

Letter Health Consultation

**Moriah Congregation Mercury Spill
DEERFIELD, LAKE COUNTY, ILLINOIS**

EPA FACILITY ID:

**Prepared by the
Illinois Department of Public Health**

April 21, 2009

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

MORIAH CONGREGATION MERCURY SPILL
DEERFIELD, ILLINOIS

Prepared By:

Illinois Department of Public Health
Under a cooperative agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry



Pat Quinn, Governor
Damon T. Arnold, M.D., M.P.H., Director

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March 31, 2009

Charisse Walcott
ATSDR - DHAC
1600 Clifton Road, NE
Mailstop F-58
Atlanta, GA 30333

Dear Charisse:

At the request of the Agency for Toxic Substances and Disease Registry (ATSDR), the Illinois Department of Public Health (IDPH) has prepared the following site-related information as documentation of the public health response and health evaluation of the Moriah Congregation Mercury Spill.

Site Background

On January 12, 2009, IDPH received a request from the Lake County Health Department (LCHD) to provide health-based assistance regarding a mercury spill at the Moriah Congregation building complex in Deerfield, Illinois. This complex is the home of a synagogue, a pre-school and a day care. Moriah is a traditional Conservative Congregation affiliated with the United Synagogue of America.

The congregation had hosted a blood drive on December 14, 2008 and, reportedly, a blood pressure instrument had broken that day and someone put the broken, mercury-containing device under the sink in the "wheel room". Liquid mercury was observed beneath the sink on January 10, and staff contacted LCHD and IDPH. The congregation obtained the services of SET Environmental, Inc., an environmental contractor, which sampled the building later that day.

On January 12, IDPH received a copy of the mercury vapor data from the January 10 sampling by SET and provided a verbal, health-based interpretation of the data to LCHD and the Moriah Congregation president. Vapor levels beneath the sink exceeded 100 micrograms of mercury per cubic meter ($\mu\text{g}/\text{m}^3$). Elsewhere in the wheel room, $3.2 \mu\text{g}/\text{m}^3$ were detected. The mercury level in the north hallway was $6 \mu\text{g}/\text{m}^3$, probably due to tracking mercury from the wheel room.

IDPH directed LCHD and the president to a mercury health fact sheet and spill cleanup fact sheet on the IDPH web site. IDPH advised the use of a post-cleanup clearance level of $3 \mu\text{g}/\text{m}^3$ for mercury vapor in the pre-school and day care areas, which is consistent with the clearance level developed by ATSDR and IDPH as part of the Nicor Mercury Response in Illinois.

On January 26, IDPH provided a written health-based interpretation of the data (Attachment 1) at the request of the Moriah Congregation. IDPH staff also fielded questions from leaders of the

Moriah Congregation school parent organization at the request of LCHD and the congregation president.

SET used standard mercury clean-up procedures to remove the liquid mercury and reduce mercury vapor levels in the building. In addition to cleaning, SET applied an epoxy coating to the floor near the sink in the wheel room. After the cleanup was completed, all mercury vapor levels in the building were less than $1 \mu\text{g}/\text{m}^3$.

Discussion

The chemical of interest was metallic (elemental) mercury. The primary route of exposure to elemental mercury is via inhalation of vapor, therefore we used the mercury vapor levels detected in the various rooms to make a health-based determination. We estimated the exposure level of the students using a time-weighted average based on the time spent in various rooms of the school. This time-weighted exposure estimate was much less than our cleanup guideline for Illinois Schools of $3 \mu\text{g}/\text{m}^3$ provided all visible liquid mercury (the source of the vapor) is removed and the area cleaned.

In addition, exposure would have been of short duration before the holiday break and discovery of the spill occurred only a few days after school resumed in January. Short-term exposure would not have been at levels that would cause adverse health effects and the spill was cleaned before chronic exposures would occur. After the SET cleanup was completed, all mercury vapor levels in the building were less than $1 \mu\text{g}/\text{m}^3$.

Some parents had their children tested for mercury and the laboratory results were within the range of the general population.

Conclusion

IDPH reviewed the mercury vapor sample data and exposure information provided by the Moriah Congregation and concluded that there is no apparent public health hazard. Although students and staff had limited exposure to mercury vapor, no adverse health effects would be expected. Cleanup has reduced the mercury vapor in the building to acceptable levels.

Recommendations

IDPH recommended that the cleanup contractor complete their work in the school to minimize future exposure. IDPH offered to review post cleanup sample data, if the congregation so desired. Both of these recommendations have been completed and no further action is necessary.

If you have further site-related questions, please contact me at 217-782-5830.

Sincerely,

Ken Runkle
Environmental Toxicologist

From: Runkle, Ken <Ken.Runkle@Illinois.gov>
To: emashalom@aol.com
Sent: Mon, 26 Jan 2009 8:47 am
Subject: RE: mercury spill at Moriah Congregation

Dear Ms. Peaceman,

We have reviewed the mercury vapor sample data and exposure time information you provided, and have determined that although students and staff had exposure to mercury vapor in your facility, no adverse health effects would be expected.

The primary route of exposure to elemental mercury is via inhalation of vapor, therefore we used the ambient air levels detected in the various rooms to make our health-based determination. We estimated the exposure level of the students using a time-weighted average based on the time spent in various rooms of the school. This time-weighted exposure estimate was much less than our cleanup guideline of 3 micrograms of mercury per cubic meter of air for schools.

In addition, exposure would have been of short duration before the holiday break and discovery of the spill occurred only a few days after school resumed in January. Short-term exposure would not have been at levels that would cause adverse health effects, and the spill is being cleaned before chronic exposures would occur.

We recommend that the cleanup contractor complete their work in the school to minimize future exposure. We would be willing to review post cleanup sample data if you believe that would be useful to you.

If you have additional questions, please contact me at the number below.

Ken Runkle
Environmental Toxicologist
Illinois Department of Public Health
525 West Jefferson St.
Springfield, IL 62761
217-785-1666; 217-785-0253 (fax)

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Certification

This Moriah Congregation Mercury Spill letter health consultation was prepared by the Illinois Department of Public Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodologies and procedures existing at the time the health consultation was initiated. Editorial review was completed by the Cooperative Agreement partner.



Charisse J. Walcott
Technical Project Officer, CAT, CAPEB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



Alan Yarbrough
Team Lead, CAT, CAPEB, DHAC, ATSDR