

Dioxin Resolution for the City of Midland Residential Soils

INFORMATION AND PROCESSES



The people of Midland have graciously embraced Dow as part of their community for nearly 115 years. As we work with you to resolve the issue of dioxin contamination in the city of Midland, we recognize that our company has a responsibility to continue to be a good neighbor. Our commitment to you is to that we will work with regulators and the community to do all that we can to make this as easy as possible.

Please refer to this pamphlet for details about our efforts, and to find answers to questions you may have. You can also go to our web site at www.midlandresolution.com, or stop by the Midland Resolution Office at 1008 Jefferson Avenue for more information.

Your involvement will be important as we move forward together to bring closure to this long-standing issue, and we thank you for your interest.

A handwritten signature in black ink, appearing to read "Rich Wells".

Rich Wells
VICE PRESIDENT AND SITE LEADER, MICHIGAN OPERATIONS

About the Resolution

On February 16, 2012, the Michigan Department of Environmental Quality (MDEQ) announced agreement on a proposed plan to resolve the issue of dioxin contamination in city of Midland residential soils.

As part of the proposed resolution, Dow will sample residential properties near the manufacturing site for the presence of dioxins above a site-specific action level. MDEQ is proposing a level of 250 parts per trillion (ppt) for residential soils in the Midland area. This level was developed by MDEQ, in accordance with U.S. Environmental Protection Agency-approved risk assessment procedures, and with input from EPA. Sampling data and bioavailability soil studies conducted in the Midland area were factored into the calculations.

Sampling will determine where remediation may be required. The initial area for sampling has been generally defined as the area near the Michigan Operations site, north to Eastlawn Drive, west to Rodd Street and east to Waldo Avenue. A smaller area to the southeast of the intersection of Washington and Ashman Streets will also be sampled. The footprint of these areas will be refined as the program is implemented and more sampling information becomes available.

DID YOU KNOW ...

Health risks from dioxins are based on exposure – exactly how much dioxin has been absorbed into one's bloodstream. The EPA has said that a small amount of an individual's exposure to dioxin comes from soils.

WHAT ARE DIOXINS?

Dioxins are a family of chemicals comprising 75 different types of dioxin compounds and 135 related compounds called furans. They are unintended by-products of certain industrial processes and also occur due to activities such as backyard burning of household trash, and natural events such as forest fires. Dioxin contamination in the city of Midland is the result of airborne emissions from past waste management practices at Dow. Emissions released into the air from incinerators used in the early days of Dow's manufacturing operations contained dioxins, which ended up in the soil downwind of the plant.

Dioxin emissions from Michigan Operations decreased dramatically over the years as processes were modernized. Dow's rotary kiln incinerator now enables 99.999 percent efficiency in eliminating chemical emissions.

WHAT'S IN THE PLAN?

The resolution requires Dow to analyze soil samples from residential properties in the Resolution Area to determine dioxin levels. Properties containing more than 250 parts per trillion (ppt) of dioxin will be eligible for remediation activities. Properties with 250 ppt or less will not require cleanup.

Q: HOW DID YOU DETERMINE THE 250 PPT ACTION LEVEL?

A: MDEQ is responsible for determining appropriate clean-up levels where corrective action is required, as part of the State's authorization to implement the federal Resource Conservation and Recovery Act (RCRA). This clean up level was developed by MDEQ, in accordance with U.S. Environmental Protection Agency-approved risk assessment procedures, and with input from EPA. Sampling data and bioavailability soil studies conducted in the Midland area were factored into the calculations.

Process

Using scientific data collected in the city of Midland, Dow worked with MDEQ to determine where dioxins may have been deposited by past emissions from incinerators at Michigan Operations, and where remediation may be required.

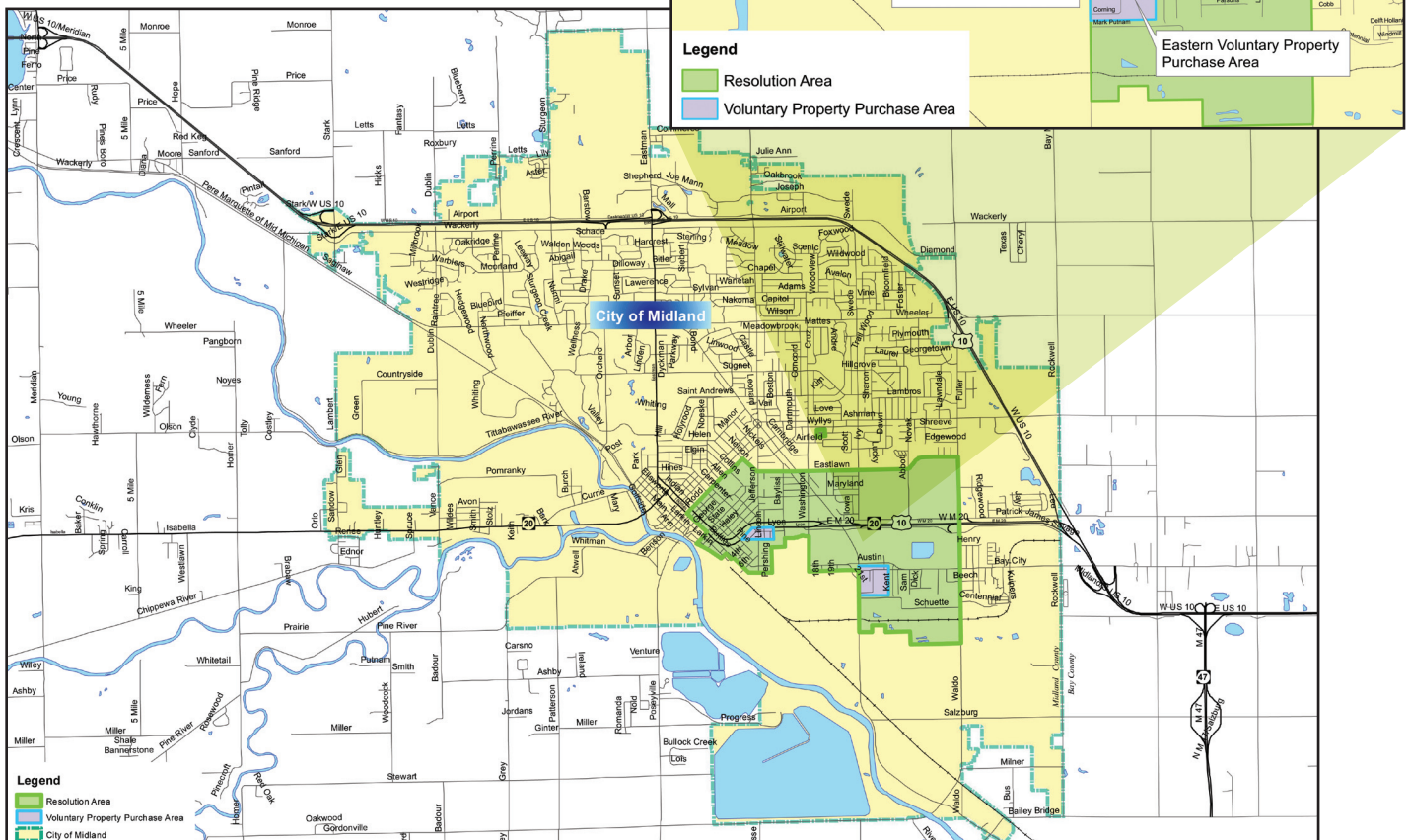
Dow will contact residential property owners in the initial sampling area to request permission to sample soil on their properties. Dow will analyze soil samples to determine the level of dioxins. Properties that test above 250 ppt will be offered a cleanup.

Upon receiving the sampling results, Dow will develop a specific cleanup plan for each property, which will be reviewed with the owner. Upon consent of the property owner, Dow will remove the top 12 inches of soil from the property, replace it with new soil and return the property to its previous state. Dow will work to protect unique or ornamental features, whenever

possible. Vegetation and plants affected by the removal process will be replaced. The intent will be to make the process as easy as possible for homeowners.

Upon completion of the cleanup, property owners will receive a confirmation letter from MDEQ documenting that the cleanup work is completed.

Soils that are removed from residential properties will be reused on the Michigan Operations site.



TIMING

Remediation activities will be conducted in a phased manner, generally beginning with properties closest to Dow's Michigan Operations manufacturing site.

It is difficult to estimate the length of time that will be needed to complete this project, but our commitment is to conduct work as safely and as quickly as possible.

Once MDEQ approves the proposed work plan, Dow will begin requesting permission from property owners to take soil samples.

Work will continue with each new construction season. A construction season typically begins in April and lasts until October, weather permitting. The graphic below shows a general timeline of activities.



2012 TIMELINE

FEBRUARY
16

MDEQ
Announce
Proposed
Resolution



MARCH
1

Public
Information
Meeting
Held



EARLY
MARCH

Dow
Submits
Work Plan



**MARCH-
EARLY**
APRIL

45-day
Public
Comment
Period



**MID-
APRIL**

MDEQ
Public
Hearing



JUNE

Soil
Testing
Begins.
Upon
MDEQ
Approval
of Work
Plan



SUMMER

Testing
Continues, Soil
Removal and
Replacement
Begins



OCTOBER

Work
Concludes
for the
Season



Your Involvement

Homeowners will be involved every step of the way. No sampling or remediation activities will be conducted on any property without the consent of the owner. Property owners will be able to refuse Dow access to their properties. In those cases, funding will be set aside for remediation work to be conducted by Dow at a later date.

Dow and MDEQ will discuss sampling results and the specific remediation plan for each property with homeowners. Dow will work to minimize inconveniences to residents during this process, and to return property to its original condition.

QUESTIONS YOU MAY HAVE

Q: Should I be concerned about my family living on our property before cleanup?

A: No. Risks to human health from dioxins are based on exposure. The action level is based on more exposure than most people will experience. The EPA has said that a small amount of an individual's exposure to dioxin comes from soils. If you are concerned, the MDEQ has recommendations on how to minimize your exposure to contaminated soil.

Q: What about parks and schools located in the Resolution Area?

A: They will be treated in the same manner as residential properties and all the same requirements will apply.

Q: Who will be responsible for the maintenance of my new lawn?

A: Dow will work with property owners to maintain new lawns and plants until they are re-established. This may include installing water delivery systems, restoring existing irrigation systems, and paying for watering the lawn and new plants until vegetation is re-established.

Q: How is this project related to the dioxin contamination on the Tittabawassee River and floodplain?

A: These are two different situations requiring very different solutions. The river and floodplain are being addressed through an agreement with EPA that was signed in January 2010. Dow continues to follow the EPA's systematic process of characterization and remediation on the river, segment by segment, as required in the agreement.

Q: Will Dow have to conduct dioxin cleanup again?

A: MDEQ and Dow understand that this plan will resolve the issue of soil contamination on residential properties in the final resolution area.



A large, mature tree with a thick trunk and a dense canopy of yellowing leaves stands in a grassy park. Sunlight filters through the branches, creating a dappled light effect on the ground. The background shows more trees and a clear sky.

DOW'S COMMITMENT TO HOMEOWNERS

We recognize that our company has a responsibility to be a good neighbor as we work with you to resolve a long-standing issue. Because our goal is to make this as easy as possible, Dow pledges the following:

- No action will be taken on any property without the consent of the homeowner.
- Dow will work to minimize inconveniences for residents during this process, and to return property to its original condition.
- Homeowners with questions or concerns about work taking place on their properties have the right to expect that those questions or concerns will be addressed promptly.



FOR MORE INFORMATION

Dow has established numerous ways for homeowners to obtain more information. Please contact us with your questions and comments.

In Person:
Midland Resolution Center
1008 Jefferson Avenue
Midland, MI 48640

By Phone:
(989) 638-7002 • (888) 778-2306

Internet:
www.midlandresolution.com

