



STATE OF MICHIGAN

DEPARTMENT OF COMMUNITY HEALTH
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

JANET OLSZEWSKI
DIRECTOR

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To Current Residents of Churchill Farms:

The Michigan Department of Community Health (MDCH) and the Agency for Toxic Substances and Disease Registry (ATSDR) are writing to inform you of a recent public health evaluation of the Lake Michigan swimming area associated with the Churchill Farms Subdivision in Shoreham, Michigan that was issued December 22, 2006. This evaluation is related to off-site movement of chemically contaminated groundwater from the Bendix Superfund Site (EPA ID# MID005107222) to the Churchill Farms (CF) beach area. A copy of the report entitled *Public Health Consultation-Groundwater Discharge to Lake Michigan-Bendix Corporation/Allied Automotive* can be obtained by contacting MDCH toll free at 800-648-6942, and are available for review at two local libraries listed at the end of this letter. The document can be downloaded at:

http://www.michigan.gov/documents/mdch/BendixCorpHC122206_186070_7.pdf

MDCH and ATSDR Public Health Advisory Statement

MDCH and ATSDR advises that:

Children of all ages avoid playing and swimming in the groundwater contaminant discharge plume venting through the lake sediments (i.e., lake sands) into the northern near-shore waters of the Churchill Farms beach. This *Advisory Area* is off-shore in the water and is shown on the map attached to this letter (Figures 1 & 2). MDCH and ATSDR find all areas outside the *Advisory Area* are safe for recreational use by adults and children. This includes the beach and all other near-shore swimming areas outside the defined *Advisory Area*.

Basis for the Public Health Concern

The Michigan Department of Environmental Quality (MDEQ) has identified the area (i.e., *Advisory Area*) where chemically contaminated groundwater (i.e., pore water) is moving upward (i.e., venting) through lake sands (i.e., sediment) into lake water (i.e., surface water) at the northern end of the Churchill Farms beach area (see the attached maps Figures 1 and 2). Within the lake sands of the *Advisory Area*, a number of large stones and slabs of reinforced-concrete exist. The *Advisory Area* is generally not thought to be used for recreational purposes. However, the MDCH and ATSDR are concerned that children could play in the lake sediments of the *Advisory Area* and may come into contact with high levels of vinyl chloride. Vinyl chloride contaminated groundwater is found within the shallow sediment of the lake bottom. Vinyl chloride has also been found in the surface water of the advisory area, but at much lower concentrations that are not a public health hazard. Therefore MDCH and ATSDR assume that the vinyl chloride is diluted when the contaminated groundwater mixes with the surface water as it moves upward out of the lake sediments.

The MDCH/ATSDR report identifies these concerns and concludes that there is an "indeterminate hazard" to children who might play in the *Advisory Area* during the summer months. An indeterminate hazard conclusion means that the MDCH and ATSDR have determined that children playing in the lake sediments may come into

contact with vinyl chloride in the *Advisory Area*, but are not able to state with certainty what amount of risk children would face from that contact. The reason for the indeterminate conclusion is that necessary information is not available to reach a more definite conclusion.

U.S.EPA conducted a human health risk assessment in 1997 to support the Record of Decision (ROD). Potential receptors considered in the assessment were adults and children using the lake for recreational purposes. Potential exposure scenarios included surface water ingestion and dermal contact. A site-specific quantification of potential risks was calculated, and the estimated carcinogenic and non-carcinogenic risks were below the U.S. EPA target risk ranges.

Robert Bosch LLC conducted a human health risk assessment in 1999 at the direction of U.S. EPA. Bosch also conducted additional human health risk assessments in 2004 and 2007 that focused on recreational use of the Churchill Farms beach area by both children and adults. The most recent assessment included evaluation of the risk to children wading in shallow lake water. The Bosch assessments all concluded that the beach area is safe for recreational use by everyone.

The MDCH review of the sediment pore water data collected by MDEQ has identified some uncertainties about the hazards of direct contact to waders in an isolated area of off-shore lake sands. However, it is the opinion of U.S. EPA that the remedy selected in the ROD remains protective of human health and the environment.

At the time the U.S. EPA human health risk assessment was performed; it was not known that the groundwater contamination was discharging in the near-shore waters at the Churchill Farms beach. U.S. EPA evaluation, using the best available science in 1997, was based on surface water testing and did not evaluate contact with the contaminated groundwater within the lake sediments. The additional human health risk assessments of 1999, 2004, and 2007 remained focused on surface water (i.e. swimming) and shallow beach groundwater (i.e. digging in the sand at the beach) as the primary contact media and did not evaluate contact with the contaminated groundwater within the lake sands (i.e., pore water), which is located approximately 20 feet from the shoreline.

Therefore, the *Public Health Consultation-Groundwater Discharge to Lake Michigan-Bendix Corporation/Allied Automotive* conducted by MDCH/ATSDR addresses a previously unevaluated human exposure pathway, and considers the exposure of children to the vinyl chloride found in the water within the lake sands of the *Advisory Area*. This MDCH/ATSDR health consultation is the basis for the Public Health Advisory Statement issued in this document and remains in effect.

Continued Monitoring

The MDEQ will continue to monitor the contaminant discharge plume in this area and update MDCH as new information becomes available. Bosch also continues to monitor the surface water and ground water in the beach area on a quarterly basis to confirm that the beach and all other near-shore swimming areas outside the defined *Advisory Area* are safe. Copies of monitoring reports and risk assessments conducted by Bosch in consultation with U.S. EPA are maintained at the local Bendix Superfund Site document repositories at the St. Joseph and Lincoln Township Public Libraries (addresses below).

Contact Information

For questions about the MDCH/ATSDR Public Health Consultation please contact Mr. Kory Groetsch, Toxicologist of MDCH. For more information regarding the Bendix Superfund Site (EPA ID# MID005107222), please contact Mr. Bill Ryan, Remedial Project Manager for the U.S. Environmental Protection Agency or Mr. Mark Henry, Senior Environmental Engineer with the MDEQ.

Bill Ryan
Remedial Project Manager
Superfund Division SR-6J
U.S. EPA, Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3590
Phone (312) 353-4374,
FAX (312) 353-8426
ryan.williamj@epa.gov

Mark A. Henry
Senior Environmental Engineer
MDEQ-RRD, Superfund Section
Constitution Hall
PO Box 30426
Lansing, MI 48909
Phone (517) 335-3390
FAX (517) 335-4887
HenryMA@michigan.gov

Kory J. Groetsch
Toxicologist
MDCH-DEH
Capital View Bld
201 Townsend St.
Lansing, MI 48913
Phone (517) 335-9935
FAX (517) 335-9775
groetschk@michigan.gov

Public Libraries:

Maud Preston Palenske Memorial Library
500 Market Street
St. Joseph, MI 49085
(269) 983-7167

Lincoln Township Public Library
2099 West John Beers Road
Stevensville, MI 49127
(269) 429-9575

Sincerely,
Kory J. Groetsch, Toxicologist
Michigan Department of Community Health
Division of Environmental Health



Figure 1. Aerial photo of the Churchill Farms neighborhood and beach with the green box showing the general location of the *Advisory Area*.



Figure 2. Close-up aerial photo of the *Advisory Area* shown in Figure 1.