

## MDCH/ATSDR Exposure Investigation at Continental Aluminum

This factsheet presents the very basics of the Exposure Investigation to be conducted in Lyon Township. For more detail, please read the Protocol, available at the Lyon Township offices, Lyon Township Public Library, Salem-South Lyon District Library, or at the MDCH website <http://www.michigan.gov/mdch-toxics> under Features.

**Who:** The person leading the investigation is Christina Bush, a toxicologist at MDCH. MDCH is the Michigan Department of Community Health. ATSDR is the federal Agency for Toxic Substances and Disease Registry.

**What:** MDCH and ATSDR are conducting an Exposure Investigation, which means we are going to take air samples to determine what chemicals are present in the air, especially during odor events.

**Where:** The Investigation is taking place in Lyon Township. “Grab” (instantaneous) air samples will be taken where odors are detected. Continuous monitoring and particulate monitoring will take place at a stationary trailer placed at Dolsen Elementary School.

**When:** The Investigation will start March 1, 2004, and is expected to last no more than 90 days.

**Why:** ATSDR received a petition from the township requesting a public health assessment. The township was concerned that the emissions from Continental Aluminum, a recycling aluminum smelter on Milford Road, may not be safe. Residents have complained since the recycler started operations about odors believed to be from the plant. The data available to ATSDR and MDCH were inadequate to determine whether a public health hazard existed.

This Investigation proposes to determine what chemicals are in the air, especially during odor events. We may or may not be able to determine whether a public health hazard exists. However, we will attempt to answer the following questions:

1. What VOCs (volatile organic compounds, a class of chemicals), at what concentrations, are detected in the air during odor events? Are the concentrations above background, or control, levels?
2. Is hydrogen chloride or hydrogen fluoride (chemicals tested for in the stack tests at Continental Aluminum) detectable in the air during odor events? Is there a temporal (time) trend to the detection of these acids?
3. What metals (as airborne particulates), at what concentrations, are in the air?
4. Is it plausible that the earlier reported health effects are associated with detected chemicals and concentrations?
5. When an odor event occurs, do meteorological data indicate that the Continental Aluminum plant is upwind of the odor detection (i.e., is it plausible that Continental Aluminum is the source of the odor)?

**How:**

1. To determine if any VOCs (chemicals that easily enter a vapor or gas state and may have an odor) are present during odor events, we will analyze “grab,” or instantaneous, air samples. Samplers will be trained how to take the samples. Certain criteria must be met in order for the sample to be taken. VOC sources include paint and solvents (which might be on aluminum scrap).

2. To determine if hydrogen chloride and hydrogen fluoride might be in the air, the air will be monitored continuously by a machine called an acid monitor. The monitor detects mineral acids on a chemically-treated paper tape, which is then “read” by the machine’s optics to calculate the concentration of the acid. The data are logged onto a computer, which will be downloaded weekly by MDCH. Hydrogen chloride and hydrogen fluoride are acidic emissions routinely tested for in Continental Aluminum’s stack tests.
3. To determine the amount of airborne particulate metals, 24-hour air samples will be collected every 6 days with a machine called a PM10 high-volume sampling pump. The air is drawn through a filter, onto which particles smaller than 10 microns (one thousandth of a millimeter) collect. The filter is then processed to determine the amount of each metal of interest. The metals we will be monitoring for are aluminum, barium, beryllium, cadmium, chromium, copper, lead, manganese, selenium, and zinc. These metals can be emitted by aluminum recycling smelters.
4. Meteorological data will be collected during the Investigation to help determine if detected odors are coming from the direction of Continental Aluminum or if there are certain conditions under which odors seem to be more prevalent. Temperature, wind speed, wind direction, relative humidity, and barometric pressure will be recorded.

Analytical results will be compared to Comparison Levels chosen by MDCH/ATSDR, the findings interpreted, and the information shared with the community. We will provide informal updates throughout the Investigation and prepare a formal document within three months of the completion of the Investigation.

### **What MDCH/ATSDR needs from the community:**

We know that the results of this Investigation will be important to all of you in different ways. Your conscientious participation in this Investigation is also important.

First, there is a limited number of canisters to be used in the VOC (grab sample) testing. If you detect an odor and are thinking about calling the emergency responders, **the odor must last until the responder gets to your address AND the responder must be able to detect the odor.** This involves a judgment call, but we feel that it makes for the most prudent and efficient use of the resources. Also, no more than 1 sample per 6-hour period (midnight-6AM, 6AM-noon, noon-6PM, 6PM-midnight) will be taken (the sampler will tell you if a sample has been taken for that period when you call).

#### **Contacting air samplers during odor events – DO NOT CALL 9-1-1**

**7 AM – 5 PM: call 486-3775 (fire department)**

If event occurs **5PM – 7AM or the fire department is not available**, call one of the numbers below (these numbers are not available until March 1):

**248-787-4926 (5PM – 7AM, daily)**

**248-787-4918 (24/7 daily after March 3)**

**248-240-6852 (10AM – 5PM, Monday-Friday)**

**248-240-7279 (8AM – 9PM daily after April 6)**

Second, **continue logging odor complaints with the township.** We need the forms to be a consistent format, so Lyon Township has designed a new form and has them available at their offices.

#### Contact Information:

MDCH Christina Bush [bushcr@michigan.gov](mailto:bushcr@michigan.gov) 1-800-648-6942 or 517-335-9717