

A Technical Overview: EPA's Work in Eastern Sandusky County

Since the fall of 2011, the U.S. Environmental Protection Agency has been working in the eastern part of Ohio's Sandusky County. The Agency has been investigating a variety of sites for the presence of contamination, beginning with 14 historic dumps or sites with potential contamination according to Ohio EPA and Ohio Department of Health reports. For several months EPA also operated a hot line for area residents to report information on other potential sites. As EPA worked in the county, the Agency focused on new work, not duplicating work done by the state agencies.

This is a technical overview of the work done so far by federal and state agencies.

Chemical Release Information for Sandusky County

Information on the release of chemicals is available through EPA's Toxics Release Inventory (TRI). TRI reports submitted to EPA are publicly available through EPA's [Envirofacts](http://www.epa.gov/enviro) (www.epa.gov/enviro) data warehouse. Envirofacts also includes site-specific information from various EPA programs, such as the National Emissions Inventory (NEI), Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA).

The state agencies investigated air quality and water quality in the area. These excerpts from the report summarize its findings.

Air Quality

In Ohio, EPA has delegated to Ohio EPA the authority to monitor air emissions. All companies with permits for air emissions are required to routinely monitor or sample their emissions (typically called "stack testing") and to report the results to Ohio EPA. People with concerns about emissions from a particular facility in Sandusky County should contact the Northwest District of Ohio EPA, Division of Air Pollution Control (www.epa.state.oh.us/dapc/AirPollutionControl.aspx).

During a yearlong study in 2009, Ohio EPA detected no elevated levels of pollutants that would indicate a public health concern in the Clyde and Green Springs areas. See the EPA's Eastern Sandusky County website for documents on the state and county studies:

- "Childhood Cancer Among Residents of Eastern Sandusky County," joint report by Ohio Department of Health, Sandusky County Health Department and Ohio EPA.
- p. 29: "The preliminary results of the air monitoring, to date, do not indicate cause for concern. This monitoring will continue through at least the end of the 2009 calendar year."
- www.alwayschoosehealth.com/uploads/PDF/ClydeTimeline2011.pdf.
- Ohio EPA Air Quality Report for Clyde and Green Springs, May 14, 2010.
- p. 5: Ohio EPA air monitoring efforts began Jan. 13, 2009, and ended Jan. 8, 2010.

During the year-long air monitoring study, Ohio EPA did not detect elevated levels of VOCs or heavy metals. Additionally, air quality in the Clyde and Green Springs areas complies with the National Ambient Air Quality Standards as established by EPA for all criteria pollutants (particulate matter, nitrogen dioxide, ozone, carbon monoxide, lead and sulfur dioxide).

Conclusion: Ohio EPA studied air quality for a full year in the Clyde and Green Springs areas and did not detect elevated levels of pollutants that would indicate a public health concern.

Water Sampling: Drinking Water and Surface Water

During its investigation, Ohio EPA did not find contamination in drinking water that would present a health risk.

These are excerpts from state and county reports regarding drinking water. There are links to these excerpts on EPA's website:

- Sandusky County and Ohio Department of Health's 2011 final report is at www.sanduskycohd.org/Template/Childhood%20Cancer%20in%20Eastern%20Sandusky%20County%20a%20Profile%205%2026%2011.pdf.
- p. 19: "In total 12 households (60 percent) had a private well as the primary drinking water source during the pregnancy or from birth to diagnosis. **However, all of the private water well testing conducted by Ohio EPA showed no cancer-causing chemicals at levels that would present a health risk.**"
- October 30, 2009 progress report prepared by Ohio Department of Health, Sandusky County Health Department and Ohio EPA.
- www.alwayschoosehealth.com/uploads/PDF/Childhood%20Cancer%20in%20Eastern%20Sandusky%20County.pdf.
- p. 26: "Drinking water sampling was conducted in January and February of 2009. Eleven drinking water samples were collected from two public water systems and domestic water wells. The samples were analyzed for a broad scan of carcinogenic and non-carcinogenic chemical compounds. **Results of the sampling did not identify any components of drinking water that suggest carcinogenic health concerns.** Additional sampling of drinking water was conducted in June 2009. Nine water samples were analyzed for pesticides. **Samples were obtained from public water systems, domestic wells, reservoirs and a river intake.** The analytical results are consistent with the previous drinking water quality results with the detection of low-level concentrations of commonly used pesticides in water that is derived from a stream or reservoir. **No results from a treated drinking water sample exceeded a maximum contaminant health level standard.** No pesticides were detected in any of the domestic water well samples or the Northern Ohio Rural Water sample."

Ohio EPA found no health threat to people who had incidental contact with the water in the Clyde area.

Links to the state and county reports on EPA's website include:

- p. 5: “Ohio EPA Division of Surface Water *Biological & Water Quality Study of the Sandusky Bay Tributaries, 2009.10* The Sandusky Bay tributaries study area – including the Green Creek, Pickerel Creek, Raccoon Creek, Mills Creek and Pipe Creek watersheds – was originally part of the lower Sandusky River Total Maximum Daily Load (TMDL) survey area. However, in spring 2009 the survey was partitioned into a separate smaller study area, assisting with childhood cancer investigation in eastern Sandusky County.”

Conclusion: Chemicals detected in these waters do not pose a health threat to people who may have incidental contact.

Vickery

EPA’s Water Division administers the Underground Injection Control Program (UIC). The Agency has delegated to Ohio EPA the authority to monitor the UIC Program in Ohio. At Vickery Environmental, Ohio EPA has a staff person assigned to the facility to oversee daily operations. UIC Program regulations require that the facility collect and analyze samples from surrounding monitoring locations. Ohio EPA will, on occasion, collect samples at the same time for independent analysis.

Additional information for the UIC Program for Ohio EPA can be found at www.epa.ohio.gov/ddagw/uic.aspx.

Information on the UIC Program in general can be found at water.epa.gov/type/groundwater/uic/index.cfm.

EPA Investigations

EPA performed 17 site assessments for environmental contamination in 2012. Below is an explanation of Regional Screening Levels (numbers to which analytical data is compared in order to determine if further action is warranted). To assist in the explanation, two assessments are summarized in this memorandum – Whirlpool Manufacturing Property and Clyde Paint and Supply. The results of the Clyde City Dump are also discussed to clarify why EPA is not taking action at the site.

Use of Regional Screening Levels

Regional Screening Levels (RSL) are developed using risk assessment guidance from EPA. They are used for site “screening” to help identify areas, contaminants and conditions that may require further investigation. Chemical concentrations above the RSL would not automatically trigger a response action; the RSLs are used as a baseline to indicate if further evaluation of the risks posed by a site is necessary.

There are two separate types of tables, residential and industrial. Residential tables are used for residential properties. The calculations involved with obtaining a “number” rely on risk factors normally associated with residential properties (age, children, 24-hour potential exposure, etc.), and the industrial properties use risk factors normally associated with industrial properties (average adult, 8-hour potential exposure, etc.). Each type of table has different uses such as

Soil Supporting, Air Supporting, etc., but for most purposes, the soil supporting tables are used for initial comparison.

Residential tables are the most conservative tables to use as an initial screening. If contaminants are detected in soil samples, the results are initially compared to the residential tables. If the contaminants exceed the residential screening level, then further analysis of the property is taken into consideration. The main factors considered are:

1. Is the property residential or industrial?
2. How far underground was the sample collected?
3. How much above the screening level is the result?
4. What is the contaminant's background concentration?
5. Does the property have other physical characteristics (fencing, asphalt, concrete, etc.)?

By first applying the residential RSL, investigators obtain information on contaminants that may be of concern. All the factors listed above are then taken into consideration before deciding if action is required on a particular property.

For additional information on RSLs, visit www.epa.gov/region9/superfund/prg/. See the Frequently Asked Questions and the User's Guide, as well as links to specific tables.

Arsenic

Arsenic has a high natural background concentration in Ohio (Sandusky County included), especially when compared to the RSLs. When the analytical data was reviewed, arsenic values were compared to the published background concentration of arsenic in Sandusky County. These values are published by the U.S. Geological Society (USGS) and can be found at: <http://mrdata.usgs.gov/geochem/county.php?place=f39143&el=As&rf=upper-midwestern>.

Whirlpool Manufacturing Property

During the site assessments conducted in eastern Sandusky County, EPA compared all sampling results to residential criteria even though the property investigated was not a residential property. Sample results that exceeded the residential criteria were then compared to industrial criteria.

Three contaminants exceeded the residential property screening levels at the Whirlpool property: polychlorinated biphenyls (PCBs), 1-1 dichloroethane and arsenic. PCBs and 1-1 dichloroethane were then compared to RSLs for industrial properties and the concentrations of the contaminants detected in the soil were less than the respective industrial RSL. Arsenic is known to have a high natural background in Sandusky County, and the arsenic results were compared to published background levels for Sandusky County.

When EPA determined there would be no further action on the property, other factors were taken into consideration, including:

1. Detection of 1-1 dichloroethane occurred at 8 to 10 feet below ground and the detection of PCBs occurred at 10 to 12 feet below ground; shallower samples (2 to 4 feet below the ground surface) were non-detect for all analyzed contaminants.
2. The majority of the property is covered in asphalt or concrete, which limits contact with site soils.

3. An EPA discharge compliance inspection indicated no off-site discharging (or migration) of contaminants.
4. A water quality study was conducted by Ohio EPA.
5. The property is fenced, which limits exposure to the public.

If, at some point in the future, Whirlpool decides to terminate its manufacturing business at the Clyde location, the property must meet certain environmental standards as required by law.

For concerns about worker safety at the site, see the Occupational Safety and Health Administration (OSHA) website: www.osha.gov/oshdir/oh.html. The Toledo area office covers Sandusky County.

Clyde Paint and Supply

In June 2012, EPA performed a site assessment at the former Clyde Paint and Supply property. The results – available on EPA’s website – indicated there were several containers of chemicals inside the building (oil-based paint and used oil), that lead and chromium was present in surface soils above residential screening levels, and that xylene was present at approximately 4 feet below ground in one location.

Actions Taken

The current property owner removed the paint and used oil from the building.

Although the property is not a residential property, EPA determined that use of residential screening levels was appropriate in this case because:

1. There is no current business operation at the facility.
2. Although fencing is present, there are breaches in the fence allowing for trespass.
3. There is evidence of trespass.
4. The property is surrounded by residential properties.

In October 2012, EPA took action to remove soil at the property. Approximately 12 inches of soil/gravel were removed from areas where lead and chromium were above the residential screening levels. The excavated area was screened with an X-Ray Fluorescence instrument (XRF) and the lead and chromium levels were below residential standards. The excavated area was then backfilled and graded. The area where xylene was detected was excavated to approximately 5 feet in depth and backfilled. A total of approximately 100 tons of soil was excavated and transported off site for disposal.

Clyde City Dump

In 2004, Ohio EPA indicated the state would take the lead in managing the Clyde City Dump. Clyde City Dump was assessed by the Superfund Removal program in 2012 and by the pre-remedial site assessment program in 2011. Based on the recent removal and pre-remedial assessments, the site was not recommended for federal action. Ohio EPA will continue to manage the Clyde Dump under state authorities.

Sample results from the 2012 assessment were compared to the RSL for residential properties. As mentioned above, the residential numbers are not appropriate for all properties, this site

included. Analyzing the data, no contaminants were detected above the screening levels in surface and shallow sub-surface samples (0-2 feet below ground) other than arsenic, cobalt and PCBs.

As discussed above, the area has a high background level of arsenic. The results for cobalt were also compared to the industrial RSLs and the results were less than the screening level for industrial properties. The highest PCB detection in the shallower samples was 1 milligram per kilogram which is below the established threshold of 25 mg/kg for Low Occupancy Areas as stated in 40 CFR Part 761.61.

Project Summary

EPA has completed assessments on 17 sites. EPA concluded that no federal action would be necessary at 14 of the sites. EPA removed contaminated soil from two of the three remaining sites.

Ongoing Projects

EPA received information on the hot line that dumping occurred on the former Whirlpool Park property. The Agency investigated during a site assessment in June 2012; the results are posted on EPA's website.

The results of the site assessment indicated that PCBs were present at depth (8 to 12 feet below the ground surface) on the property, specifically near the area of the old basketball court.

Actions

The Whirlpool Manufacturing Co. will perform a full property assessment (commonly known as a PHASE 2 site assessment) on the entire property. This is necessary to determine the extent of contamination to determine if remedial actions are needed. Site assessment plans will be submitted to EPA for approval before any site work begins. In general, the assessment will include installation of shallow and deep wells for ground-water sampling, sediment and surface water sampling from the creek/pond on the property, surface soil sampling, and subsurface soil sampling.

In addition to approving all work plans submitted by Whirlpool, EPA personnel or contractors will be present during all assessment activities. EPA will also collect random split samples as well as random discretionary samples that will be analyzed by an independent laboratory in order to confirm the findings of Whirlpool.

The results will be published on the Agency's website.