City of Philadelphia Department of Public Health
Air Management Services Dust Control Guidance
for Construction, Renovation, and Demolition Activities

Statement of Basis and Purpose

Under the Philadelphia Code, the City of Philadelphia Department of Public Health Air Management Services (AMS) Division is empowered to regulate the emission of air contaminants within the city. This Dust Control Guidance Document establishes recommended procedures and work practices to control the emission of dust generated from construction, renovation, demolition (CRD), and other related activities. Such dust has the potential to enter the ambient air and cause public health concerns.

The dust generated from CRD activities may contain significant levels of silica, (also known as quartz), lead, asbestos, and fine particles. Inhalation of these contaminants has been linked to respiratory illnesses, decreased lung function, and heart attacks, among other adverse health impacts. In particular, inhalation of silica dust can increase lung cancer risk and cause silicosis, a lung disease with no cure. Inhalation of asbestos dust is associated with cancer and asbestosis, a restrictive lung disease. Similarly, even low levels of exposure to lead dust can result in long-term harm to children and the unborn, including lowered IQ, behavior problems, learning disabilities and neurologic, cardiovascular, immune and endocrine problems. Studies have shown that there are significant and potentially harmful increases in ambient dust lead levels within a two-block area after demolition and debris removal.

Wetting, or use of water sprays and other devices to apply water to the area where dust is being generated, is one commonly used and effective method for dust control. In most CRD activities, wetting is recommended as a primary dust control measure, provided wetting is practical and will not damage equipment or create a safety hazard. The wetting method of dust control should include an adequate and continuous supply of water and applied by suitable water sprays or jets where dust is generated. The water sprays or jets should be designed to break the water stream into small droplets to reduce fugitive dust as much as possible. Suitable drainage should be provided for the removal of water and sludge that drain from the operation. If wetting is not possible or practical, due to below-freezing outdoor temperatures or other limitations, other steps should be taken to minimize dust from the CRD activity.

Vacuum systems, also known as local exhaust ventilation (LEV) systems, offer another effective way of controlling dust emissions. Power tools can be equipped or used with vacuums and dust control devices that assist in capturing dust produced during grinding and sawing operations. Depending on the power tool, dust collection methods may include a vacuum hose and a dust shroud. All dust control devices should be operated according to manufacturer's recommendations and specifications. Clouds of dust being emitted from the work area are a sign that the vacuum and shrouds are not functioning properly.

Measures used to capture or suppress dust at the point of generation are the most effective and should be used as the primary means of controlling and reducing dust levels. Capturing dust at the source prevents dust from becoming airborne after being generated or when it reenters the air after settling on surfaces.

Recommended Dust Control Measures and Work Practices for CRD Activities

1. Notification in anticipation of CRD activities:

    a. At any CRD site, both the owner of the site or building and the contractor performing such activities are jointly responsible for providing written notice to residents on site and any occupants within 75 to 400 feet of where the activity will be conducted, depending upon the scale of the CRD activity.

    b. Such notice should be posted at prominent public places and given no later than 48 hours before such CRD dust-producing activity will begin. The notice should instruct residents to keep windows closed if possible and take other precautions to avoid tracking dust indoors. The notice should include the contact information of the CRD operator/contractor, the start date/time of the operation, and the duration of the operation (a sample Notice is provided in Appendix A).

    c. In the event of an emergency (e.g. demolition of structure or property deemed unsafe or in imminent danger of collapse by the Department of Licenses and Inspections), notice as recommended above should be given as soon as reasonably possible before the start of CRD activities.

2. Signs and security for CRD sites:

    a. CRD sites / work areas should be secured, through the installation of fencing, locked gates, or / other measures to prevent entry by unauthorized personnel.

    b. CRD site / work areas should be marked with signs indicating that dust producing activities that may prove detrimental to human health are being conducted on site, and describing how dust will be controlled and the agency and phone number to contact if improper control practices are observed.

3. Cutting, sawing, and grinding masonry and other building materials (e.g. concrete, block, stone, wood, etc.) with power tools:

    a. Effective methods of capturing or suppressing dust generation at the source must be employed when cutting, sawing, grinding or mechanically breaking or disturbing concrete and masonry. Adequate wetting of the materials or structure surfaces should

be deployed prior to the operation. During the operation, continuous wetting or vacuum systems should be used as the primary means of minimizing dust emissions. Wet saws should be used to minimize dust or equipped with vacuum assisted shrouds.

b. If necessary, the work area may be cordoned off using a barrier, provided this does not pose any additional safety hazards associated with wind or worker safety.

4. Mechanical/manual (non-blasting) demolition, renovation:

   a. Water should be deployed before, during and after any demolition or renovation activity.

5. Debris removal:

   a. Debris should be wetted at the point of discharge and before loading to a truck or vehicle.

   b. When debris is dropped from a height above the ground or above the level where the debris container/bucket is located, dust-tight debris chutes should also be used.

6. Transport and disposal of debris and material**:**

   Debris and dusty materials should be wetted when possible, and covered or enclosed during transport.

7. Vehicle speed and trackout**:**

   a. Unpaved roads should be adequately wetted to prevent fugitive dust emissions from occurring. Vehicle speed should be limited to 15 mph on unpaved haul routes on and off the work site within City and County limits. The contractor/operator of a CRD site should install vehicle wheel wash systems, rumble grates, gravel pads, and/or paved driveway at the exit to minimize vehicle trackout by the wheels.

8. Storing, stockpiling, and handling construction materials:

   a. Use water to moisten the piles, or use tarps or other covers. Before and during the loading and unloading of dusty materials, apply water on the materials.

9. CRD site cleaning:

   a. Use wet sweeping and / or vacuums to minimize the dust on the CRD site, and on streets/sidewalks on the CRD Site's perimeter. Air blowing devices (e.g. leaf blowers) should not be used to remove mud, dirt, or debris in and or around the CRD site.

10. Abrasive blasting, sandblasting, and chemical washing of exterior surfaces:

    a. Wet abrasive blasting should be used when feasible. If dry abrasive blasting is necessary, enclosed work areas and adequate ventilation such as hoods or vents should be used. For any surface blasting, chemical washing and similar operations, appropriate dust control measures described above should be used. In addition, shrouding and/or containment may be needed as a secondary or complementary measure for enhanced dust control.

11. Removal or remediation of lead paint on structure surfaces:

    a. Recommended work practices include, but are not limited to:

        i. Removal of lead paint should only be done via wet hand sanding, wet scraping, power sanding with sanders equipped with HEPA filters, or with low temperature (< 1100 Degrees F) heat guns followed by hand scraping. Surfaces should be misted with water prior to operation.

        ii. The work area where lead paint removal is to occur should be segregated so that no dust or debris can leave the work area.

        iii. All doors, windows, heat/ air vents and air intakes within 20 feet of the work area should be closed and sealed until the lead removal operations are completed.

        iv. The ground immediately under the surfaces where lead paint is to be removed should be covered with plastic sheeting or other disposable nonporous material extending to collect falling paint debris. Such plastic sheeting should extend at least 10 feet beyond the perimeter of the surfaces being abated.

Special Note: Other Applicable Requirements

The work practice recommendations contained in these guidelines are intended to minimize and otherwise contain dust generated during CRD activities. Adoption of these recommendations does not ensure compliance with other requirements that may apply. Such additional requirements include, but are not limited to:

Lead Remediation: The United State Environmental Protection Agency (USEPA), and the Pennsylvania Department of Labor and Industry enforce separate Federal and State requirements pertaining to certain renovation repair and painting projects that will disturb

lead paint at certain homes, child care facilities, and pre-schools. Please see the following websites for more information:

USEPA Lead Renovation, Repair, and Painting Program Website:
http://www2.epa.gov/lead/renovation-repair-and-painting-program

Pa. Depart of Labor and Industry Lead Occupations and Other Requirements Website:
http://www.portal.state.pa.us/portal/server.pt?open=514&objID=553491&mode=2

Waste Water: The City of Philadelphia Water Department has established separate requirements governing the disposal or discharge of waste water generated from CRD work sites. For more information please contact the Water Department Industrial Waste Unit by phone: 215-685-6236, or visit their website:
http://www.phila.gov/water/wu/wastewater/Pages/IndustrialWaste.aspx

Asbestos: AMS enforces City and Federal requirements pertaining to the remediation, removal, and / or disturbance of asbestos materials. For more information please contact the AMS Asbestos Control Unit by phone: 215-685-7576, or visit their website:
http://www.phila.gov/health/airmanagement/AsbestosControl.html

Storage and Disposal of Construction and Demolition Waste: The Pennsylvania Department of Environmental Protection (PADEP) enforces state requirements governing the disposal, storage, and transport of construction and demolition waste. For more information please contact the PADEP, South East Regional Waste Management Program by phone: 484-250-5960, or visit their website:
http://www.depweb.state.pa.us/portal/server.pt/community/waste_management/14069

Appendix A
CRD Activity Notice Template

NOTICE OF POTENTIAL FUGITIVE DUST
From Construction/Renovation/Demolition Activities

Property Owner/Operator/Contractor (Name and Phone #):

Project Name and Address: _____

Brief Description of Work Activities and Dust Control Measures at the Work Site:

Start Date / Time of Activity / Duration (days):

The public should take precautions to reduce the effects of dust generated from the noticed activity (e.g. close windows if possible while dust generating activity is ongoing; wash hands and clothing after coming inside). Please report any generation of large amounts of visible dust from this work site to the Philadelphia Department of Public Health, Air Management Services at 215-685-7580 or 311.