

Health Consultation

PUBLIC COMMENT VERSION

FORMER AMCAST INDUSTRIAL SITE

CEDARBURG, WISCONSIN

EPA FACILITY ID: WIN000510210

**Prepared by the
Wisconsin Department of Health Services**

APRIL 2, 2010

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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

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HEALTH CONSULTATION

PUBLIC COMMENT RELEASE

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Prepared By:

Wisconsin Department of Health Services
Division of Public Health
Under cooperative agreement with the
Agency for Toxic Substances and Disease Registry (ATSDR)

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Summary and Statement of Issues

The Wisconsin Division of Public Health (DPH), as part of its cooperative agreement with ATSDR, has prepared this Public Health Consultation in order to review and identify public health issues associated with the Amcast Industrial site, which is part of the Cedar Creek site in Cedarburg, Ozaukee County, Wisconsin. The Cedar Creek site is a Superfund Alternative Site. The Amcast project has been inactive for several years following the bankruptcy of the responsible party. The United States Environmental Protection Agency (EPA) proposed the Amcast Industrial site for the National Priorities List (NPL) in April 2009.

Sewers and sumps near the Amcast plant and soil under the building were sampled in November 2005. Around the time of the November 2005 samples, Amcast filed for bankruptcy a second time and the work of Amcast's environmental contractor was not completed. Before the second bankruptcy, Amcast contractors also collected soil samples from private properties near the Amcast plant in summer 2005. Additional residential samples were taken by the Wisconsin Department of Natural Resources (WDNR) in September 2007. Some of those samples showed PCB contamination slightly above comparison values, or levels considered to be safe for long-term exposure (EPA 2010; ATSDR 2000). However, based on estimated doses to PCBs, no public health hazards are likely from these levels. A cleanup action is recommended to prevent unnecessary exposure to PCBs. Until that occurs, DPH recommends hygiene practices by individual residents that will help minimize exposure.

Conclusion DPH concludes that polychlorinated biphenyls (PCBs) in residential yard and garden soils in the neighborhood adjacent to the Amcast property are not expected to harm people's health, including their incidence of cancer.

Basis for decision The most important source of people's exposure to PCBs is through contaminated fish, or through contaminated meat or dairy products. The PCBs found in the Cedarburg residential yard soils are not concentrated enough to cause direct harm, but could make a small contribution to the lifetime exposure to PCBs in individual residents. Some of these PCBs in residential soils could also eventually enter the food chain.

Next steps In order to protect community health and well-being, and prevent PCBs from entering the food supply, DPH recommends the removal of excess PCBs from yard and garden soils. In order to prevent even minor exposure to PCBs, DPH also recommends that residents minimize contact with bare soil in their yards by planting vegetative ground cover over bare soil, by washing hands after contact with soil and before eating, and by thoroughly washing soil from backyard garden vegetables.

Background

Site description and History. Cedar Creek around Cedarburg, Wisconsin has been the focus of sediment quality studies involving historical polychlorinated biphenyl (PCB) release from local metal casting operations. WDNR and EPA have identified two industrial sources of PCB contamination in the Cedarburg and Cedar Creek area: Mercury Marine and Amcast.

Mercury Marine has existing agreements with the EPA for removing PCBs from Cedar Creek, and has made substantial progress in removing PCBs from the areas for which they are responsible. Those areas are not included in the Amcast NPL listing, and will not be discussed in detail here. The second source of contamination in the area is Amcast, a local automotive industry supplier located at N39 W5789 Hamilton Road in Cedarburg. The Hamilton Road plant emptied PCBs, via storm sewers, into the creek, Zeunert Pond, and possibly other areas. The remediation of PCBs in the area are currently divided into three separate projects: Cedar Creek, Mercury Marine Plant 2, and the Amcast Industrial site (EPA 2009). This public health consultation will focus on the Amcast site, which includes Zeunert Park Quarry Pond, the storm water basin located near Zeunert Park at Park Lane and Wilshire Drive, and residential yard soils in the neighborhood between the Hamilton Road Amcast property and the Cedarburg wastewater treatment plant.

Sewers and sumps at the Amcast plant and soil under the building were sampled in November 2005. Around the time of the November 2005 samples, Amcast filed for bankruptcy a second time; subsequently Amcast's environmental contractor was told to stop working and the results were never analyzed. Soil samples were also taken on private properties near the Amcast plant in summer 2005. Some of those samples showed PCB contamination slightly above what EPA considers to be safe levels (EPA 2010).

Demographics. Cedarburg Wisconsin is a city of 11,440, located in southern Ozaukee County. Its demographic profile, under the year 2000 U.S. Census (www.census.gov), includes a median age of 39, a racial distribution that is 98.2% white, and a median family income (1999 dollars) of \$66,932. The city is frequently recognized for its historic features, from which Cedarburg benefits as a tourist destination. The neighborhood adjacent to the Amcast facility (along Burr Lane and Wilshire Drive) consists of approximately 25-30 residences, most of which are single-family units that appear to have been built in the 1950s-1960s.

Review of previous DPH work in Cedarburg.

Health Consultation. The Wisconsin Division of Public Health has assisted the WDNR and EPA with the Cedar Creek site since the late 1990s. In 2005, ATSDR and DPH issued its public health consultation for the Zeunert Quarry Pond polychlorinated biphenyl site (ATSDR 2005). In this document, DPH was asked by EPA for assistance in assessing public health hazards associated with PCB-contaminated sediments in Zeunert Pond, a quarry pond in Cedarburg. DPH concluded that (1) there is a public health hazard from eating fish from the pond (concurring with the existing WDNR fish consumption advisory for the water body), (2) that

physical contact with PCB-contaminated sediments in both Zeunert Pond and the Wilshire Drive storm water basin is a public health hazard, and (3) that there is an indeterminate health hazard from contact with shoreline soil and sediment in the pond. DPH recommended that more information be gathered about PCB concentrations in sediment and shoreline soils, and that signs be placed around the pond to ensure that the public is adequately informed of the chemical hazards present.

County Health Department neighborhood awareness survey. On June 14, 2004, the Ozaukee County Health Department requested the assistance of DPH in evaluating neighborhood awareness concerning the existing fish advisory and the extent to which the public may have contact with the fish and sediments of the pond and retention basin. DPH agreed to assist Ozaukee County in administering a limited door to door survey of 30 residences (Appendix 1). The survey results suggested that most neighborhood residents are familiar with the PCB issues in the area, as well as the existing fish consumption advisory. An unexpected result was that contact with long-time residents provided a historical perspective that directly led to further investigation into the presence of PCBs in residential yard soil.

Door-to-door outreach following neighborhood soil sampling. In December 2007, DPH, EPA, and Ozaukee Co. HD canvassed the Wilshire Drive and Burr Lane neighborhood to personally provide information about the residential soil PCB analysis. A packet of information, including a fact sheet and a site-specific public health statement (Appendix 2), was left at each house. If a resident answered the door, canvassers took a few minutes to discuss the results and answer questions.

Community Health Concerns

The major community health concern addressed in this consultation is that of exposure to PCBs in residential soil of the neighborhood adjacent to the Amcast facility. In addition, there are several other concerns that were discussed previously in the Zeunert Pond Health Consultation (ATSDR 2005). These include exposure to PCBs through fish consumption, exposure to sediment in Zeunert pond, and exposure to sediment in the stormwater runoff pond. Due to the PCB content of fish samples analyzed from Zeunert Pond, a WDNR fish consumption advisory is in effect. The potential for exposure to PCBs from consuming these fish was addressed previously (ATSDR 2005). That document noted that all species from Zeunert Pond are unsuitable for consumption, and that this message is included in the WDNR fish consumption guide. Following the ATSDR 2005 report, on-site signage was placed to emphasize the fish consumption message.

Discussion

Residential soil sampling. During the course of community outreach activities in the areas near Zeunert Pond, one long-term resident recalled that in years past, a storm drainage ditch was located at the property boundaries of residential lots located on Wilshire Lane and Burr Lane

(Figures 1, 2). The resident's concern was that the ditch contained drainage water from Amcast with the associated possibility of PCB contamination. Subsequently, in 2005 Amcast contracted to have soils in that residential neighborhood sampled and analyzed for PCBs. The location of 31 off-site (residential) and 3 on-site (Amcast) samples are shown in Figure 2; the PCB concentration of 28 residential samples and 3 on-site samples are reported in Table 1. The concentration of PCB detected in residential soil ranged from <22 to 13,000 ppb ($\mu\text{g PCB/kg soil}$). The average detected concentration was $2546 \pm 4188 \mu\text{g PCB/kg soil}$ (mean \pm std.dev, $n=28$).

The EPA has arranged for additional on-site and off-site areas to be sampled and analyzed in 2010. The details and timeline of this field investigation are not yet available from the EPA's environmental contractors. The work is currently expected to take place during early summer 2010 (EPA Dec. 2009). DPH will evaluate the results of future soil sampling in a separate health consultation.

Exposure assessment. The route of exposure to PCBs evaluated in this report is through the pathway of incidental ingestion of backyard soil contaminated with the chemicals. Such exposure might occur if someone was gardening or playing in the soil, and later placed their fingers in their mouth without first washing hands. It is typically assumed that children ingest 200 milligrams of soil per day through this behavior. Other routes and sources of PCB ingestion from this area, such as eating contaminated fish, were evaluated previously (ATSDR 2005). The ATSDR Environmental Media Exposure Guide (EMEG) value for total PCBs in soil is $400 \mu\text{g PCB/kg soil}$. The average concentration of PCBs detected in Cedarburg residential soil was $2546 \mu\text{g PCB/kg soil}$ (Table 1). Therefore, estimates of the greatest expected, or "worst case" exposure to PCBs were calculated for the highest PCB level and an average PCB level for children. It is conservatively assumed that children play in these soils each day and ingest some of the soil through incidental hand-to-mouth contact, such as through eating food with unwashed hands.

Worst case estimate of exposure to PCBs from incidental ingestion of soil on hands for children:

$$13 \text{ mg PCB/kg soil} \times 200 \text{ mg incidental ingestion soil/day} = 2.6 \times 10^{-3} \text{ mg ingested PCB/day}$$

Exposure to average soil concentration of PCBs from incidental ingestion of soil on hands:

$$2.5 \text{ mg PCB/kg soil} \times 200 \text{ mg incidental ingestion soil/day} = 5 \times 10^{-4} \text{ mg ingested PCB/day}$$

Ingestion at typical sediment cleanup goal, or 1mg PCB/kg:

$$1 \text{ mg PCB/kg soil} \times 200 \text{ mg incidental ingestion soil/day} = 2 \times 10^{-4} \text{ mg ingested PCB/day}$$

Comparison of exposure estimate to health-based guidelines for PCBs. The concentration of PCBs in residential yard and garden soils in the neighborhood adjacent to the Amcast property exceed the ATSDR health-based comparison value (EMEG), and is greater than Wisconsin

health and environmental agencies find acceptable. Nonetheless, these concentrations are not expected to have measureable consequences for people's health. The EMEG values are set at a low level primarily intended to protect against their entry into the food chain and ultimately exposing people through accumulation in fish, meat, and dairy products. Based on action levels (FDA 2000) for PCBs in food, some allowable limits calculated for total PCBs in typical food servings are:

1 cup milk at FDA limit:	375 µg total PCBs
6 oz fish at FDA limit:	300 µg total PCBs
4 oz red meat at FDA limit:	340 µg (fat basis)

A more detailed estimate of the concentration of PCBs in residential soils that would be considered safe could be calculated based on knowledge of the PCB Aroclor mixtures present in those soils, and applying that to the reference dose (RfD) for lifetime exposure to those mixtures (EPA 2008). Limited information on PCBs in storm sewers serving the Amcast facility indicates that Aroclor 1248 is predominant in PCB contaminants linked to Amcast (WDNR 2007). For Aroclor 1248, the EPA has no published ingestion reference dose (RfD), but references reviewed by EPA (EPA 2008) suggest a fetal exposure limit of 0.03 mg/kg/day for developmental defects. The worst-case exposure estimate calculated above does not exceed the 0.03 mg/kg/day exposure limit even if the PCBs are assumed to be all Aroclor 1248. However, at this time, no Aroclor analysis of PCB mixtures in the residential soils is available.

The EPA (2008) *Integrated Risk Information System* (IRIS) has evaluated the cancer potency of PCB mixtures using a tiered approach that depends on the information available. These tiers were applied to the estimated daily exposures calculated above, after converting those exposures to child dosages by dividing the exposures by a child mass of 20 kg. The calculated oral exposures are 1.3×10^{-4} mg/kg/day (based on 13mg/kg high PCB soil concentration) and 2.5×10^{-5} mg/kg/day (based on average PCB soil concentrations). EPA IRIS ranks these as *low risk*, and *lowest risk*, respectively, Risk and Persistence from PCB exposure.

ATSDR has a published *Cancer Risk Evaluation Guide* (CREG) of 0.4 milligrams PCB per kilogram of residential soil (mg/kg). The CREG is calculated from EPA's cancer slope factor for oral exposure (ATSDR 2009b), although EPA does not currently have a published slope factor for Aroclor 1248 (EPA 2008). This CREG is an estimate of the maximum concentration of total PCBs in residential soil that would be expected to cause no more than one excess case of cancer per one million people receiving daily exposure over their average lifetime of 70 years. Extrapolating from the ratio of the 0.4 mg/kg CREG to the environmental concentrations found in residential soils (Table 1), the highest concentration, 13 mg/kg, calculates to 1 excess case of cancer per 31,000 people receiving daily exposure over their lifetime. At the *average* concentration of PCBs found, 2.5 mg/kg, the lifetime cancer risk calculates to one excess cancer case per 160,000 people receiving daily exposure. It is important to emphasize, when estimating cancer risk from exposure to PCBs in soil, that our major route of exposure to PCBs, and the source of greatest concern, is through bioaccumulation in foods. An important overall goal in

Cedarburg should be to remove PCBs from the environment in order to correct and prevent that bioaccumulation.

Figure 1. Aerial view of residential neighborhood adjacent to Amcast facility.
Map reference: WDNR webview. <http://www.dnr.state.wi.us/maps/gis/appwebview.html>

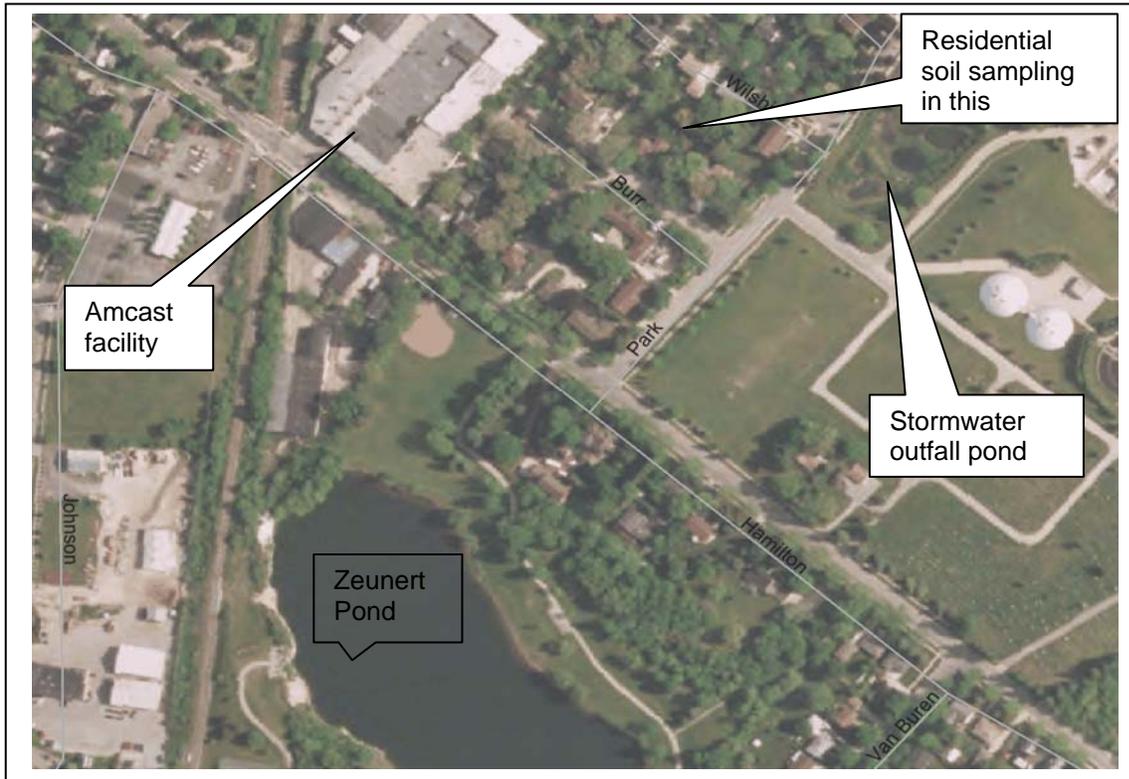


Table 1. PCB content of residential soils near Amcast facility, Cedarburg.

Location ¹	Sample no. ²	Sample Date	Concentration (µg/kg)
On-site	ENSTM-41S	4/27/2005	2200
On-site	ENSTM-42S	4/27/2005	640
On-site	ENSTM-44S	4/27/2005	1000
Wilshire Dr (front of lot a)	ENSS-40	4/28/2005	Not reported
Wilshire Dr (front of lot b)	ENSS-41	4/28/2005	<30
Wilshire Dr (NW corner of lot c)	ENSS-42	4/28/2005	<26
Wilshire Dr (NW corner of lot d)	ENSS-43	4/28/2005	<26
Wilshire Dr (N/center of lot d)	ENSS-44	4/28/2005	1100
Wilshire Dr (SE corner of lot d)	ENSS-45	4/28/2005	8000
Wilshire Dr (rear of lot e)	ENSS-46	4/28/2005	58
Wilshire, Dr (S side, front of lot e)	ENSS-47	4/28/2005	<25
Wilshire Dr (S side rear of lot f)	ENSS-48	4/28/2005	2000
Wilshire Dr (S side, front of lot f)	ENSS-49	4/28/2005	<26
Wilshire Dr (S side, rear of lot g)	ENSS-50	4/28/2005	5500
Wilshire Dr (S side, front of lot g)	ENSS-51	4/28/2005	<28
Wilshire Dr (S side, rear of lot h)	ENSS-52	4/28/2005	11,000
Wilshire Dr (S side, front of lot h)	ENSS-53	4/28/2005	40
Burr Ln, (S side, rear of lot r)	ENSS-54	4/28/2005	7000
Burr Ln, (S side, lot q)	ENSS-55	4/28/2005	13,000
Burr Ln, (N side, front of lot i)	ENSS-56	4/28/2005	270
Burr Ln, (S side, nw corner of lot t)	ENSS-57	4/28/2005	<22
Burr Ln, (N side, ctr of lot j)	ENSS-58	4/28/2005	<25
Burr Ln, (N side, nw corner lot k)	ENSS-59	4/28/2005	Not reported
Burr Ln, (S side, se corner lot t)	ENSS-60	4/28/2005	13,000
Burr Ln, (N side, front lot k)	ENSS-61	4/28/2005	Not reported
Burr Ln, (S side, sw corner lot u)	ENSS-62	4/28/2005	<25
Burr Ln, (S side, ne corner lot u)	ENSS-63	4/28/2005	450
Burr Ln, (N side, front lot l)	ENSS-64	4/28/2005	<24
Burr Ln, (N side, rear of lot l)	ENSS-65	4/28/2005	6600
Burr Ln, (N side, lot o)	ENSS-66	4/28/2005	1100
Burr Ln, (N side, lot m)	ENSS-67	4/28/2005	<26
Burr Ln, (S side, NE corner lot u)	ENSS-68	4/28/2005	230
Burr Ln, (N side, lot p)	ENSS-69	4/28/2005	1600
Burr Ln, (N side, lot n)	ENSS-70	4/28/2005	59

N,E,W,S: north, east, west, south.

µg/kg: micrograms PCB per kilogram soil.

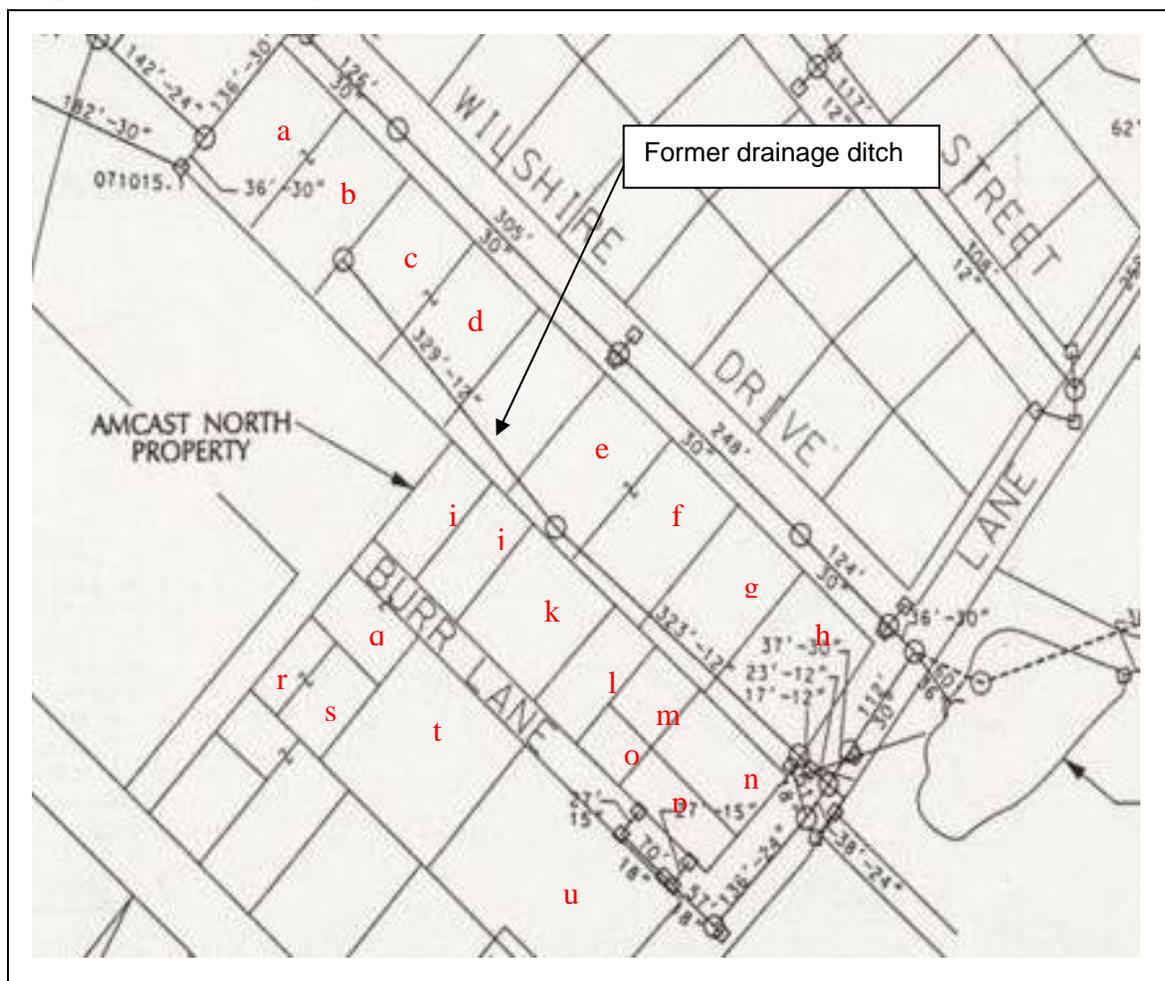
¹See figure 2 for location map.

²All sample information as reported by ENSR International, *Sediment sample location and PCB concentration map, citizens' yards*. June 17, 2005.

Range of PCB detects in residential soil: <22-13,000 ppb (µg PCB/kg soil).

Average detected concentration: 2546± 4188 µg PCB/kg soil (mean std. ±dev, n=28).

Figure 2. Approximate locations of 2005 soil samples for PCBs in residential neighborhood adjacent to Amcast facility, Cedarburg. Map adapted from Foth & Van Dyke, *Preliminary Site Characterization Summary, Scope I.D. 02A010, Amcast Industrial Corporation, Cedarburg, WI.*



Toxicology of PCBs (ATSDR 2009). The polychlorinated biphenyls are a group of structurally related molecules that are chemically stable, highly soluble in oil, and are insoluble in water. Many PCBs were sold as commercial mixtures known as Aroclors; environmental analyses may attempt to characterize PCBs based on their Aroclor origin. PCBs last for decades in the environment, tend to accumulate in body fats, and accumulate in the food chain. In the environment, PCBs are found mostly adsorbed to sediments and soil rather than in water. PCBs have various effects on the body that are related to physiological development, regulation of the cell cycle, and tumorigenesis. Several population-level studies have linked prenatal and perinatal exposure to PCBs to lower birth weights and learning problems (Guo et al. 1999; and reviewed in ATSDR 2000). Some forms of PCBs are suspected human carcinogens. There is ample evidence that some PCB structures are hepatocarcinogenic in animals. There is limited occupational evidence of hepatocarcinogenicity in humans, but this has not been demonstrated

unequivocally (reviewed in ATSDR 2000). Currently, the EPA classifies PCBs as a class B2 (probable) human carcinogen. Due to the widespread dispersion and chemical stability of PCBs in the environment, some exposure (mostly through food) is unavoidable.

Child Health Considerations

In communities faced with air, water, or food contamination, the many physical differences between children and adults demand special emphasis. Children could be at greater risk than are adults from certain kinds of exposure to hazardous substances. Children play outdoors and sometimes engage in hand-to-mouth behaviors that increase their exposure potential. Children are shorter than are adults; this means they breathe dust, soil, and vapors close to the ground. A child's lower body weight and higher intake rate results in a greater dose of hazardous substance per unit of body weight. If toxic exposure levels are high enough during critical growth stages, the developing body systems of children can sustain permanent damage. Finally, children are dependent on adults for access to housing, for access to medical care, and for risk identification. Thus adults need as much information as possible to make informed decisions regarding their children's health.

Eating contaminated fish either by small children or by their pregnant mothers is considered to be the most important exposure pathway for the child development related health effects. Direct contact with PCB-contaminated sediments, while constituting a much lower level of exposure, is another route of exposure to these chemicals. Because the pond bank and sewer outfall pond are attractive to exploration, fishing, and wading by children of all ages, a realistic potential exists for contact with contaminated sediments in these areas. Public education directed at parents, along with access restrictions and posted warnings, should be considered to help prevent exposure.

Conclusions

DPH concludes that polychlorinated biphenyls (PCBs) in residential yard and garden soils in the neighborhood adjacent to the Amcast property are not expected to harm people's health, including their incidence of cancer. The PCB levels in soil are greater than comparison values, but are low enough that no negative health effects to the public are expected. The low acceptable levels of PCBs in soil are intended to help prevent exposure over one's lifetime, and to keep PCBs out of waterways and fish.

Possible exposure to PCBs at the levels found in neighborhood soils would be small compared to normal dietary sources of PCBs. The main source of exposure would still be through a normal diet that includes dairy products and fish.

The way that one could be exposed to PCBs in their backyards is by ingesting small amounts of soil. This might happen if one actively digs, gardens, or plays in soil, and then eats with dirty hands. One might also eat small amounts of soil from unwashed backyard garden vegetables.

Recommendations

A cleanup action is recommended to prevent unnecessary exposure to PCBs. For the past several years, EPA and WNDR have been working with those responsible for PCBs in Cedar Creek and Zeunert Pond to get the PCBs cleaned up. Some parts of the cleanup of have already been completed. The clean up work in Cedarburg must now also address yard soils in the Park-Wilshire-Burr neighborhood.

Although most PCB exposure to people in this neighborhood has likely been through their normal diet, **there are several things residents can do to minimize exposure to PCBs:**

- The most important advice is to follow the DNR Fish Consumption Advisory for Zeunert pond and Cedar Creek: don't eat fish from these waters.
- Minimize contact with bare soil in your yards by planting vegetative ground cover over bare soil and by washing hands after contact with soil and before eating.
- Thoroughly wash soil from backyard garden vegetables.

Public Health Action Plan

- DPH will continue to work with the Ozaukee County Health Department, and with state and federal environmental agencies, to provide environmental health information to Cedarburg residents.
- DPH will work with the EPA in developing a sampling strategy for further soil testing in the Wilshire Drive-Burr Lane neighborhood, and is prepared to review the field sampling plan when it becomes available in 2010.
- This document will be available for public comment prior to its final release. DPH will address any comments received from the public and include these in the final document.

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Appendix 1. Survey of Cedarburg residents in the neighborhood of Zuenert Quarry Pond, June 2004.

Methods. A sample size of thirty residents was selected as sufficient to provide confidence in survey findings. The neighborhood around the park was divided into four quadrants and a local and state health official would select a street in their appointed quadrant to begin. Residents surveyed were randomly chosen. Information regarding the survey effort was provided to the community via a press release and subsequent story that ran in the Cedarburg News Graphic on June 24, 2004.

Survey instrument: Cedarburg Herman A. Zeunert Quarry Pond Park

June 24, 2004

Hi, I'm _____ with the _____. We're working with Ozaukee County Health Dept. to gauge awareness in the neighborhood about issues associated with Zeunert Park. Would you be willing to answer a few questions?

Questions:	Address (# & Street)						
Do you use Zeunert Park?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
How often do you use it?	Weekly Monthly Annually						
Do you fish there?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Do you eat the fish?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Are you aware of the fish advisory?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
How did you hear about it?	Newspaper TV Radio Other						
Do you ever see anyone fishing or playing at the retention pond?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

The park pond has been under a fish advisory since 1990. Recent testing has shown that levels of PCBs in the sediments are high and that PCBs were also detected in a retention pond on the other side of Hamilton, by the treatment plant at Park and Wilshire.

Are you familiar with the retention pond?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Do you ever see anyone fishing or playing at the retention pond?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
How would you like to be kept informed about the site?	Newspaper Mail email TV Radio Phone #:						
Comments:							

Appendix 2. Information distributed to Cedarburg residents.

PUBLIC HEALTH FACT SHEET

Polychlorinated Biphenyls (PCBs)

Sampling on residential properties near the former Amcast facility

Cedarburg, Ozaukee County

PCBs were found in some residential yards at slightly elevated levels. Although the PCB levels in these residential soils are not high enough to be an immediate hazard, a cleanup action is recommended to prevent unnecessary exposure to PCBs and to keep PCBs from entering waterways where they can accumulate in fish. Until a cleanup is completed, there are several things you can do to protect your family from unnecessary exposure.

PCBs were found on residential properties at slightly elevated levels. In June of 2004, the Wisconsin Division of Public Health and the Ozaukee County Public Health Department surveyed your neighborhood in order to learn whether residents were aware of PCB problems in Cedarburg. We found that most people were very aware of the PCB problem. As a result of neighborhood participation in the investigation, PCBs were detected in soils of properties in the Wilshire neighborhood. More recent sampling was conducted by the Wisconsin Department of Natural Resources in September 2007.

The PCB levels found during the most recent sampling are similar to previous concentrations that were determined not to be a health hazard. The PCB levels in soil are greater than Public Health finds acceptable, but are low enough that no negative health effects to the public are expected. The low acceptable levels of PCBs in soil are intended to help prevent exposure over one's lifetime, and to keep PCBs out of waterways and fish. Elevated levels of PCBs in blood are not expected due to the PCB levels in soil.

Possible exposure to PCBs at the levels found in neighborhood soils would be small compared to normal dietary sources of PCBs. The main source of exposure would still be through a normal diet that includes dairy products and fish.

The way that one could be exposed to PCBs in their backyards is by ingesting small amounts of soil. This might happen if one actively digs, gardens, or plays in soil, and then eats with dirty hands. One might also eat small amounts of soil from unwashed backyard garden vegetables. Everyone ingests small amounts of soil each day from dirty hands and household dust- children more so than adults. It is recommended that people follow the everyday precaution of washing hands before eating. Although possible exposure to PCBs in these soils would be low compared to PCBs found in many foods, washing hands helps prevent unnecessary exposure.

In contrast to the exposure from soil, eating a meal of highly contaminated fish from Zeunert Pond would result in a PCB dose that is about 100,000 times greater than one's daily exposure from backyard soil. This is equal to about 30 years worth of the safe daily dose in a single meal.

Finally, all of us carry some PCBs in our bodies. PCBs are widespread in the environment, break down slowly, and accumulate in animals. Most of our lifetime exposure to PCBs comes through our normal diet - primarily fish and dairy products. For more information about the effects of PCB exposure, please see the Wisconsin Department of Health and Family Services fact sheet on PCBs (available at <http://dhfs.wisconsin.gov/eh/ChemFS/fs/PCB.htm>).

A cleanup action is recommended to prevent unnecessary exposure to PCBs. For the past several years, EPA and the WDNR has been working with those responsible for PCBs in Cedar Creek and Zeunert Pond to get the PCBs cleaned up. Some parts of the cleanup of have already been completed. The future clean up work in Cedarburg will also address yard soils in your neighborhood. Because the levels of PCBs in yard soils are fairly low, health and environmental agencies are currently assessing what should be done in the short term to keep people safe.

Until a cleanup is completed, there are several things you can do to protect your family from unnecessary exposure. Although most PCB exposure to people in this neighborhood has probably been through their normal diet, there are several things residents can do to minimize exposure to PCBs:

- The most important advice is to follow the DNR Fish Consumption Advisory for Zeunert pond and Cedar Creek: don't eat fish from these waters.
- Minimize contact with bare soil in your yards by planting vegetative ground cover over bare soil and by washing hands after contact with soil and before eating.
- Thoroughly wash soil from backyard garden vegetables.

For more information contact:

Ozaukee County Public Health Department

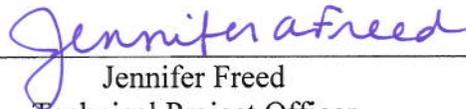
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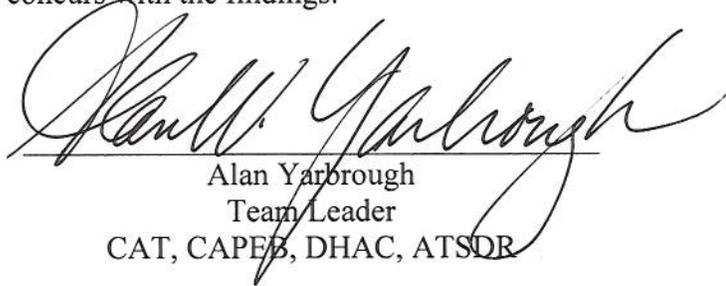
CERTIFICATION

This Health Consultation for the Former Amcast Industrial Site was prepared by the Wisconsin Department of Health Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with the approved methodology and procedures existing at the time the Health Consultation was begun. Editorial review was completed by the Cooperative Agreement partner.



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



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