steps: a review of the publicly available information and approximately 25 interviews with agency workers. It addressed three topics, mercury, lead, and asthma. Efforts are underway in editing to ensure completeness.

Several members took copies to review and suggest edits: Gitterman, Garretson, Bice, Setting and LaKind. Suggested changes should be sent to Dr. Edwards.

## **ANNOUNCEMENTS**

### **Asthma Grant**

DHMH received a new asthma grant from the CDC - \$350,000 per year for three years. The Asthma group is working on implementing the asthma plan and finalizing the structure of the asthma coalition. The asthma report and plan are on the website, [www.marylandasthmacontrol.org](http://www.marylandasthmacontrol.org). There is an environmental component to the plan and DHMH is meeting with partners to discuss future work.

### **Maryland Academy of Family Practice (MDAFP)**

The MDAFP devoted its most recent issue of its journal, *The Maryland Family Doctor*, to environmental health issues. Included in the issue were articles on lead poisoning screening, environmental tobacco smoke, and disparities in pollution exposures. The MDAFP allowed copies to be given out to council members. The edition can be accessed via the web: [www.mdafp.org](http://www.mdafp.org).

### **Information about Recent and Future Conferences/Meetings**

#### Partnership for Children's Health and the Environment

Mt. Washington, MD, April 26-27, 2004

Mary Johnson attended this meeting and notes were distributed to the council.

#### Diesel Engine School Bus Retrofit Technology Workshop, April 29, 2004

Dr. Edwards presented health issues related to diesel exhaust. The purpose of the meeting was to encourage contractors/school districts to develop anti-idling policies and encourage retrofitting of buses. MDE with DHMH submitted a grant to gather information and raise awareness of these issues. There were questions about anti-idling policies and laws in Maryland and the availability of funds for retrofitting. A member commented that Oregon had retrofitted all their buses. There are various factors that increase diesel exhaust exposure to children: open windows, length of ride, traffic, idling, and height of children.

#### The Mid-Atlantic Conference on Children's Health and the Environment,

Washington, D.C., September 11, 2004

Several members/council affiliates attended, including Phil Heard, Tracy Wolff, and Betty Dabney. This was the third year of the conference. Major topics included bioterrorism, mercury and lead. Breakout session topics included indoor air quality, successful programs, environmental influences related to neurodevelopmental outcomes, mercury, and asthma. Dr. Gitterman expressed a desire to have the conference in Maryland in the future. Dr. Edwards discussed the possibility of combining the conference with the previously planned 2005 CEHPAC Indicators conference.

#### American Public Health Association Annual Conference, to be held in November 2004

An abstract was submitted by Drs. Edwards and Heard about CEHPAC. The presentation will feature the work of CEHPAC and a summary of children's environmental health programs in other states.

### **Council Membership**

There are several openings. There is a need for a health economics expert. Please forward any suggestions for members to Dr. Edwards.

### **Annual Report**

The annual CEHPAC report is due to the legislature by December 1, 2004.

### **Children's Health Month, October 2004**

Mary Johnson has received materials and will distribute these in the near future. In the past activities have included school related information and a calendar of activities.

### **Lead Poisoning**

The MDE Lead Program has developed a 2010 Lead Elimination Plan. They receive the CDC lead grant. The goal of the plan is elimination of lead poisoning. DHMH has recently updated the targeted screening program. A packet of information was sent to providers. Announcements were placed in the MDAFP newsletter and the MD Academy of Pediatrics newsletter. The list of ZIP codes for targeted screening are available on the DHMH website.

### **Indicator Report**

The Indicator Subcommittee has been working on the development of indicators for the report. They began with a long list of indicators extracted from various reports from other agencies and organizations and have focused on paring down the list. The Subcommittee has met with several different groups to help select appropriate indicators. The indicators were discussed with representatives from MSDE and they have been very helpful in identifying available data. There will likely be a neurodevelopmental indicator from the MSDE data sources. There was a meeting with the lead program staff and they provided useful advice and data to help in the selection of lead indicators. Dr. Edwards gave a presentation to the Pesticide Council and they provided feedback on pesticide indicators. The Subcommittee has been struggling with ways to represent data on disparities when racial/ethnic data and socioeconomic data are unavailable in the specific dataset.

Several Subcommittee members met with the EPA subcontractor, ICF, to discuss the possibility of their involvement in the development of indicators and the accompanying narrative. They are ready to go forward with some work but are awaiting approval from EPA.

The list of indicators was distributed to the attendees. Dr. Heard reported on the progress of the Commission on Environmental Justice and Sustainable Communities regarding community health indicators. The CEHPAC Subcommittee has been working with JHU researchers in the development of demographic data and indicators for newborn thyroid hormone levels. There was significant discussion about environmental health issues related to schools. There was discussion about: age of schools as it relates to lead, mold issues in schools, tools for schools, other indoor air quality issues, and the MSDE facilities survey. There was discussion about the need for data on school environmental health issues including: pesticide application, protocols, mold, and effectiveness of environmental health interventions. The Council discussed the possibility of a regular school survey and the availability of funds for this. The Council agreed that these are very important issues because children spend a large portion of time in schools. Was this in the CEHPAC strategic plan? There is a statewide School Health Council and there was interest in

discussing these issues with that Council. Is there a working group to discuss indoor air quality in schools? The statewide IAQ report excluded children/schools. Ms. Bice reported that there are guidelines from MSDE for components of IAQ. She will provide these materials to the Council. There are specific guidelines for pesticide application and lead abatement.

Future Meetings:

Next meeting: November 1, 2004: hazardous waste sites/land us will be discussed.

Possible topics for presentation at future meetings: environmental justice, IAQ in schools with discussion by individuals from counties working on this issue: Harford, Anne Arundel, or Montgomery Counties.

# D U S T S U P P R E S S I O N

## What is Dust Suppression?

Dust suppression methods are used to control and prevent the dust from becoming airborne. They are typically used on construction and mining sites, landfills and unpaved roads. Suppressants are used to change the physical properties of soil by, forming crusts, agglutinating particles or forming protective surfaces. Mechanical methods include barriers and collection systems. Dust control methods often overlap with erosion prevention practices, like revegetation and mulching.

## What are the Human Health and Environmental Impacts of Chemical Dust Suppressants?

The risk to human health and the environment depends on many factors, including the hazardous characteristics of products, application practices, and the environmental characteristics of the site. In areas where surface water or ground water is nearby and where stream flows are very low, adverse environmental outcomes are possible. Many of the chemical dust suppressants used are waste products of manufacturing processes and are proprietary to the manufacturer, so the Material Safety Data Sheets may not have complete chemical composition. Toxins may be present and could have deleterious effects on human health and the environment. Testing prior to use is costly and not usually performed.

## Have there been any Adverse Outcomes with Dust Suppression Practices?

In 1982, the EPA closed down the town of Times Beach, Missouri after discovering dangerous levels of dioxin. In previous years, the town regularly had dioxin contaminated waste oil, sprayed on its streets and parking lots to control dust. When the contamination was discovered, the EPA had to permanently relocate more than 2,000 people and demolish all of the homes and businesses. It was one of the most extensive cleanups in EPA Superfund history. As a result, waste oil has been prohibited for use in dust suppression.

## What are some Specific Dust Control Measures?

Table 1. Commonly used dust suppressants (Modified from Expert Panel 2004)

Suppressant type	Products	Notes
- Water - Salt/Brines	- Fresh/salt and reclaimed water - Calcium chloride, magnesium chloride	- Health/environmental impacts of reclaimed water - Potential chloride ion to ground and surface water and soils, browning of trees, stunted vegetation - Potential concern with spills
- Non-Petroleum based orgs - Petroleum based orgs. - Synthetic polymer products - Electrochemical products - Clay additives - Mulch and fiber additives	- Ligninsulfonate, veg. oil, molasses animal fats - Asphalt emulsion, dust oils, cutback solvents - Polyvinyl acetate, vinyl acrylic - Enzymes, ionic products, sulfonated oils - Bentonite, montmorillonite - Paper mulch/gypsum, wood fiber/brome seed	- Resist being washed away, contaminants? - Specific compositions are proprietary info of manufacturers - Effectiveness based on clay mineralogy of soil - water quality impact unknown - environmental impact unknown
<b>Other suppression methods</b>		
- Vegetation - Barriers - Tillage	- Solid fences, crate walls, bales of hay	- Cover bare soil and to prevent wind erosion - Control air currents and blown soil - Roughens the soil and, brings clods to the surface, an emergency measure to be used before wind erosion starts
- Collection systems	- exhaust hood, fan/motor	- Dust is transported to a collector; storage and disposal of collected dust should be carefully considered so that it does not become a source of fugitive dust

## What are Maryland's Regulations?

In Maryland dust suppression measures are required during several different activities; for example, mining and construction and these activities are regulated under the following:

Maryland Department of the Environment

-Air Quality

COMAR 26.11.06.03 Particulate Matter. D. Particulate Matter from Materials Handling and Construction. A person may not cause any material to be handled, transported, or stored, or a building, its appurtenances, or a road to be used, constructed, altered, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. These reasonable precautions shall include, but not be limited to...

- (1) Use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;
- (2) Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces...
- (3) Installation and use of hoods, fans, and dust collectors to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting...
- (4) Covering, at all times when in motion, open-bodied vehicles transporting materials likely to create air pollution...
- (5) The paving of roadways and their maintenance in clean condition;
- (6) The prompt removal from paved streets of earth or other material....

-Disposal Of Controlled Hazardous Substances

COMAR 26.13.10.01 D. Standards Applicable to Users of Materials That Are Used in a Manner That Constitutes Disposal. (2) The use of waste or used oil or other material, which is contaminated with a hazardous waste, for dust suppression or road treatment is prohibited

-Surface Coal Mining And Reclamation

COMAR 26.20.02.13. Description of Proposed Mining Operations. G. An air pollution control plan which includes the following: 1) A plan for fugitive dust control practices; and 2) An air quality monitoring program, if required by the Bureau, to provide sufficient data to evaluate the effectiveness of the fugitive dust control practices to comply with applicable federal and State air quality standards.

COMAR 26.20.23.01. Air Resources Protection. A. An exposed surface area shall be protected and stabilized to effectively control erosion and air pollution... B. Fugitive dust control measures may include, but not be limited to 1) Periodic watering of unpaved roads; 2) Chemical stabilization of unpaved roads... 3) Paving of roads; 4) Prompt removal of... dust-forming debris from roads and frequent scraping and compaction of unpaved roads... (5) Restricting the speed of vehicles... (6) Revegetating, mulching... (7) Restricting... vehicles on other than established roads; (8) Minimizing the area of disturbed land; (9) Prompt revegetation... (10) ...wetting of disturbed material...; (11) Control of dust from drilling, using water sprays, hoods, dust collectors, or other controls; (12) Reducing the period of time between disturbing the soil and ... stabilization; (13) Restricting fugitive dust at spoil and coal transfer and loading points with water sprays; and (14) Enclosing, covering, watering, loaded haul trucks...

Maryland Department of Agriculture

-Soil and Water Conservation

COMAR 15.20.01.04 Agricultural Drainage Project Plans. A. 2) The construction or reconstruction plan should include... (c) construction methods including: (ii) Measures to limit disturbance of the soil; (iv) Temporary or permanent soil stabilization techniques for channel banks, berms, and soil disposal sites.

### What are Maryland's Dust Control Practices?

According to the Department of the Environment, Air and Radiation Management Administration, there are required permits for activities that might cause dust release, that address control standards to be met for that activity. In Maryland, water is primarily used as a dust control measure at temporary construction sites, while at permanent sites roadways are often paved. The law specifically prohibits the use of waste oil. Inspections are made in response to complaints.

### What has Worked Elsewhere?

Pennsylvania's Conservation Commission's (SCC) Dirt & Gravel Road Maintenance Program was created to deal with the sediment and dust pollution generated on sections of more than 17,000 miles of unpaved roads. (Pennsylvania Code Title 75, Section 106). The program provides \$4 million annually from the state Motor License Fund to the State Conservation Commission for distribution to districts owning sections of dirt or gravel roads identified as sources of dust pollution. \$1 million per year is allocated to the state Department of Conservation of Natural Resources (DCNR) for on Bureau of Forestry unpaved roads; goals and objectives include:

Establishment of a Quality Assurance Board to assist district boards with distribute funds

1. A two-day Environmentally Sensitive Maintenance (ESM) training course to guide maintenance
2. Keep the program as simple as possible for the users
3. Encouraging community interest, understanding and support
4. Further development of applied technology

#### References:

MDE, January 2004. Maryland erosion and sediment control guidelines for state and federal projects. Available at: <http://www.mde.state.md.us/assets/document/State%20Erosion%20Control%20Guidelines.pdf>

Penn State Center for Dirt and Gravel Roads Studies, July 2002. 2001-02 Report: *Dirt and gravel roads maintenance program*. Available at: <http://www.dirtandgravelroads.org/>

U.S. Environmental Protection Agency (USEPA), June 2004. *Superfund Redevelopment Program: Times Beach One page summary*. Available at: <http://www.epa.gov/superfund/programs/recycle/success/1-pagers/timesbch.htm>

USEPA, March 2004. *Potential Environmental Impacts of Dust Suppressants: Avoiding another Times Beach*, In: An Expert Panel Summary, May 30-31, 2002, Las Vegas, Nevada. Available at: <http://www.epa.gov/nerlesd1/cmb/pdf/dust.pdf>

USEPA, September 1999. *Storm water management fact sheet: Dust control*. EPA 832-F-99-003. Available at: <http://www.epa.gov/owm/mtb/dustctr.pdf>

