

# Dust and Noise Monitoring Plan

For Demolition Activities at the Koppers Portion of the  
Cabot Carbon/Koppers Superfund Site, Gainesville, Florida

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Revision 0

## Introduction

This Dust and Noise Monitoring Plan (“Plan”) describes the procedures GeoTrans, Inc will use to conduct ambient dust and noise monitoring during demolition activities at the Koppers portion of the Cabot Carbon/Koppers Superfund Site (“Site” heretofore refers to the Koppers portion) located in Gainesville, Florida. The objectives of the Plan are (1) to document air quality and noise conditions before and during demolition activities at the Site and (2) ensure that adequate dust and noise controls are being implemented.

This Plan contains the following information:

- Air quality and noise parameters to be monitored;
- Equipment and methods for monitoring;
- Monitoring locations;
- Duration and frequency of monitoring;
- Data tracking system; and
- Action levels for implementation of additional dust and noise control.

## Air Quality and Noise Parameters

Ambient air quality and noise monitoring will be conducted at the demolition areas for the following parameters:

- Real Time Dust (RTD) – Particulate Matter less than 10 microns in aerodynamic diameter (PM<sub>10</sub>); and
- Real Time Noise (RTN) level in decibels using the A-weighted network (dBA) with slow meter response.

## Monitoring Equipment and Methods

The following equipment will be use for real-time measurement of perimeter and work zone particulate matter and noise monitoring:

- Thermo Scientific's Area Dust Monitor ADR-1500 (fixed dust monitoring stations at Site boundary);
- TSI's SidePak AM510 Personal Aerosol Monitor (portable dust monitoring); and
- Casella USA's CEL-360 Logging Dosimeter (portable noise monitoring). which meets the Type I requirements of American National Standard Specification S1.4-1971 for sound level meters.

GeoTrans will comply with the manufacturer instructions (Appendix A) for daily zero calibration to ensure data validity.

During monitoring, the equipment will be operated in accordance with the manufacturer instructions (Appendix A).

## Site Monitoring Locations

Two fixed monitoring locations (Station 1-North and Station 2-South) will be established along the west perimeter of the work area (**Figure 1**). RTD monitoring will be conducted at these locations to document conditions on Site near the adjacent residential area.

Portable dust and noise monitors will be used to take periodic measurements of noise and dust within/near work zones and along Site boundaries.

## Duration and Frequency of Monitoring

RTD and RTN monitoring will be conducted prior to the start of demolition activities to measure background levels of dust (PM<sub>10</sub>) and noise. The background monitoring will be conducted over a one- to two-day period.

RTD and RTN monitoring will be conducted on each day that demolition is conducted at the Site. Demolition operations are expected to occur over approximately 5 weeks in December 2010 and January 2011.

Monitoring periods for each day will correspond with demolition work hours. Daily monitoring periods may vary and the field operations leader (FOL) will control the operation of the monitoring equipment to coincide with demolition activities.

During each monitoring period (work day or background-period day), RTD recordings will be made continuously at the fixed perimeter monitoring stations. In addition, portable RTD and RTN monitors will be used at least three times per day to measure conditions around the work zone and at Site-perimeter locations to the north, east, and south during expected peak activities. Measurements will be made at times when machinery activity is relatively large and when structures are actively being demolished. The FOL will use a map and field log to document the location, time, and conditions of dust and noise readings made with the portable monitors.

At the conclusion of each daily monitoring event, the FOL will document all sampling activity in a daily log, on sample data sheets (Appendix B), and download electronic data from the RTD and RTN equipment.

## Data Tracking System

The downloaded data for each sample location will be designated to note date and location such as 12062010\_AirN (air sample at north sampling location on December 6, 2010).

In addition to the instrument data, each sample is to be recorded in the FOL's log book, which is for documenting daily monitoring activities and other information relative to on-site operations and conditions that may impact monitoring activities.

## Action Levels for Implementation of Additional Controls

The Occupational Safety and Health Administration (OSHA) has established the following relevant standards for PM<sub>10</sub> (respirable dust) and noise:

- The eight-hour time-weighted-average Permissible Exposure Limit (PEL) for PM<sub>10</sub> (respirable dust, particulates not otherwise classified) concentration shall not exceed 5 mg/m<sup>3</sup> in a work zone; the corresponding PEL for total dust is 15 mg/m<sup>3</sup>.
- Continuous noise shall not exceed 90 dBA expressed as an 8-hour time-weighted average and 115 dBA as a 15-minute Short Term Exposure Limit in a work zone (without the use of hearing protection).
- Impact or impulsive noise (defined as generally less than one-half second in duration and does not repeat more often than once per second) shall not exceed 140 dBA peak sound pressure level.

USEPA has established the following relevant standards for public/community exposure to dust (PM<sub>10</sub>) and noise:

- The 24-hour average PM<sub>10</sub> concentration standard is 150 µg/m<sup>3</sup>.
- The 24-hour exposure level for environmental noise (including community, industrial, traffic, aviation, construction, and indoor noise) which will prevent any measurable hearing loss over a lifetime is 70 decibels.

The City of Gainesville, Florida has a Noise Ordinance (Chapter 15 of the Code of Ordinances) which states that:

- A noise disturbance is sound that can be heard a minimum of 200 feet from the property line of the noise source;
- No continuous sound shall be permitted within the city which exceeds 90 dBA for 8 hours and 115 dBA for 15 minutes.
- A maximum impulsive sound level of 145 dBA cannot be repeated more than once in a 24-hour period. A sound level of 135 dBA cannot be repeated more than 10 times in a 24-hour period; and a sound level of 125 dBA cannot be repeated more than 100 times in a 24-hour period.
- Exemptions exist for persons exposed to sound levels in excess of the above if they are employed by the contractor causing or permitting the sound.
- Construction and demolition work is prohibited between the hours of 9:00 PM and 6:00 AM if it creates a noise disturbance across a real property boundary (except for emergencies or permitted work).

- The maximum sound level for commercial land use is 66 dBA in daytime and 60 dBA at nighttime, measured at a distance of 200 feet or more from the real property line of the source of the sound.

Additionally, to avoid potential nuisance complaints, the additional objectives for dust and noise control for this work will be to attain:

- Instantaneous  $PM_{10}$  concentrations less than  $2.0 \text{ mg/m}^3$  at the Site perimeter;
- Full-shift average  $PM_{10}$  concentrations less than  $0.150 \text{ mg/m}^3$  at the Site perimeter;
- Instantaneous continuous noise levels less than 85 dBA at the Site perimeter; and

Based on the objectives above, the following action levels are established for RTD and RTN readings:

- Perimeter RTD stations:
  - Instantaneous measurement of  $PM_{10}$  greater than  $2.0 \text{ mg/m}^3$
  - One-hour average measurement of  $PM_{10}$  greater than  $0.150 \text{ mg/m}^3$
  - Eight-hour average measurement of  $PM_{10}$  greater than  $0.150 \text{ mg/m}^3$
- Hand-held RTD monitor:
  - Instantaneous measurement of  $PM_{10}$  greater than  $2.0 \text{ mg/m}^3$
- Hand-held RTN monitor:
  - Continuous noise measurement greater than 90 dBA within active work zone
  - Impact or impulsive noise (less than 15 minutes duration) greater than 115 dBA within active work zone
  - Instantaneous measurement greater than 85dBA at the Site perimeter

If any of the above action levels are exceeded, work will be stopped and dust or noise controls will be implemented. All excursions over the action levels will be thoroughly documented by the FOL, and the follow-up control actions will also be clearly documented.