

# Crab Orchard National Wildlife Refuge CERCLA Fact Sheet



July 1997

General #2

## INTRODUCTION

The progression of clean up activities is continuing on the various operable units at the Crab Orchard National Wildlife Refuge (Refuge). This fact sheet is intended to bring you up to date on those various activities. You can find the referenced documents (underlined) and additional information on this project in the Informational Repositories. Please contact one of the four sites listed on the back page.

## BACKGROUND

From 1941 to 1945, certain portions of the area now designated Crab Orchard National Wildlife Refuge were industrialized by the War Department, predecessor to the Department of Defense, for the manufacturing of munitions. The main munition plant closed in 1945 and other industries were allowed to lease the facilities.

The Refuge was established in 1947 by Congress with a mission to support wildlife, recreation, agriculture, and industry. The U.S. Fish and Wildlife Service (Service) was appointed as the agency to manage the Refuge. Prior to modern environmental laws, it was common practice of industrial facilities, including those on the Refuge, to use unlined landfills and dumps to dispose

of the waste generated by their operations. As a result, a number of locations on the Refuge became contaminated with hazardous waste. This contamination posed an unacceptable risk to human health and the environment including the wildlife at the Refuge.

In 1987, the Refuge was placed on the Superfund National Priorities List (NPL), which is the national list of hazardous waste sites prioritized for cleanup. Superfund is the common name for the law Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and its amendments.

The cleanup at the Refuge has been divided into seven projects, or Operable Units (OUs), one of which was a removal action. They are:

- Metals Areas OU
- Polychlorinated Biphenyls (PCB) Areas OU
- Miscellaneous Areas OU
- Explosives and Munitions Manufacturing Areas (EMMA) OU
- Water Towers Areas OU
- Additional & Uncharacterized Sites OU
- Crab Orchard Lake OU

The Additional and Uncharacterized Sites and Crab Orchard Lake OUs are



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two new operable units recently established.

A Federal Facility Agreement was signed between the U.S. Environmental Protection Agency (USEPA), the Department of the Interior, the Department of the Army and the Illinois Environmental Protection Agency (IEPA) setting forth the role of each agency in the clean up. The Service, on behalf of the Department of the Interior, is the lead agency responsible for conducting activities at all operable units except the EMMA OU. At the EMMA OU, the Army Corps of Engineers on behalf of the Department of Army is the lead agency.

### **METALS AREAS OPERABLE UNIT**

A major milestone in the cleanup of the Refuge was achieved. Construction activities for remediation were completed in October 1996. Restoration activities, which will include tree planting, will be completed this fall. The cleanup focused on three sites contaminated with cadmium, chromium, lead, cyanide, and asbestos.

The U.S. Army Corps of Engineers managed the remediation contracts for the Service. Remediation for the Metals Areas Operable Unit was accomplished using Heritage Remediation and Engineering, R & R International, and Applied Research and Development.

Remediation involved excavating 46,000 cubic yards of contaminated soil and placing it in an on-site landfill, located near Ogden Road. The solid waste landfill, 3-acres in size, was designed to contain the disposed waste. Approximately 12,800 cubic yards of the material were treated because they contained high levels of the heavy metals, cadmium or chromium. Those soils were treated by mixing with either fly ash or concrete to stabilize the material before placing it in the landfill. This technique rendered the soil a non-hazardous waste.

Excavation activities were expanded to include the drainage ditches and catch basins of the West Shop area. The West Shop Area is an industrial area remaining from World War II days which has been leased to businesses including munitions packaging and warehousing, metal plating, electric and communication services and others.

On-going monitoring and site maintenance will continue to ensure the environmental integrity of the area.

### **PCB AREAS OPERABLE UNIT**

Recently, Schlumberger Industries, Inc. (Schlumberger) announced completion of Thermal Treatment Operations at the PCB Areas OU. Demobilization activities for the incinerator began June 16, 1997. Schlumberger estimates that it will take four months to demobilize the incinerator plant and associated

buildings, remove them from the site, and restore the plant areas to grassland conditions.

Schlumberger committed in 1991 to conduct cleanup as a party to the federally binding Consent Decree agreement. Construction activities for remediation of the PCB Area Operable Unit were initiated in 1995 and will continue throughout 1997. The cleanup of the PCB Areas Operable Unit focused on four sites. The Department of the Interior cost shared a portion of the total estimated cost of \$ 42 million. The main contractors included Fluor Daniel, Inc., Maxymillan Technologies, and R & R International.

The cleanup involved a series of mobilization activities (i.e. building construction and utilities), landfill construction, lake embayment berming, clearing and grubbing, excavation, thermal treatment, stabilization as necessary, site restoration, and landfill capping.

Installation of the thermal treatment unit (incinerator) was completed in April 1996. Following a testing period, including air emission analysis, final operating approval of the incinerator unit was given by USEPA in December 1996.

Approximately 117,000 tons of PCB, lead, and cadmium contaminated soils/sediments were excavated and incinerated. A landfill was constructed on the Refuge to handle the soils

containing metals contamination following incineration of the soil. Ash and low-level contaminated PCB soils were placed into the excavation at the site where the majority of the contamination was located. This area was covered with treated and clean soil.

The Service will continue on-going monitoring and site maintenance to ensure the environmental integrity of the area.

Chlorinated solvent contamination was discovered under a demolished building. Schlumberger, USEPA, IEPA, and the Service are working on what actions need to be taken.

### **Miscellaneous Areas Operable Unit**

The Remedial Investigation for the Miscellaneous Areas Operable Unit was completed. This investigation looked at twenty-four sites for potential impacts to humans, wildlife, and the environment. The US Army Corps of Engineers managed the investigative stage for the Service.

Preparation of the Feasibility Study was initiated with completion expected in 1998. In this study, various cleanup alternatives are under consideration at three sites. One of the sites is an active waste water treatment plant with contaminated sediments in the lagoons. Further sampling is planned to give us additional information needed to support a proposal for cleanup.

At one of these three sites, the former wood treatment facility (Site 22A) cleanup was completed as a Removal Action. The Removal Action included excavation of approximately 7,000 cubic yards of pentachlorophenol/dioxin contaminated soils, disposal to the on-site Metals Area Operable Unit landfill, backfilling clean soils, and placement of a gravel barrier.

At the third site, an industrial operation, further sampling of groundwater and soils is planned to give us additional information needed to support a proposal for cleanup.

### **Explosives and Munitions Manufacturing Areas Operable Unit**

The U.S. Army Corps of Engineers, on behalf of the Department of Army, and USEPA signed the Record of Decision selecting a cleanup method for two sites after full consideration of public comment. The remedy provides for excavation of explosive contaminated soils containing greater than 10% explosives, and removal off-site for thermal destruction. The remaining contamination will be covered with two feet of soil. Remediation is expected to begin in 1998.

U.S. Army Corps of Engineers completed a Removal Site Investigation in July 1996 looking at areas of the Refuge for the presence of unexploded ordnance items remaining from World

War II. This investigation consisted of geophysical surveys and excavations, and visual inspections of areas of refuge suspected of containing surface or subsurface unexploded ordnance (UXO) items from World War II. Geophysical surveys and excavations were done on approximately 75 sampling grids. Four large areas were 100% visually inspected. Pieces of ordnance items recovered during the investigations included pieces of M1 and M1A1 anti-tank mines, booster cups, and mine components. Approximately 2,077 pounds of ordnance and non-ordnance scrap were recovered as part of the investigation. Thirty items including M-1 mines, boosters, fuzes, smoke grenade, and propellant as well as cartridges to slot flares from the Fire Station Landfill were detonated during two separate events.

The U. S. Army Corps of Engineers is evaluating response action alternatives which range from no action, reforestation/limited removal, to removal land use/access restrictions. The Army is planning a public meeting in late fall to present the various alternatives. Representatives of the Army will be on hand to talk to people interested in the proposal and to hear any ideas or concerns about the project. The public will be invited to provide comments.

## **Additional and Uncharacterized Sites Areas Operable Unit**

In meetings with former and current employees who worked for industry and the refuge, along with the examination of historical aerial pictures, other sites were identified that were not part of the original O'Brien and Gere Investigation. Currently, there are 81 additional sites that have been identified. Investigation of these sites will begin in 1998.

## **Crab Orchard Lake Operable Unit**

This operable unit was recently created for the purpose of studying whether there might be contamination migrating into the lake and to verify the effectiveness of the completed remediation. Samples of the water and sediment will be collected to identify contaminants.

A small portion of the lake was dredged in the fall of 1996 to remove PCB contaminated sediments. There is a health advisory in-place for the consumption of carp larger than 15 inches, caught east of Route 148. Large carp contain unacceptable levels of PCBs and thus the advisory to limit consumption of carp for different groups of people, i.e. children and expectant mothers. Fish will be collected and tested for contaminants to evaluate the continuance of the fish consumption

advisory.

We are looking at the health of the wildlife to give an indication of what may be happening at the site. For the past two years, we have collected blood samples from eaglets to assess whether there may be elevated levels of PCBs and other contaminants.

Past starling studies conducted by the Southern Illinois University concluded that there was decreased nesting success associated with PCB contamination. These studies might show what could be happening to other neomigratory bird species at the site.

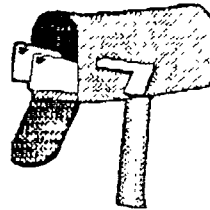
The Service is looking to continue other biomonitoring studies to confirm the success of remediation.

## **Restoration Plan**

The U.S. Fish and Wildlife Service has developed a Restoration Plan to use funds received for partial compensation of natural resource injuries. These injuries resulted from releases of PCBs at the PCB OU.

The Plan calls for planting 1500 acres of hardwood trees, planting of native prairie grasses on 500 acres, and the addition of about 250 acres to the 43,500 acre Refuge. Environmental education and some shoreline stabilization are also planned. It is an essential part of the restoration process

to be involved. Information and feedback received from the public will be used by the Service in determining the final plan.



Please send us your updated 9-1-1 address change.

*For Further Information...*

Copies of the Administrative Record File have been established to contain all the information used by the USEPA to make their final decisions on the selection of a clean up method. Their purpose is to provide public access to site-related information so they may make informed comments. Additional background information and other site related documents are also available for review at the following locations.

Crab Orchard National Wildlife Refuge  
8588 Rt 148 Marion, IL  
Contact: Leanne Moore (618) 997-3344

SIU Morris Library - 7th Floor  
Southern Illinois University Carbondale, IL  
Contact: Reference Librarian (618) 453-2818

Marion Carnegie Library  
206 S Market St Marion, IL  
Contact: Reference (618) 993-5935

Carbondale Public Library  
405 W Main St Carbondale, IL  
Contact: Reference (618) 457-0354

Each agency has assigned Project Managers who serve as key team members. Those Project Managers are: Nan Gowda at USEPA, (312) 353-9236; Stephen Nussbaum at IEPA, (217)782-9803; and Leanne Moore and Mark Sattelberg at the Crab Orchard National Wildlife Refuge, (618) 997-3344.

Each Federal and State Agency has a Community Relations Coordinator who serves as a primary point of contact and is also available to assist you.

USEPA, Region V  
Attn: Derrick Kimbrough  
77W Jackson Blvd  
Chicago, IL 60604  
(312) 886-9749

IEPA  
Attn: Michelle Nickey-Tebrugge  
2200 Churchill Road  
Springfield, IL 62794-9276  
(217) 524-4825

USFWS  
Attn: Georgia Parham  
620 S Walker Street  
Bloomington, IN  
(812) 334-4261

USEPA offers TECHNICAL ASSISTANCE GRANTS (TAGs) to community groups who wish to obtain qualified technical support in reviewing technical study documents generated for a Superfund/CERCLA site. Information about TAGs is available in the Information Repositories or through the TAGs Coordinator, USEPA, Region V at (800) 621-8431