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Five-Year Review Report

Second Five-Year Review Report

for

Outboard Marine Corporation Superfund Site

Waukegan
Lake County, IL

September 2002

PREPARED BY:

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Date:

9/26/02

Five-Year Review Report

Table of Contents

List of Acronyms v

Executive Summary vii

Five-Year Review Summary Form ix

Five-Year Review 1

I. Introduction 1

II. Site Chronology 2

III. Background 3
Site Characteristics 3
Land and Resource Use 4
History of Contamination 5
Initial Response Actions 6
Basis for Taking Action 7

IV. Remedial Actions 7
Remedy Selection and Implementation 7
System Operations/Operation and Maintenance (O&M) 12

V. Progress Since the Last Five-Year Review 14

VI. Five-Year Review Process 15
Administrative Components 15
Community Notification and Involvement 15
Document Review 16
Data Review 16
Site Inspection 17
Interviews 18

VII. Technical Assessment 18
Question A: Is the remedy functioning as intended? 18
Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid? 19
Question C: Has any other information come to light that could call into question the protectiveness of the remedy? 20

Table of Contents (Cont'd)

Technical Assessment Summary 20

VIII. Issues 21

IX. Recommendations and Follow-up Actions 21

X. Protectiveness Statement(s) 22

XI. Next Review 23

Tables

Table 1 - Chronology of Site Events 2

Table 2 - Annual System Operations/O&M Costs 13

Table 3 - Issues 21

Table 4 - Recommendations and Follow-up Actions 21

Attachments
Site Maps
List of Documents Reviewed

Appendix
Comments received from the community

List of Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
IEPA	Illinois Environmental Protection Agency
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
NCP	National (Oil and Hazardous Substances Pollution) Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OMC	Outboard Marine Corporation
OU	Operable Unit
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PPM	Parts per Million
PRP	Potentially Responsible Party
RI/FS	Remedial Investigation and Feasibility Study
TCE	Trichloroethene
VOCs	Volatile Organic Compounds
U.S. EPA	United States Environmental Protection Agency

Executive Summary

The Outboard Marine Corporation (OMC) National Priorities List (NPL) site is located on the lakefront in Waukegan, IL. The OMC site currently has three operable units (OU): OUs 1 and 3 comprise the Waukegan Harbor site and OU 2 comprises the Waukegan Manufactured Gas and Coke Plant (Coke Plant) site. OMC completed the cleanup at OUs 1 and 3 in 1993 by dredging the upper harbor and excavating some PCB-laden soils from other areas on its property, treating some of the spoils to remove the PCBs for off-site destruction, and constructing PCB-containment cells on its property to hold treated and untreated spoils. Afterwards, OMC began the operation and maintenance (O&M) of the PCB-containment cells. OU 2 is in the remedial design stage. With the recent bankruptcy declaration of OMC, U.S. EPA could add a fourth OU to the site - OMC Plant 2 - should OMC abandon its unsold properties in the area.

Various entities, including the City of Waukegan, are planning to purchase or otherwise obtain title to unsold OMC properties, which could temporarily disrupt the cleanup processes planned for or in progress at the different OUs. For example, the cleanup remedies for OUs 1 and 3 and OU 2 were chosen assuming that future use of the site would be commercial/industrial. With OMC out of business, that assumption may no longer be entirely valid. Also, the City of Waukegan completed the purchase of the Coke Plant site from OMC in July 2002 and is examining alternative re-use possibilities.

U.S. EPA, in its first Five-Year Review for the OMC site (September 1997), considered the remedial action at OUs 1 and 3 to be protective when construction was completed in 1993 through the end of the five-year review period. PCB-levels in harbor area fish had fallen following completion of the harbor dredging, however, the cleanup level for PCBs in the harbor sediments was set at 50 ppm and state and federal agencies are now setting sediment PCB cleanup levels as low as 0.25-1.0 ppm at other sites in the U.S. Since PCB-levels in fish in the harbor area are now remaining steadily above action levels and even increasing slightly, it is likely that more sediment and fish sampling is needed to determine whether the remedy remains protective of human health and the environment. U.S. EPA anticipates that we and Illinois EPA (IEPA) will need to assume responsibility for the O&M of the PCB-containment cells when OMC abandons the Plant 2 property late this year (2002).

The remedy at OU 2 is expected to be protective of human health and the environment upon completion. In the interim, exposure pathways that could result in unacceptable risks are being controlled through temporary physical barriers (e.g. site fence).

Lastly, although not yet designated as part of the OMC NPL site, pending OU 4 (OMC Plant 2) is clearly not protective. Pending OU 4 is not protective because of the following issue(s): a large, uncontrolled TCE groundwater contaminant plume exists beneath OMC Plant 2; a PCB plume or other source likely exists beneath the plant; and there are PCBs and other surface contaminants on OMC Plant 2 property. The

following actions need to be taken to control potential exposure pathways at OU 4 once it is incorporated into the OMC NPL site description and is eligible for funding under Superfund: site security needs to enhanced, and U.S. EPA, in consultation with IEPA, should complete a remedial investigation and feasibility study (RI/FS) and undertake any necessary remedial actions at OU 4.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Outboard Marine Corporation		
EPA ID *(from WasteLAN)*: ILD 000802827		
Region: 5	**State**: IL	**City/County**: Waukegan - Lake County
SITE STATUS		
NPL status: **XX Final** ☐ Deleted ☐ Other (specify)		
Remediation status (choose all that apply): XX **Under Construction** XX **Operating** ☐ Complete		
Multiple OUs? XX **YES** ☐ NO	**Construction completion date:**	
Has site been put into reuse? ☐ YES XX **NO** [City, others, have tentative reuse plans pending.]		
REVIEW STATUS		
Lead agency: XX **U.S. EPA** ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Kevin Adler		
Author title: Remedial Project Manager	**Author affiliation:** U.S. EPA - Superfund	
Review period: 06 /18 /2002 to 09 /03 /2002		
Date(s) of site inspection: 03/04/2002		
Type of review: XX **Post-SARA** ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		
Review number: ☐ 1 (first) **XX 2 (second)** ☐ 3 (third) ☐ Other (specify)		
Triggering action: ☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#____ ☐ Construction Completion XX **Previous Five-Year Review Report** ☐ Other (specify)		
Triggering action date *(from WasteLAN)*: 09 / 30 / 1997		
Due date *(five years after triggering action date)*: 09 /30 /2002		

Five-Year Review Summary Form, cont'd.

Issues:

Outboard Marine Corporation, which performed the cleanup of OU 1 and OU 3 and operated and maintained the remedy under a Consent Decree, filed for Chapter 11 bankruptcy (reorganization) in December 2000 and Chapter 7 bankruptcy (liquidation) in August 2001. U.S. EPA and IEPA may be required to undertake the O&M of OU 1 and OU 3 as a result of the bankruptcy declaration.

The Coke Plant (OU 2) site, at which OMC was a PRP, has other PRPs directing the remedial design work at the time of this review. The bankruptcy action may affect the cleanup schedule by having another entity other than OMC own the site (potential site access issue).

OMC Plant 2 is to be abandoned upon completion of certain removal action-type cleanup tasks by the OMC Bankruptcy Trustee. OMC Plant 2 has very high levels of TCE and PCBs beneath it that the Trustee may not address. The OMC Plant 2 area may become OU 4 upon abandonment and subsequent IEPA nomination for it to be added to the OMC NPL site description.

Recommendations and Follow-up Actions:

Upon completion of the bankruptcy process, U.S. EPA should add OMC Plant 2 to the OMC NPL site description as QU 4. U.S. EPA and IEPA should work with potential purchasers of the site to tailor cleanup remedies for OU 4 to site re-use options.

Protectiveness Statement(s):

The remedial action at OUs 1 and 3 was considered to be protective when construction was completed in 1993 through the first five-year review period (September 1997). PCB levels in harbor area fish had fallen upon completion of the dredging. However, the cleanup level for PCBs in the harbor sediments was set at 50 ppm and state and federal agencies are now setting sediment PCB cleanup levels as low as 0.25-1.0 ppm at other sites in the U.S. Now that fish PCB-levels in the harbor area are remaining steadily above action levels and are even increasing slightly, it is likely that more study is needed to determine whether the remedy remains protective of human health and the environment. Note: U.S. EPA and IEPA will likely have to take over the O&M for OUs 1 and 3.

The remedy at OU 2 is expected to be protective of human health and the environment upon completion. In the interim, exposure pathways that could result in unacceptable risks are being controlled through temporary physical barriers (e.g. site fence).

Lastly, (pending) OU 4 is not protective. OU 4 is not protective because of the following issue(s): TCE plume beneath the site, PCB plume beneath the site, and surface contaminants. The following actions need to be taken: site security enhanced, complete RI/FS, and complete a remedial action at OU 4.

Other Comments:

None.

Five-Year Review Report

I. Introduction

The United States Environmental Protection Agency (U.S. EPA) Region 5, in consultation with the Illinois Environmental Protection Agency (IEPA), has conducted the second Five-Year Review for the Outboard Marine Corporation (OMC) Superfund site, Waukegan, Illinois. We conducted this review from June 2002 through September 2002, covering all three Operable Units (OU) at the site. We also reviewed a plausible fourth OU at the site. This report documents the results of the second Five-Year Review at the OMC site.

Purpose

U.S. EPA conducts a Five-Year Review to determine whether a cleanup remedy at a site is, or is expected to be, protective of human health and the environment. We document our review methods, findings, and conclusions in Five-Year Review reports. In addition, we identify any issues that we found during our review of site cleanup remedies in Five-Year Review reports and we make recommendations on ways to address these issues.

Authority

U.S. EPA prepared this Five-Year Review report pursuant to CERCLA § 121 and the National Contingency Plan (NCP). CERCLA § 121 states:

> If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

U.S. EPA interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR § 300.430(f)(4)(ii) states:

> If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

Triggering Action

A Five-Year Review is applicable to the OMC site because hazardous substances, pollutants, or contaminants remaining at the site are or will be left on site above levels that allow for unlimited use and unrestricted exposure. Hazardous substances (PCBs)

were left onsite after the OU 1 and 3 (Waukegan Harbor) remedial actions were completed (in 1993) and will be left onsite after the OU 2 (Waukegan Coke Plant) remedial action has been completed (in 2007). U.S. EPA is uncertain as to how the pending OU 4 (OMC Plant 2) will be addressed, as this portion of the site has just been presented to us within the past year (see below).

The triggering action for this review is the date of the first Five-Year Review, performed on OUs 1 and 3, as shown in U.S. EPA's CERCLIS database: September 30, 1997. In addition, U.S. EPA would be due to perform a Five Year-Review for OU 2 (Waukegan Coke Plant) in about September 2008, for we expect to begin construction of that cleanup remedy in 2003. However, we decided to complete a Five-Year Review for all site OUs herein, even though a review for OU 2 is not due yet, because it will be more efficient to undertake a single review at the site and issue a single Five-Year Review report instead of undertaking three separate reviews (for OU 1 and OU 3, OU 2, and possibly OU 4) and issuing three separate reports over the next few decades. We shall then undertake future Five-Year Reviews using previous trigger dates as long as hazardous substances remain on site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

The following table summarizes the site chronology to date.

Table 1: Chronology of Site Events

Event	Date
Initial discovery of contamination	**c. 1976**
Pre-NPL responses	**c. 1976**
NPL listing	**September 1983**
Remedial Investigation/Feasibility Study complete	**April 1984, March 1989 (OUs 1 and 3)** **September 1999 (OU 2)**
ROD signature	**April 1984 (OUs 1 and 3)** **September 1999 (OU 2)**
ROD Amendment	**March 1989 (OUs 1 and 3)**
Consent Decree	**April 1989 (OUs 1 and 3)**
Remedial design start	**April 1989 (OUs 1 and 3)** **July 2002 (OU 2)**

Table 1: Chronology of Site Events

Event	Date
Remedial design complete	**October 1990 (OUs 1 and 3)**
Actual remedial action start	**October 1990 (OUs 1 and 3)**
Construction dates (start, finish)	**October 1990-September 1993**
Construction completion date	**pending**
Final Close-out Report	**pending**
Deletion from NPL	**pending**
Previous five-year reviews	**September 1997 (Initial review)**
Site Inspection date(s) - Second review	**February and March, 2002**

III. Background

Site Characteristics

The OMC site is located on Seahorse Drive near the intersection of Grand Avenue and Sheridan Road on the west shore of Lake Michigan in Waukegan, Illinois, about 37 miles north of Chicago and 10 miles south of the Illinois/Wisconsin border (Figures 1 and 2). The site includes the Waukegan Harbor area and the former Waukegan Manufactured Gas and Coke Plant (Coke Plant) property. The site is in an area of industrial facilities and a marina that are situated around the harbor. It is also next to the city beach. Thus, while not located next to densely populated areas, a fair number of people frequent the harbor area to work, fish in the harbor, use the beach, or sail in the harbor and marina. Some of the adjacent beachfront areas have ecologically-important dunal environments with protected plant species growing on them.

Waukegan Harbor

Waukegan Harbor is irregularly shaped and is about 37 acres in area. Water depths in the harbor generally vary from 14 to 25 feet. Harbor sediment consists of 1 to 7 feet of very soft organic silt (muck) overlying an average of 4 feet of medium dense, fine- to coarse-grained sand. The sand is generally uncontaminated. Glacial till underlies the sand and typically ranges from 50 to more than 100 feet thick. The harborside walls are shored up with 20- to 25-foot steel sheet piling, except at the Waukegan Port District boat launching areas and at the retaining wall near the harbor mouth. The areas of concern within the harbor were former Slip No. 3 and the Upper Harbor, where large quantities of polychlorinated biphenyls (PCBs) were deposited in the sediments after OMC discharged PCBs and other fluids from its manufacturing facility (OMC Plant

2). Sediment PCB concentrations in former Slip No. 3 were greater than 500 parts per million (ppm) and PCB concentrations were between 50 and 500 ppm in the Upper Harbor.

A small tributary to Lake Michigan drains surface runoff from OMC and North Shore Sanitary District property (which is directly north of OMC). The drainage system also drains surface runoff from areas west of OMC property and the railroad tracks. This drainage system consists of the Crescent Ditch, the Oval Lagoon, and the North Ditch. PCB contamination in the Crescent Ditch, Oval Lagoon and North Ditch ranged from 50 to over 10,000 ppm. Hot-spot contamination (over 10,000 ppm) removal was performed in the Crescent Ditch and Oval Lagoon during the Waukegan Harbor cleanup action.

Another area of concern was the 9-acre Parking Lot area, located north of OMC Plant 2. PCB concentrations in this area were between 50 and 5,000 ppm.

Waukegan Coke Plant

The Waukegan Coke Plant property is about 30 acres in area and lies between OMC Plant 1 and OMC Plant 2. The site was the location of a railroad tie-treatment plant at the turn of the century and, later, the Coke Plant facility. Site soil consists of sand that overlies the glacial till. The Coke Plant site was discovered during the cleanup of Waukegan Harbor: when the replacement boat slip for former Slip No. 3 was excavated on the Coke Plant property, the excavated material was tested and found to contain high levels of polynuclear aromatic hydrocarbons (PAHs). Further investigation at the Coke Plant site revealed arsenic and creosote contaminants in the soil and high levels of arsenic, benzene, phenol, and ammonia in the groundwater.

OMC Plant 2

OMC Plant 2 is a 1,000,000 ft^2 facility in which OMC manufactured outboard engine parts from about 1949 until it declared bankruptcy in December 2000. The facility is the source of PCB contaminants in the harbor and it has recently been shown to have a large amount of chlorinated solvent beneath the building in the ground and groundwater.

Land and Resource Use

None of the site operable units use groundwater or surface waters (except Lake Michigan water) as a drinking water supply. The city water supply system is located just south of OMC Plant 1 and the intake is located more than 1000 feet from the shore into Lake Michigan. All facilities in the area are served by the city water supply system.

Based on Waukegan's current land-use plan and zoning for the area, U.S. EPA projects the following land uses for the site:

The Waukegan Harbor site is projected to maintain a marine recreational and industrial use for the harbor area and an industrial use for the PCB containment cells built on OMC Plant 2 property. A cement plant and a gypsum facility use the harbor to bring supplies and raw materials in by barge and the marina is a pleasure-boat storage area and boat launch. People fish in the harbor for catfish and other species.

The Coke Plant site was projected to remain a commercial/industrial use property due to its location between the then-operating OMC Plants 1 and 2. Now that Waukegan has purchased the site, the site-use assumptions may need to be revisited during the next five-year review period.

OMC Plant 2 is projected to be reused as a commercial/industrial facility upon completion of any necessary cleanup actions.

History of Contamination

OMC Plant 2 and Waukegan Harbor

From approximately 1961 to 1972, OMC purchased a hydraulic fluid that contained PCBs for use in its die-casting works. During the manufacturing process some of the hydraulic fluid spilled into the floor drains which discharged to an oil interceptor system which then discharged to the North Ditch. Some of the PCBs escaped from a portion of the oil interceptor, diversion, and pump system and were released directly to Waukegan Harbor. The harbor-area discharge was located in the western end of Slip No. 3, and the north property discharge was to the Crescent Ditch. As a result, large quantities of PCBs were released in Slip No. 3 of Waukegan Harbor and on OMC property in the North Ditch, Oval Lagoon, Crescent Ditch and in the Parking Lot. (It was estimated that there were over 700,000 pounds of PCBs on OMC property and 300,000 pounds of PCBs in Waukegan Harbor.) In 1976, high levels of PCBs were discovered in the soil and harbor sediment around OMC. The discharge pipe to the harbor was reportedly sealed later that year.

Later, during the OMC bankruptcy proceedings in 2001, U.S. EPA learned that there is a large chlorinated solvent plume beneath OMC Plant 2 and that there are other areas of PCB contamination associated with OMC Plant 2 that likely need to be addressed. OMC discharged these contaminants into the environment during its manufacturing processes.

Waukegan Coke Plant

The Coke Plant property was the site of a railroad tie treatment plant from about 1908-1917 and the tie plant is the likely source of the creosote that was discovered during the excavation of the replacement boat slip. Later, from about 1928 until 1969, the site contained a manufactured gas plant and then a coke plant which were the sources of the other soil and groundwater contaminants also found there. OMC purchased the

Coke Plant property in the 1970's and used the property for parking, fire training, and snowmobile testing.

Initial Response Actions

U.S. EPA, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund, listed the OMC site on the National Priorities List (NPL) in 1983. We had earlier initiated a remedial investigation (RI) at the site to determine the nature and extent of PCB contamination in the harbor and on selected areas of OMC Plant 2 property (e.g. the North Ditch). Afterwards, we completed a feasibility study (FS) report in early 1984. We analyzed various alternative cleanup remedies in the FS that would clean up the PCB contamination in the areas of concern. We released a proposed cleanup plan for public comment and then signed a Record of Decision (ROD) in April 1984, selecting a cleanup remedy that was estimated to cost $21 million to implement. We then began the remedial design phase. However, in late 1985 we were forced to suspend design work on the project due to the litigation between U.S EPA and OMC that we initiated because OMC refused to grant us access to its property to perform necessary tasks to complete the design.

CERCLA was reauthorized in October 1986 while this litigation was pending before the courts. The new law, the Superfund Amendments and Reauthorization Act (SARA), contained the Congressional preference for the selection of "permanent remedies which reduce the mobility, toxicity, or volume of hazardous substances" at NPL sites. Although RODs signed prior to October 1986 were not required to meet the new requirements of SARA, U.S. EPA reevaluated the 1984 OMC site ROD to develop a remedy more consistent with SARA.

The new law also gave us access rights to NPL sites. Consequently, as we began to review the selected remedy for consistency with SARA, U.S. EPA and OMC agreed to end the litigation over access rights. OMC then submitted a proposal to clean up the site. Later, in 1988, U.S. EPA, IEPA, and OMC entered into a Consent Decree under which we would oversee the cleanup of the site by OMC. Because the OMC remedy proposal varied from the 1984 ROD, we signed a ROD amendment in 1989 that incorporated the changes into the selected remedy.

OMC began cleanup work in 1989. However, when they began to construct the replacement boat slip on the Coke Plant property by excavating soil they discovered that the soil was contaminated with PAHs. After consultation with U.S. EPA, OMC excavated the PAH-contaminated soil and constructed a temporary storage area to manage it while the rest of the cleanup action was completed. Because the excavated area was within a portion of the former Waukegan Coke Plant property now owned by OMC, U.S. EPA designated the area as OU 2 of the OMC site. U.S. EPA identified several other potentially responsible parties (PRPs) for OU 2. One of them, North Shore Gas, completed an RI/FS for OU 2 in November 1998 and U.S. EPA signed a ROD for the cleanup of the Coke Plant site in September 1999. The design phase for OU 2 is underway.

Basis for Taking Action

Contaminants of Concern

Hazardous substances that have been released at the OMC site (all OUs) include:

Soil: PCBs, PAHs, Arsenic, chlorinated-volatile organic compounds (VOCs)

Groundwater: Arsenic, ammonia, phenol, benzene, chlorinated-VOCs

Sediment: PCBs

Contaminant Exposures

Actual or potential human exposures to contaminants in sediments, soil, and groundwater are associated with human health risks due to levels that exceed U.S. EPA's risk management criteria (i.e. excess carcinogenic risk exceeds the risk range of 1×10^{-4} to 1×10^{-6} and/or non-carcinogenic hazards exceed a hazard index (HI) of 1) under reasonable exposure scenarios. Potential carcinogenic risks are very high for exposures to arsenic and benzene in the Coke Plant groundwater and chlorinated-VOCs in the OMC Plant 2 (pending OU 4) groundwater, as these compounds exceed Safe Drinking Water Act maximum contaminant levels (MCLs) or other protective levels. Ammonia levels are very high and create a high hazard index for Coke Plant site groundwater.

Potential carcinogenic risks are very high for PCBs in surface soils on the OMC Plant 2 (pending OU 4) property, as PCB concentrations exceed 50 ppm in some areas. Arsenic and PAHs exceed protective levels in Coke Plant site soil for plausible exposure scenarios.

Actual or potential environmental receptor exposures to PCBs in the harbor sediments (and in Lake Michigan) caused PCB concentrations to accumulate to harmful levels in fish. Humans who caught and ate the fish, as well as anything else that ate the fish, would have been exposed to potentially harmful levels of PCBs.

IV. Remedial Actions

Remedy Selection and Implementation

Waukegan Harbor

U.S. EPA completed the first OMC Five-Year Review in 1997 and in it we detailed the cleanup action that occurred for the Waukegan Harbor site. We had completed our

review of the 1984 ROD in 1989 and issued a ROD amendment, modifying the Waukegan Harbor remedy to include the following cleanup tasks for OUs 1 and 3:

- A new boat slip would be constructed on the east side of the Upper Harbor on OMC property (the Waukegan Coke Plant property) to replace PCB-contaminated Slip No. 3. Larsen Marine Service, current owner of Slip No. 3, would be moved to the new boat slip.

- Slip No. 3 would be permanently isolated from the Upper Harbor by constructing a double-walled, braced, and soil-backfilled sheet pile cutoff wall around it. After the slip was isolated, a permanent PCB-containment cell would be built in the former slip by constructing an impermeable clay slurry wall with a minimum thickness of three feet around the slip with the slurry wall keyed 3 feet into the underlying clay till.

- Sediments from Slip No. 3 with PCB concentrations in excess of 500 ppm would be removed from the former slip and treated on-site (see below). The Upper Harbor would be dredged and contaminated sediments removed to a 50 ppm PCB cleanup level. The dredged materials would be placed in the newly-constructed Slip No. 3 containment cell.

- Two additional containment cells (termed the "East" and "West" containment cells) would be constructed using the above design for the Slip No. 3 containment cell. The East containment cell would encompass part of the OMC Plant 2 Parking Lot area and land to the east of the lot. The West containment cell would encompass the Crescent Ditch and Oval Lagoon area. Before constructing the West containment cell, soils with PCBs in excess of 10,000 ppm will be excavated and removed for treatment. The East containment cell would contain soils from the Parking Lot area. These soils would not receive on-site treatment because they were generally below the treatment criterion.

- Soils and sediments excavated from the former Slip No. 3, North Ditch, Crescent Ditch, and Oval Lagoon areas that exceed the treatment criteria (500 ppm in Slip No. 3, 10,000 ppm on land) would be thermally treated on-site to remove PCBs for disposal off-site in accordance with all applicable federal and state law. The treated material would be placed in the West containment cell.

- A treatment facility would be constructed for treating water generated during the remedial construction activities. Dredge water would be treated by sand filtration. Other water generated during the course of the cleanup would be treated utilizing the sand filtration step to remove sediments from the water, followed by carbon adsorption.

- Once all of the materials have been deposited in the containment cells, the cells would be closed and capped with a high density polyethylene (HDPE) liner and

soil cover. An extraction well system would be installed in the cells and designed to prevent the migration of PCBs from the cells by maintaining an inward hydraulic gradient.

- A permanent water treatment facility would be constructed to treat water extracted from the containment cells. Treated water would be discharged to the North Shore Sanitary District or on-site.

OMC, as directed by the Consent Decree, created the Harbor Trust to effect the cleanup remedy. In April 1989, the Harbor Trust hired a remedial contractor to design and perform the cleanup of the site. The major remedial activities at the site included:

- Remedial design for the treatment and containment of PCB-impacted soil and sediments in Waukegan Harbor and the on surrounding land.

- Excavation and construction of a new boat slip for the relocation of Larsen Marine Service from Slip No. 3.

- Isolation of former Slip No. 3 for the removal of PCB-contaminated sediments for treatment and for the containment of Upper Harbor sediments by installing vertical sheet piling, slurry walls, and synthetic liner cap and soil cover.

- Hydraulic dredging of designated sediments in Slip No. 3 for thermal treatment and hydraulic dredging of designated Upper Harbor sediment for placement in Slip No. 3 for containment.

- Construction of two containment cells (the East and West containment cells) on the northern area of the site by installing slurry walls and capping with synthetic liners and soil covers.

- Restoration of the North Ditch by excavation of designated sediments, placement in the West containment cell, and backfilling the North Ditch with clean sand.

- Construction and operation of water treatment plants to treat waters generated during construction and operation of the remedial action.

- Installation and operation of an extraction well system at each containment cell to maintain an inward hydraulic gradient.

Final construction activities for OUs 1 and 3 were completed in December 1994. By then, OMC's contractor had excavated over 30,000 cubic yards of sediment and soil from the harbor and upland areas and had thermally treated a total of 12,750 tons of PCB-contaminated soil and sediment. The treatment process consisted of anaerobic thermal desorption of the PCB oil from the soil. Approximately 30,000 gallons of PCB oils were removed from the contaminated soil and disposed of off-site and the treated

soil was placed into the containment cells.

As the remedy was performed, a number of modifications were made to the system design due to site conditions. The more significant modifications include:

- The slurry walls were, on average, keyed 3.5 rather than 3.0 feet into the underlying till.

- Obstructions at the surface of the clay/till layer at all three containment cells were discovered while attempting to set the slurry wall. Two of the three cells required modification to the slurry wall alignment.

- Soils contaminated with PAHs were discovered in the area proposed for the replacement boat slip. As a result, the location of the new slip and slurry wall alignment were changed, and the Coke Plant property was designated as OU 2.

- A temporary storage area was constructed on the Coke Plant property to manage the PAH-contaminated soils removed from the replacement boat slip.

OMC began to operate and maintain the PCB containment cells in 1993 and had done so until it declared bankruptcy in December 2000. OMC submitted quarterly reports that chronicled the work performed to maintain the inward hydraulic gradient, analyze groundwater samples, and maintain the HDPE and topsoil cap over the cells.

Initially, OMC maintained an inward gradient by pumping each containment cell nearly dry and treating the pumped water with a mobile carbon-filtration system. This severe approach required a significant draw down in each cell and may have resulted in increased groundwater inflow into the containment cells and, subsequently, a larger volume of water requiring treatment. In an attempt to minimize the volume of water needing treatment and for ease of long-term management, OMC added permanent dual series carbon treatment systems to each of the containment cell extraction systems in 1996. This modification allowed for a more routine extraction rate, yielding a less severe hydraulic gradient within a containment cell.

Waukegan Coke Plant

U.S. EPA signed the ROD for the Coke Plant (OU 2) in September 1999. We are in the remedial design phase as of the date of this Five-Year Review, with initial construction activity scheduled to begin in 2003 upon completion of the soil cleanup design documents. The selected remedy consists of the following tasks:

- The stockpile of PAH-contaminated soil generated from the new slip construction and impacted soil from other areas of the site would be excavated and sent off site for treatment by power plant co-burning or for disposal in a suitable landfill.

- Arsenic-contaminated soil would be either solidified/stabilized in place or excavated and disposed of in an off-site landfill.

- Marginally-contaminated soils (as defined in the ROD) would be covered by a combination of asphalt (parking lot), building, and/or vegetated soil cover (cap).

- A soil management plan would be developed for the site to aid in site re-use efforts.

- A mobile pump and treat program would be developed to remove grossly contaminated groundwater from beneath the site. Water would be pumped from individual cells on a rotating basis and treated to remove contaminants. Treated water would be reinjected into the aquifer upgradient from the pumping wells.

- After groundwater cleanup targets are met through the pump and treat task, a Monitored Natural Attenuation (MNA) remedy would be implemented to ensure that the remaining groundwater contaminant levels decrease to acceptable levels over time.

- Institutional controls, such as deed notices, and groundwater-use prohibitions would be placed on the property to ensure future site uses are compatible with the cleanup action.

The site soils would be cleaned up to achieve a nominal residual risk of 1×10^{-5} based on an industrial or recreational site re-use scenario. Groundwater would be cleaned up to achieve MCLs for respective contaminants or protective levels, as appropriate, for beneficial uses or protection of Lake Michigan ambient water quality.

U.S. EPA signed an Administrative Order on Consent with North Shore Gas and General Motors in July 2001 to begin the remedial design phase of the cleanup. The two PRPs began the design by further sampling the soils to more fully delineate extent of soil contamination and to determine the feasibility of power plant co-burning versus off-site disposal in a landfill. The Preliminary Design (30% Design) for the soil cleanup action is due in early 2003.

The PRPs conducted a groundwater pilot test in 2000 to observe the effects of different pumping rates for the groundwater cleanup action. They are now using the data during the remedial design phase to set up a groundwater model for the site for use in determining optimum pumping rates. They also performed a groundwater treatability test to determine applicable methods to remove the high levels of ammonia, arsenic, benzene, and phenol from the pumped water. Initial results were mixed, but promising, so another denitrification (ammonia removal) study is planned. The active groundwater cleanup action is tentatively scheduled to begin in 2004 and run through 2008 and then the MNA process would begin.

U.S. EPA will need to implement a Consent Decree with the PRPs to begin the remedial action at the Coke Plant site.

OMC Plant 2

When OMC declared bankruptcy in December 2000, it began a process of shedding all its assets, including its Waukegan-area properties. OMC Plant 1 was sold to a Canadian manufacturing concern, Bombardier, Inc., and is not believed to require action under CERCLA but may be the subject of RCRA permitting issues. OMC Plant 2 had no buyers, so the bankruptcy trustee made a motion in bankruptcy court to abandon the facility. U.S. EPA and IEPA filed an objection, because during an initial RCRA site inspection in 2001 and during a subsequent Superfund removal site assessment in February and March 2002, we discovered that a number of environmentally hazardous conditions existed in and outside the plant. Also, OMC turned over internal documents to us that show that a large chlorinated-VOC plume exists beneath OMC Plant 2.

In August 2002, U.S. EPA, IEPA, and the bankruptcy trustee agreed to a settlement action whereupon the trustee will perform a limited amount of removal actions inside the plant to clean up certain highly contaminated areas or remove chemical containers. Afterwards, U.S. EPA may also perform additional removal actions inside the plant to stabilize hazardous conditions. Once the trustee completes its cleanup action, it will be permitted to abandon OMC Plant 2. U.S. EPA and IEPA continue to pursue funds from the trustee to pay for anticipated long term cleanup needs at OMC Plant 2. When this matter is resolved, IEPA will likely nominate OMC Plant 2 for inclusion into the OMC NPL site listing as OU 4, allowing U.S. EPA to begin an RI/FS shortly thereafter.

Operation and Maintenance

Waukegan Harbor

The Waukegan Harbor operable units (OUs 1 and 3) are the only portions of the site that are in the O&M phase. As recounted above, O&M consists of maintaining an inward hydraulic gradient in the PCB containment cells, inspecting and repairing the containment cell caps and pumping systems, and monitoring water levels and water quality around the cells. OMC performed these tasks under the Consent Decree until it declared bankruptcy in December 2000. The bankruptcy trustee has performed these tasks following the bankruptcy declaration, but once OMC Plant 2 is abandoned, it will no longer perform these duties.

OMC is required to maintain an inward hydraulic gradient across the length and width of each PCB containment cell by pumping groundwater from each cell. The pumped water is treated to remove PCBs before it is discharged to the harbor or the North Ditch. OMC must also demonstrate the inward gradient by periodically taking water level measurements inside and outside of the cells. OMC is required to issue quarterly

reports to U.S. EPA detailing the O&M actions it undertook at the site.

OMC is also required to routinely inspect and make timely repairs to the covers of the three containment cells as appropriate. The surfaces of the final covers consist of either bituminous concrete or top soil overlying a drainage layer and a high density polyethylene synthetic liner. The bituminous concrete cover is inspected each spring during the post-closure care period. Cracks are sealed with asphalt sealer and potholes or other deterioration of the asphalt surface are repaired. The vegetative cover is also inspected each spring. Any gullies or washouts in the top soil are backfilled, compacted, reseeded and mulched with an appropriate material. Stressed or dead areas of vegetation will be similarly treated. The vegetated areas are mowed at least twice per year and fertilized occasionally.

OMC is also required to periodically monitor groundwater quality around the containment cells. This requirement consists of detection monitoring, compliance monitoring and corrective action programs. The detection monitoring program addresses the routine, ongoing monitoring of the containment cell function. Compliance monitoring is implemented if detection monitoring identifies a change that may suggest a deterioration in the function of any containment cell. If compliance monitoring determines that contaminants (PCBs) from a containment cell are migrating beyond the slurry walls, then corrective action will be taken. A total of 12 ground water wells were installed after completion of the slurry walls. These wells were analyzed for PCBs quarterly for the first two years and semi-annually for the remainder of the post-closure period.

Table 2, below, gives annual costs of O&M according to Harbor Trust records. These costs do not include internal OMC costs for reporting and staff time.

Table 2: Annual O&M Costs - Waukegan Harbor

Dates		Total Cost (nearest $1,000)
From	To	
1998	1999	$ 25,000
1999	2000	$ 45,000
2000	2001	$ 21,000

The reported O&M costs are consistent with routine O&M tasks, with some repair work reflected in 1999-2000 costs.

Waukegan Coke Plant

As stated previously, during the construction of the replacement boat slip the excavators discovered soil contaminated with PAHs. These soils were placed in a lined temporary stockpile area and covered with a high density polyethylene liner. A sump is routinely measured for liquid accumulation within this stockpile and pumped out as needed. The condition of the cover is inspected monthly.

V. Progress Since the Last Review

Waukegan Harbor

U.S. EPA reported in the first Five-Year Review that construction of the Waukegan Harbor remedial action was completed and that an inward hydraulic gradient had been attained in the containment cells. We also noted that the treatment system was meeting the discharge requirements and ground water sampling did not indicate the presence of PCBs moving out of the containment cells. We therefore recommended that operation of the remedy components, as designed, occur until the appropriate ROD and Consent Decree requirements were met. This action has occurred.

Accordingly, U.S. EPA declared that the remedy was protective of human health and the environment because it was operating as designed. This declaration is now subject to revision as discussed in Sections VII and VIII, below, of this report.

Waukegan Coke Plant

U.S. EPA reported in the first Five-Year Review that construction of the Waukegan Harbor remedial action resulted in the discovery of what is now the Coke Plant operable unit. Although no specific recommendation was made in the first Five-Year Review, we anticipated that appropriate remedial actions would be undertaken at the Coke Plant site in the future. These actions are ongoing and we anticipate that cleanup construction work will be completed in 2004, assuming that a CD has been entered into by U.S. EPA and the PRPs, and that groundwater pump and treat will be finished in 2008.

U.S. EPA made no protectiveness determination for the Coke Plant operable unit in the first Five-Year Review.

OMC Plant 2

This is the first Five-Year Review for this (pending) operable unit.

VI. Five-Year Review Process

Administrative Components

U.S. EPA began the second Five-Year Review at the site in Summer 2002. The site remedial project manager (RPM), during routine discussions about the various parts of the OMC site, verbally notified the Coke Plant PRPs, the bankruptcy trustee, and IEPA that he was beginning the review and that they were encouraged to comment on the review process.

Community Involvement

U.S. EPA verbally notified the Waukegan Community Advisory Group (CAG) in Summer 2002 that we were beginning the Five-Year Review. We notified the members by attending and announcing the start of the review at a monthly CAG meeting and by telephoning one or more of the CAG leaders.

U.S. EPA notified the Waukegan community of the start of the Five-Year Review by publishing an advertisement in a newspaper of general circulation. Because there is a large Hispanic community in Waukegan that lives near the site, we had placed the ad, in Spanish, in a newspaper that serves this part of the community.

In each case U.S. EPA invited community members to submit any comments to us.

A summary of the comments received follows:

Waukegan Harbor

With the bankruptcy declaration by OMC a prelude to abandonment of the unsold lakefront properties, several people have expressed concerns over who would operate and maintain the PCB containment cells in the future. In addition, with PCB levels in fish still a concern (see Data Review section, below), the CAG is concerned that there may still be a source of PCB contamination moving from OMC Plant 2 into the harbor.

Waukegan Coke Plant

Although the cleanup of the Coke Plant operable unit is in the design phase, the City of Waukegan has very recently proposed that the zoning designation for the site be changed to residential from marine recreational/industrial. Several people, including the Coke Plant PRPs, have expressed reservations about this proposal. Aside from the implied impacts on the remedy selected in the 1999 ROD, commenters have indicated that this is a premature act by the city since the Coke Plant has not been cleaned up yet and the adjacent OMC Plant 2 may become another operable unit, requiring years of study and then clean up.

OMC Plant 2

Several people have expressed an interest in the re-use of OMC Plant 2 facilities as light industrial or storage facilities. They hope that U.S. EPA can help clean up the building and grounds to assist in redevelopment of the property. One commenter stated a fear that the city would rezone OMC Plant 2 as residential as well, despite the extensive amount of data indicating significant contamination at the facility.

Document Review

U.S. EPA reviewed relevant site documents for the various operable units at the OMC site. The RPM was assigned to this site after completion of construction of the Waukegan Harbor remedy and the signature of the Coke Plant ROD. Accordingly, the Remedial Action completion report submitted by OMC and U.S. EPA's First Five-Year Review were reviewed for background information on the Waukegan Harbor site actions and the Coke Plant ROD and various remedial design phase documents were reviewed for background information on the Coke Plant site. In addition, the quarterly OMC reports on O&M, harbor fish analysis data provided by IEPA, and the May 2002 Removal Site Inspection Report for OMC Plant 2 were reviewed. The most recent OMC quarterly report predates the December 2000 bankruptcy declaration. A complete list of documents reviewed is attached.

Data Review

Waukegan Harbor

OMC regularly submitted quarterly reports to U.S. EPA describing its O&M efforts for the PCB containment cells. The reports were submitted in accordance with the Consent Decree and O&M was performed in accordance with the approved O&M Plan. We reviewed the reports for the time period after the First Five-Year Review was released until just before the reports stopped being submitted due to the December 2000 bankruptcy declaration. From 1998-2000, we find that OMC properly maintained an inward hydraulic gradient in the containment cells and that no PCB movement from the cells was occurring. The containment cell covers were properly maintained. OMC performed pump maintenance during this period and replaced defective parts as appropriate. Groundwater monitoring did show that chlorinated VOCs were present in the area of the containment cells. Lastly, we received verbal assurances from the bankruptcy trustee that it had hired a contractor to perform routine O&M tasks associated with the containment cells while bankruptcy proceedings occur. This work will end, however, when the trustee is allowed to abandon OMC Plant 2, so U.S. EPA and IEPA will need to perform these duties sometime in the near future.

U.S. EPA reviewed fish analysis data provided by the IEPA for samples taken in Waukegan Harbor. The U.S. Food and Drug Administration (FDA) action level for

PCBs in fish (carp) is 2.0 ppm. Since the harbor dredging was completed, average PCB levels in carp have fallen from 19 ppm PCBs (1991 sample) to between 2.6 ppm and 5.1 ppm (1994 -1996 samples). More current samples (1997-2000) show that PCB levels are holding steady at about 4-5 ppm, still above the FDA action level, and may be increasing again. This may be a sign that there is still a significant PCB source in the harbor area that needs to be addressed.

U.S. EPA also reviewed the "Endangerment Evaluation of Human Health Risks at the OMC Site" (2002) produced by U.S. EPA for use in the bankruptcy proceedings. The report summarizes PCB levels found at OMC Plant 2 and concludes that the plant could still be a significant source of PCBs in the harbor.

Waukegan Coke Plant

While the RPM reviewed relevant Coke Plant documents for site background information, no cleanup actions have begun on this operable unit. We anticipate that the Third Five-Year Review for the OMC site will address the cleanup actions scheduled to be taken at the Coke Plant.

OMC Plant 2

Upon declaration of bankruptcy by OMC in December 2000, technical and legal staff from U.S. EPA's Superfund and Resource Conservation and Recycling Act (RCRA) Permitting Branch began to assess the situation with concern for the Consent Decree tasks that need to be continued, facility closure issues, and overall Superfund site cleanup issues. One action we undertook was a Discovery Site Visit (removal site inspection) in March 2002. A report was issued that discusses our findings (Discovery Site Visit Report, May 2002). Our site inspection revealed the presence of a large chlorinated-VOC plume beneath the plant, various chemical compounds (e.g. acids) left behind in the empty plant, and pipe chases filled with oily aqueous solutions some of which may contain PCBs. Some of these findings are being addressed by the trustee's cleanup action at OMC Plant 2, but significant cleanup work, both short term and long term, will still be needed. We anticipate that the Third Five-Year Review for the OMC site will address cleanup actions U.S. EPA and IEPA will have taken at OMC Plant 2.

As mentioned above, U.S. EPA also reviewed the "Endangerment Evaluation of Human Health Risks at the OMC Site" (2002) produced for use in the bankruptcy proceedings. The report summarizes PCB levels found at OMC Plant 2 and concludes that the plant actually or potentially is a significant source of PCB exposure to plant workers.

Site Inspection

Before U.S. EPA performed the Discovery Site Visit/site inspection we performed

several general site inspections at the Coke Plant, Waukegan Harbor, and OMC Plant 2 areas. RCRA staff inspected OMC Plant 2 in July 2001 and made initial reports about plant environmental conditions. The RPM inspected the Coke Plant site in July 2001 and several times in 2002 as a course of duties during site visits to observe pre-design and design phase activities. The Discovery Site Visit/site inspection was held in February 2002 (general OMC Plant 2 walk-through to designate sampling points) and March 4-6, 2002 (sampling effort).

As a result of the various site inspections, U.S. EPA finds that the Waukegan Harbor containment cells are functioning as designed and that the covers are not breeched. The Coke Plant remedy has not begun, but in general the site is secured by a chain link fence to prevent casual trespassing on impacted areas. Lastly, OMC Plant 2, while somewhat secured by a chainlink fence, will be an attractive nuisance for scavengers and others upon abandonment by the trustee and it should be addressed through the Superfund program.

Interviews

U.S. EPA did not formally interview members of the public about the protectiveness of the remedial actions at the OMC site. However, during the bankruptcy proceedings, the Chief of Police for the City of Waukegan indicated in a deposition that abandonment of OMC Plant 2 would likely overly tax the police force's capability to provide protective services in the area.

VII. Technical Assessment

U.S. EPA asked the following three key questions during our technical assessment of the OMC site cleanup to provide the basis for our protectiveness determination(s). Our conclusions are based on the information reviewed in the previous sections:

Question A: Is the remedy functioning as intended by the decision documents?

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RADS) used at the time of remedy selection still valid?

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Question A -Is the remedy functioning as intended by the decision documents? - only applies to the Waukegan Harbor operable unit.

U.S. EPA's analysis shows that the remedy was and is functioning as designed, for the containment cells are easily maintained and no outward hydraulic gradients or

movement of contaminants from the cells were noted. U.S. EPA and/or IEPA will have to take on the O&M duties for the cells in the near future, however, once the bankruptcy trustee is allowed to abandon OMC Plant 2. Routine operation and maintenance of the cells will maintain the effectiveness of the containment cells.

U.S. EPA identified no opportunities to optimize performance of O&M - this was done during the previous Five-Year Review period (OMC installed carbon treatment units at each cell to minimize the amount of groundwater pumped from each cell to achieve an inward gradient).

Equipment replacement rates appeared to be normal. Sufficient resources will need to be directed to the site by U.S. EPA, IEPA, or others to maintain the effectiveness of the containment cells over the long term.

Question B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RADS) used at the time of remedy selection still valid? - applies to the Waukegan Harbor and Coke Plant operable units.

Changes in Standards and TBCs.

With respect to the Waukegan Harbor operable unit, the cleanup level for PCBs in harbor sediments was set at 50 ppm in the ROD and is a "To Be Considered (TBC)" cleanup level[1]. This level was thought to be protective of human health in the harbor area based on a sought-for reduction of PCB levels in fish in the harbor that potentially are consumed by fishermen and their families. A reduction of PCB levels in the sediment would reduce PCB levels in fish which, in turn, would reduce the amount of PCBs consumed by those who eat the fish. Following the dredging of the harbor, fish (carp) sample analyses show that PCB levels have declined, but they remain above the FDA action level for PCBs in fish. And, given that U.S. EPA is now setting PCB cleanup levels at other sediment sites in the nation as low as 0.25 to 1.0 ppm, it is clear that the cleanup level for PCBs in the harbor should be re-evaluated to ensure that it remains protective.

With respect to the Coke Plant operable unit, the cleanup levels for the soil and groundwater contaminants are based on site-use assumptions. No changes in standards or TBCs are noted.

Changes in Exposure Pathways

With respect to the Waukegan Harbor operable unit, OMC Plant 2 has been identified as a source of PCB contaminants in the past and probably still is. With current PCB levels in fish above the FDA action level, the 50 ppm PCB cleanup level for the harbor

[1]There are no promulgated federal PCB cleanup levels.

sediments needs to be re-evaluated.

With respect to the Coke Plant operable unit, the Waukegan recently acquired the property through the OMC bankruptcy proceedings. The city is now proposing to rezone the Coke Plant from marine recreational/industrial to residential. This could change exposure assumptions, for a residential use implies an unlimited exposure, unlimited site-use assumption for the Coke Plant property. This could impact the cleanup levels set in the 1999 ROD and, in turn, a change in cleanup levels could impact the selected remedy in the ROD.

Question C - Has any other information come to light that could call into question the protectiveness of the remedy? - applies to the OMC Plant 2 operable unit.

Although no cleanup remedy has yet been selected for OMC Plant 2, the abandonment of the property by the bankruptcy trustee will cause an impact on human health and the environment should trespassers access the property and/or PCBs or other contaminants be released to the environment. For example, OMC Plant 2 is likely a continual source of PCBs to Waukegan Harbor, thus further harbor sediment sampling and analysis is likely needed to confirm whether cleanup levels are still being met.

Technical Assessment Summary

Waukegan Harbor

According to data reviewed and the site inspection, the PCB containment cells were and likely still are being operated and maintained properly. Thus, the remedy is functioning as intended by the ROD. However, the 50 ppm cleanup level for PCBs in harbor sediments may not be protective, based on PCB levels in fish remaining above the FDA action level and that current PCB cleanup levels at sediment sites are being set as low as 0.25 -1.0 ppm. OMC Plant 2 may be a continual source of PCB contaminants to the harbor, calling into question the protectiveness of the remedy.

Waukegan Coke Plant and OMC Plant 2

No remedial action has been completed at the Coke Plant and (pending) OMC Plant 2 operable units. However, since OMC Plant 2 is to be abandoned by the bankruptcy trustee, the protectiveness of the site remedy may be affected as releases would be uncontrolled. The City of Waukegan has purchased the Coke Plant property and may try to rezone it to residential, contrary to the ROD land-use assumption. This may affect the protectiveness of the selected remedy and cause a delay in implementation of the remedy if it needs to be re-evaluated.

VIII. Issues

Table 3, below, presents issues identified during the Second Five-year Review.

Table 3: Issues

Issue	Affects Current Protectiveness?	Affects Future Protectiveness?
OMC Plant 2 to be abandoned	No	Yes
50 ppm PCB in sediments did not fully reduce fish PCB levels	Yes	Yes
City of Waukegan to rezone Coke Plant property to residential	No	Yes

IX. Recommendations and Follow-up Actions

Table 4, below, presents U.S. EPA recommendations and follow-up actions for the issues identified ~~in~~ Table 7.

Table 4: Recommendations and Follow-up Actions

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness?	
					Current	Future
OMC Plant 2	OMC Plant 2 becomes OU 4 of OMC site	IEPA nominate to NPL	U.S. EPA	6/30/2003	Yes	Yes
50 ppm PCBs	Further sample sediments and fish in harbor; re-evaluate cleanup level	IEPA and U.S. EPA	U.S. EPA	9/30/2003 sampling, 9/30/2004 evaluate level	No	Yes
Re-zone Coke Plant?	Identify impacts on selected remedy, if any	U.S. EPA and IEPA	U.S. EPA	6/30/2003	No	Yes

X. Protectiveness Statement(s)

Waukegan Harbor

Over the short term, U.S. EPA has determined that the remedy at the Waukegan Harbor operable units (OUs 1 and 3) is protective of human health and the environment because the cleanup is complete and the remedy is operating as designed.

U.S. EPA is deferring its long term protectiveness determination of the remedy at the Waukegan Harbor operable units (OUs 1 and 3) however, until further information is obtained. We will evaluate the protectiveness of the 50 ppm PCB cleanup level in the harbor sediments by re-sampling the sediments to determine average PCB levels in the harbor and by evaluating the impacts of the PCB levels on fish PCB levels. We expect that these actions will take approximately one to two years to complete, at which time we will be able to make a protectiveness determination, either in the next Five-Year Review or, if necessary based on our new data review, in a ROD amendment in which we select a different PCB cleanup level for the harbor sediments.

Waukegan Coke Plant

The remedy at the Coke Plant operable unit (OU 2) is expected to be protective of human health and the environment upon completion, and in the interim, exposure pathways that could result in unacceptable risks are being controlled.

OMC Plant 2

The situation at (pending) OU 4 is not protective because the property is slated to be abandoned by the OMC bankruptcy trustee. There are multiple contaminants in and around OMC Plant 2 that may cause actual or potential exposure to hazardous substances. Over the short term the site fences may provide a barrier to casual site users (trespassers), but over the long term the abandoned buildings would become an "attractive nuisance" and be subject to intrusion by scavengers. The site fences do nothing to check the movement of hazardous substances from the groundwater into Lake Michigan or Waukegan Harbor.

The following actions need to be taken to ensure protectiveness: upon abandonment of OMC Plant 2 by the trustee, IEPA should add OMC Plant 2 to the OMC NPL site description, making it eligible for remedial action under the Superfund statute. Next, U.S. EPA, in consultation with IEPA, should immediately begin an RI/FS at the site to determine the nature and extent of hazardous substances at the site and provide cleanup alternatives for them. U.S. EPA should also undertake necessary removal actions at OMC Plant 2 to reduce immediate threats to human health and the environment.

XI. Next Review

U.S. EPA will conduct the third Five-Year Review for the OMC site on or before September 30, 2007, which is five years after the second Five-Year Review.

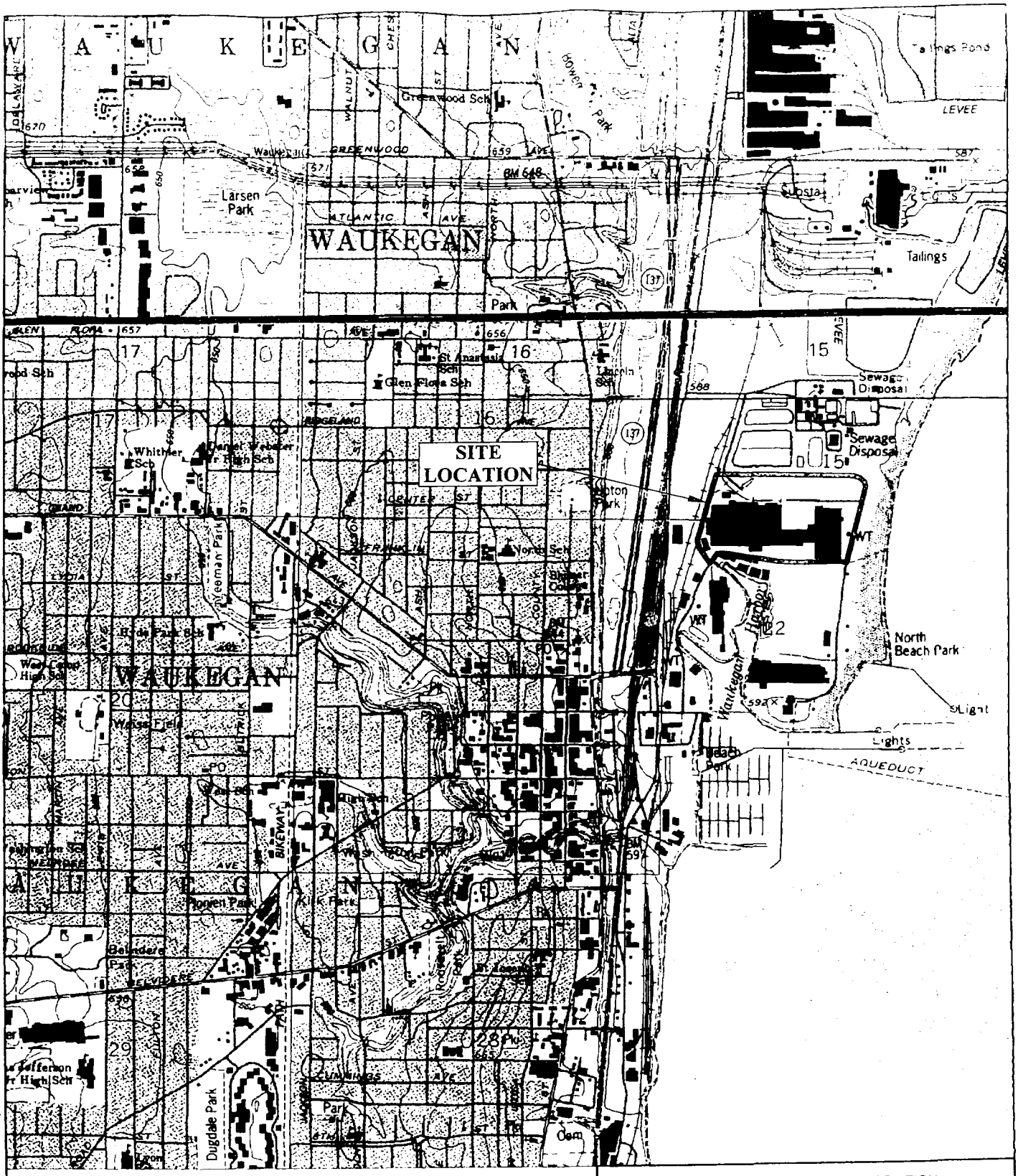
Attachments

Figures 1 and 2: Site Maps
List of Documents Reviewed

Appendix

Comments received from the community

Attachments



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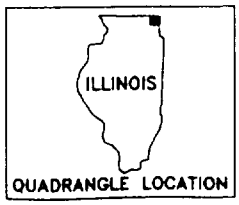


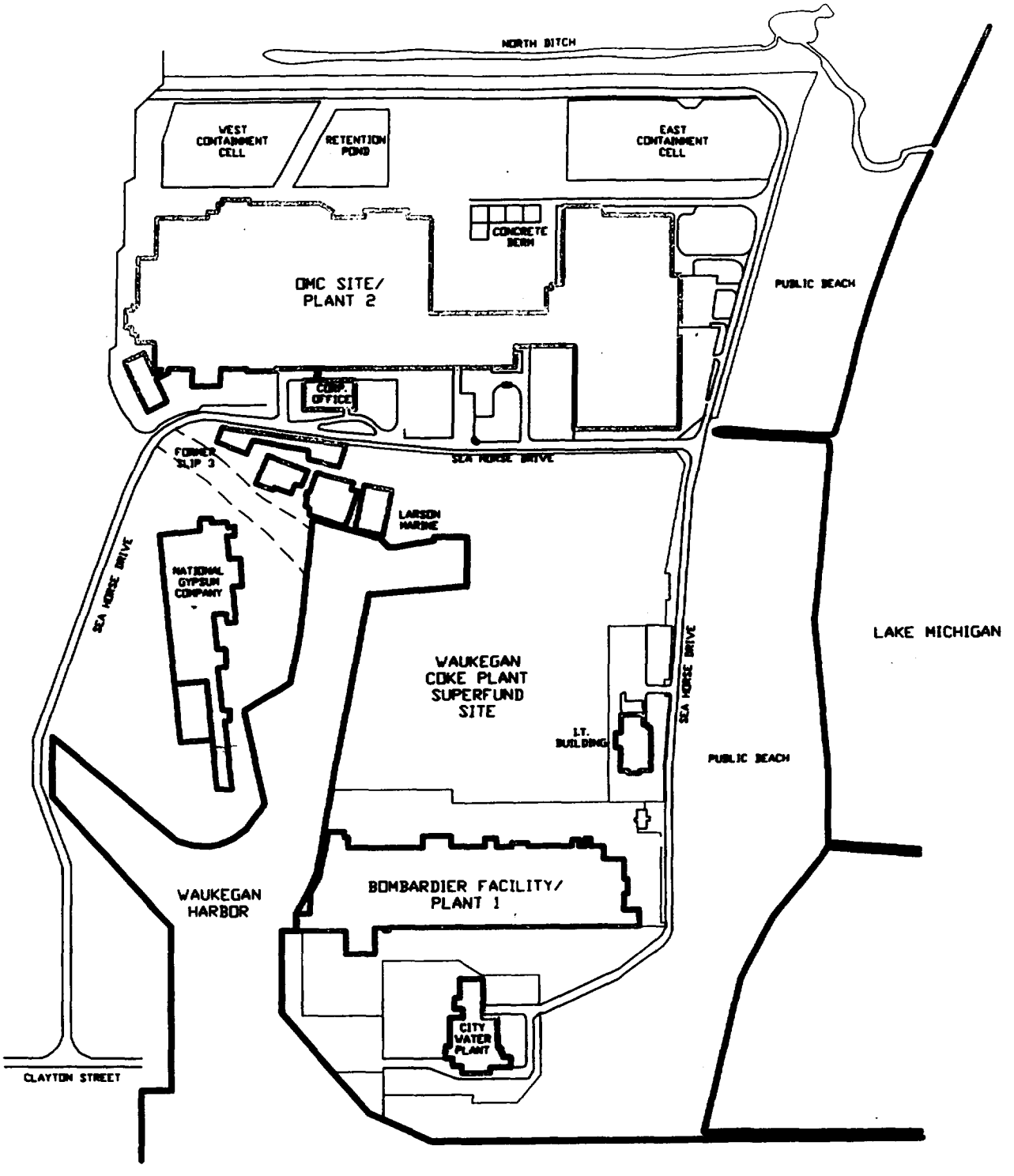
OUTBOARD MARINE CORPORATION
WAUKEGAN, LAKE COUNTY, ILLINOIS
S05-0202-004

FIGURE 1

SITE LOCATION

SOURCE: MODIFIED FROM USGS, 1993 a and b

-OUTBOARD MARINE CORP\ FIGURE 1



LEGEND

- BUILDING
- FENCE
- WATER
- AREA BOUNDARY
- WALL

0 250 500
SCALE IN FEET

SOURCE: OMC 2002

OUTBOARD MARINE CORPORATION
WAUKEGAN, LAKE COUNTY, ILLINOIS
S05-0202-004

FIGURE 2

SITE FEATURES

-OUTBOARD MARINE CORP\ FIGURE 2

List of Documents Reviewed

1. First 5-Year Review for OMC site (September 1997)
2. Quarterly O&M Reports for OUs 1 and 3 (1998-2000)
3. Waukegan Coke Plant (OU 2) ROD (September 1999)
4. Discovery Site Visit Report (Removal Assessment) OMC Plant 2 (May 2002)
5. Fish Sampling Data - IEPA (1998-2001)
6. OU 2 Remedial Design Documents (2001)
7. O&M Plan for Waukegan Harbor (1999)
8. "Endangerment Evaluation" for OMC site (2002)
9. Remedial Action Completion Report (OUs 1 and 3)(1995)

Appendix

Waukegan Harbor Citizens Advisory Group

55 Harbor Place - P.O. Box 297
Waukegan, Illinois 60079
Phone 847-244-3133 Fax 847-244-1348
http://nsn.nslsilus.org/wkkhome/iepa

Members

Abbott Laboratories
Akzo Nobel
Carol Dorge, Attorney
City of North Chicago
City of Waukegan
College of Lake County
Commonwealth Edison
EJ & E Railway
Great Lakes Sport Fishing Council
Illinois Audubon Society
Johns Manville
Kadinger Marine
LaFarge Corporation
Lake County Chamber of Commerce
Lake County Department of Planning
Lake County Health Department
Lake Michigan Federation
Larsen Marine, Inc.
LFR Levine • Fricke
Liberty Prairie Conservancy
Midwest Generation
National Gypsum
North Shore Gas
North Shore Sanitary District
Outboard Marine Corporation
Salmon Unlimited
Sierra Club, Illinois Chapter
Tanner Environmental Company
Waukegan Charter Boat Association
Waukegan Downtown Association
Waukegan Lakefront Development Corp.
Waukegan Park District
Waukegan Port District
Waukegan Yacht Club
Concerned Citizens

Associates

Delta Institute
Illinois Citizen Action
Illinois Depart. of Natural Resources
Illinois Environ. Protection Agency
Illinois-Indiana Sea Grant
Illinois Lake Management Association
Illinois Pollution Control Board
International Joint Commission
Maritime Administration
Northeastern Illinois Planning Comm.
U.S. Army Corps of Engineers
U.S. Environ. Protection Agency
U. S. Fish and Wildlife
University of Illinois- Marine Extension
Waukegan Public Library
Concerned Citizens

August 28, 2002

Mayor Richard H. Hyde
City of Waukegan
420 Robert V. Sabonjian Place
Waukegan, Illinois 60085

Dear Mayor Hyde,

The Waukegan Harbor Citizens' Advisory Group supports the authority of the U.S. Environmental Protection Agency and the Illinois Environmental Protection Agency in their decisions regarding the cleanup of the contamination present on OMC Plant #2 and the Coke Site.

We are strongly against abandonment of the OMC Plant #2 after the November 2002 date set by the Bankruptcy Court. This would further degrade the OMC Plant #2, leaving it wide open for vandalism and possible uncontrolled disbursement of equipment and materials that contain PCBs and other contaminants.

We would prefer to see a responsible party taking ownership of OMC Plant #2 who would work closely with the federal and state Environmental Protection Agencies to resolve and clean up the known contaminants on the property. This will assist us in the final cleanup of the North Channel of Waukegan Harbor and will aid in preventing further contamination of the Federal Navigational Channel.

We agree with the record of decision regarding the remediation of the Coke Site to recreational standards. We remain concerned that if eventual usage of the site conflicts with currently established clean-up objectives it could impede protection of the harbor and hinder harbor clean up.

Respectfully,

Susie Schreiber

Jean B. Schreiber, Chair ("Susie")
Waukegan Harbor Citizens' Advisory Group

Cc:
City of Waukegan Zoning Board
Waukegan Port District
United States Environmental Protection Agency
Illinois Environmental Protection Agency