

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	<u>NORTH HOLLYWOOD DUMP</u>	ProjectID: 04-02
Last Updated:	08/17/98	
City:	Memphis	
County:	Memphis and Shelby	
State:	TN	
Country:	USA	
Bodies of Water:	Wolf River; man-made lake	
US EPA Region:	IV	
Status (Active, Complete, or Monitoring Only):	Complete	
Date On NPL:	1981	
ROD/ESD Date:	1991	
Operable Unit:		
Areas of Concern (length or acres):	40-acre man-made lake adjacent to the Wolf River.	
Other Characteristics of Water Body:	Past dredging operations for sand and gravel had cut the lake bottom to as much as 40 ft below the water surface. The lake is also called the "dredge pond." The lake is charged by a combination of groundwater seepage, local area runoff and occasional flooding from the Wolf River. River flooding is believed to provide a primary influx of fish and aquatic life to the lake.	
Contaminants of Concern:	pesticides; metals; pesticides include heptachlor, heptachlor epoxide, chlordane, chlordene, lindane, DDT, and dieldrin	
Source of Contamination:	North Hollywood Dump, a former municipal landfill within the floodplain of the Wolf River.	
Contaminated Area Physical Characteristics:	Elevated levels of contaminants including pesticides existed primarily within the top 2 ft of the sediments and primarily in the eastern and western thirds of the lake. Pesticide contamination below 2 ft was generally negligible. The two ends of the lake with the higher levels of pesticide contaminants were also the deepest portions. The middle portion of the lake was relatively shallow (0-8 ft) and in this area only low concentrations of pesticide contaminants existed in the surface sediments (0-3 ft). Bioaccumulation studies on fish and other aquatic life showed that only sediments in the eastern and western thirds of the lake posed unacceptable risk levels, while the central area did not warrant remediation through the addition of clean fill.	
Type of Regulatory Action:	Superfund. Final.	
Overall Status Summary:	The target was a 40-acre lake created from decades of excavation/dredging for sand and gravel. The lake is charged by groundwater, runoff, and Wolf River flooding. Resident fish were all harvested using Rotenone prior to remediation. 40,000 cy (3' depth) of pesticide contaminated sediments were hydraulically dredged from the shallow center of the lake and disposed in a closed oxbow bend of the Wolf River. Additional center portion materials were dredged and distributed onto the deeper and more contaminated east and west portions of the lake. Additionally, 70,000 cy of imported sand were distributed over the lake bottom as a 3' minimum cap. Completed March 1996.	
Remedial Action Planned:	<input checked="" type="checkbox"/>	
Risk Assessment:	<input checked="" type="checkbox"/>	
Remedial Action Implemented:	<input checked="" type="checkbox"/>	
Status of Dredging	<input type="checkbox"/>	

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<i>Last Updated:</i>	08/17/98	

<i>PRPs:</i>	<input checked="" type="checkbox"/>
<i>Contacts:</i>	<input checked="" type="checkbox"/>
<i>References:</i>	<input checked="" type="checkbox"/>
<i>Modeling:</i>	<input type="checkbox"/>
<i>Fishing Advisory:</i>	<input checked="" type="checkbox"/>
<i>Key Conditions:</i>	capping, dredge spoil reuse/fill, dredging, fish harvesting, post monitoring

REMEDIAL ACTION PLANNED

Project Name	<u>NORTH HOLLYWOOD DUMP</u>	ProjectID: 04-02
Last Updated:	08/17/98	
Target Sediment Cleanup Standards (TSCS):	None	
How TSCS Established:	N/A	
Target Bank and Floodplain Cleanup Levels (if applicable):	N/A	
Other Target:	Restore fish levels to levels acceptable for consumption.	
Environmental Sample Data References:	<ul style="list-style-type: none">• Sediment:• Water:• Fish:	
Estimated Target Volume:	None. Selected remedy involves containment of contaminated sediment using "hydraulic fill."	
Planned Disposal Method:		
Estimated Calendar Time to Implement Remedy:	Two years	
Estimated Time to Implement Remedy:	Two Years	
Estimated Cost to Implement Remedy:	\$3.1 million	
Stated Remedial Action Objectives (and Source):	None specifically stated. As inferred from the selection of the preferred remedy, containment "... will permanently reduce the risk of exposure to contaminants through fish consumption."	
Measures of Success to be Used:		
Planned Monitoring and Restoration:	<p>Source: ROD: "Upon completion of the fill operations, the fish remaining in the abandoned dredge pond will be harvested. A post-construction bottom profile survey will be constructed in the completed dredge pond to verify the uniformity of the fill operation. Disturbed areas around the impoundments will be restored by reseeded as necessary and the impoundments will be restocked with fish."</p> <p>"A long-term monitoring program for the surface water impoundments would be implemented after the remediation is complete to verify that sediments levels do not increase above the 10-6 health based levels set during the Remedial Design."</p>	
Agency Position on Sediment Removal (and Source):	<p>Source: ROD: "Alternatives 3 and 6 (removal by dredging and on-site capping), however, are considered difficult to implement due to the degree of dewatering of the abandoned dredge pond which is required. In addition, the implementation of Alternative 3 will be limited by the size of the dredge pond, the ability to accommodate significant changes in the volume of material to be handled, and the required length of the construction period. Alternative 3 also requires the wet handling of contaminated sediments which may be difficult. The technical feasibility of settling out dredged sediments without the use of flocculants is uncertain. This factor will potentially have a significant impact on the implementability of this alternative."</p>	

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"Consequently, Alternative 3 is considered to be the most difficult to implement and the most sensitive to potential implementation problems."

RISK ASSESSMENT

Project Name **NORTH HOLLYWOOD DUMP**

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Last Updated: 08/17/98

RA Type: Human Health Baseline

RA Status: Complete

RA Objectives:

Company

Performing RA:

RA Reference Report:

RA Summary and Source: 1990 ROD.

Conclusions:

"At North Hollywood Dump, the current receptor population was limited to the residential community surrounding the site."

"... acute or chronic dermal contact with surface water under realistic worst-case and most probable exposure scenarios does not appear to result in "significant" noncarcinogenic risk."

"The carcinogenic risk characterization concluded that the carcinogenic risks associated with future incidental ingestion of surface soils and dermal contact with surface soils under realistic worst-case and most probable exposure scenarios are considered "insignificant." Direct dermal contact with surface waters under future realistic worst-case and most probable exposure scenarios appears to be "insignificant" and fish consumption from the Wolf River also appears to be "insignificant." However, scenarios which evaluate the carcinogenic hazard associated with the ingestion of fish from the on-site ponds (Oxbow Lake and the dredge pond) predict the carcinogenic risk to be "significant" (i.e., exceeds the EPA target range of 10⁻⁴ to 10⁻⁶) for the realistic worst-case and "significant" for the most probable exposure scenarios."

Tables 16 and 17 in the ROD summarize carcinogenic risks for consuming fish from the lake. A sampling of these results, including whole body fish concentrations from a 1981 State of Tennessee fish study follow:

chlordane: 6.5 ppm in fish, 8 x 10⁻⁴ lifetime additional risk
lindane: 2.2 ppm in fish, 3 x 10⁻⁴ lifetime additional risk
heptachlor: 0.3 ppm in fish, 5 x 10⁻⁴ lifetime additional risk
DDT: 0.5 ppm in fish, 7 x 10⁻⁴ lifetime additional risk

Source: Proposed Plan, June 1990 (Attached to ROD):

"Health risks from long term (70 years) exposure to carcinogenic compounds from the site in fish obtained from the Oxbow Lake and dredge pond were found to present concern for those who consume contaminated fish caught from these areas as a major and frequent food staple. From the risk calculations, it was estimated there is a 2 to 7 in 1,000 excess chance of developing cancer if 6.5 grams of fish from the impoundments were eaten every day for 70 years if the impoundments are not remediated. However, it is appropriate to note that the findings from the major health study of Hollywood area residents conducted by the Centers for Disease Control in 1985 at the request of the U.S. EPA found no evidence of increased health effects among persons living in the Hollywood area that could be attributed to the North Hollywood Dump. Also, this risk calculation is based on contaminant levels measured during the original RI. Changes in conditions that could affect the risks are likely to have occurred since that time. Additional contaminant measurement to evaluate this situation will be conducted during the remedial design phase of the project."

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"... Risks to flora and fauna at the surface are limited. Environmental risks from the contaminated sediments in the on-site ponds have already contaminated fish to above acceptable human health levels and the contaminants have the potential to bioaccumulate in other biota. It should be noted; however, that subsequent sedimentation of the on-site ponds could have decreased the exposure to the contaminated sediments"

REMEDIAL ACTION IMPLEMENTED

Project Name:	<u>NORTH HOLLYWOOD DUMP</u>	ProjectID: 04-02
Last Updated:	05/11/99	
Physical Target:	Contaminated surface sediments in a 40-acre man-made lake.	
Goals:	Restore fish levels in an onsite man-made lake to levels acceptable for human consumption by harvesting existing fish, removing or covering contaminated sediments, and allowing natural fish restocking by flooding from the Wolf River.	
Primary Contractor:	Heritage Environmental Services (dredging and fill)	
Other Contractors:	Conestoga - Rovers & Associates	
Generic Remediation Method:	Hydraulic dredging; direct burial (with fill)	
Equipment:	Ellicott 370 hydraulic cutterhead; pontoon boat with discharge header and three types of discharge piping arrangements.	
Material Handling:	<p>Hydraulic dredging of 40,000 cy of material from the center portion of the lake and discharge to an isolated oxbow via a floating pipeline. (Refer to "Method of Water Treatment.") Placement of 70,000 cy of imported fill over the more contaminated sediments in the eastern and western portion of the lake. As described in Reference C-479:</p> <p>"We used an Ellicott 370 dredge to hydraulically excavate and pump the cover material. For placement, we employed a pontoon boat on which a discharge header was mounted with connections to a 10-in.-diameter HDPE pipeline through which dredged material was conveyed. We controlled the pontoon boat location and fill dispersion route through connection to a cable tied to trees and other suitable anchor points along opposite banks of the lake. The cable was oriented along various transect lines on which the discharge header preceded. A hydraulic pulley system mounted on the pontoon boat moved the discharge assembly along the cable at a controlled rate to ensure even coverage across the designated areas. Three types of discharge devices were used to place the cover material: a 10-ft-long, 12 in-diameter slotted pipe, a 3 ft by 3 ft scatter plate, and an 8-ft-diameter corrugated metal culvert pipe."</p>	
Volume Removed:	40,000 cy; redistributed to a closed oxbow and covered.	
Calendar Time:	July 1995 to March 1996.	
Time To Implement:	8 months	
Total Cost:	\$2.4 million	
Dredging Cost:	N/A	
Disposal of Sediment:	Disposed into an isolated oxbow and covered.	
Volume of Water:	N/A	
Method of Water Treatment:	<p>The three feet of material dredged from the central portion of the lake was directed in slurry form into an adjacent closed oxbow bend of the Wolf River for disposal. The slurry traveled through a 12-in-diameter, HDPE force main. The force main was secured to floats as it crossed the lake; it then continued over the ground surface. Spoil was delivered in slurry form, and the runoff was collected at the opposite side of the oxbow into a sump. The length of travel for the water from its point of discharge to the sump, together with the sump design itself, provided for some filtering out of solids, making the water acceptable for metered discharge into a nearby sanitary sewer trunk main. Slurry water had to continually be removed from the oxbow bend to prevent overtopping and a</p>	

REMEDIAL ACTION IMPLEMENTED

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	consequent discharge directly to the Wolf River.	
Water Discharge Limit:	Not performed	
Air Monitoring During Remediation:	Not performed	
Water Monitoring During Remediation:	N/A	
Outcome:	<p>With the objective of restoring the fishery suitable for human consumption, all fish were harvested, then material with low levels of pesticides was dredged from the center of the lake and discharged into an isolated oxbow of the Wolf River. This deepened the center of the lake and exposed clean sediments not requiring cover by fill. The more contaminated eastern and western portions of the lake were capped by 70,000 cy of imported clean fill.</p>	
Restoration and Post-Monitoring:	<p>A Long Term Monitoring and Maintenance Plan requires that both fish and sediment samples from the lake be obtained and analyzed every two years beginning in 1998. This monitoring frequency may be reduced to a three-year interval after the year 2003, with further reductions as warranted by the data obtained.</p> <p>Fish harvesting was accomplished prior to dredging and fill operations and is described in Reference M-55 as follows: ". . . harvesting operations were conducted during the week of May 15, 1995, using Rotenone, an ichthyocide that inhibits the ability of the fish's cell structure to absorb and utilize oxygen. Other aquatic life, including turtles, frogs and snakes, is largely unaffected by this chemical, which loses its potency and begins to biodegrade within 24 hours of application. Boats sprayed Rotenone onto the water using pressurized canisters. The chemical was also injected below the water surface in deeper portions of the lake (i.e., depths in excess of 20 ft.) by extension tubes attached to the sprayer assemblies. Following application, the boats continued to ply the lake for a number of hours to thoroughly mix the chemical into the water column."</p> <p>"We observed the effects of the Rotenone application within the first hour as numerous fish began to congregate at the water surface. Workers were standing by in boats to collect the fish as they came to the surface. They placed the fish in the adjacent landfill, where a shallow excavation had been cut out of the existing cover. Fish carcasses were sprinkled with lime and buried immediately after being removed from the lake and transported to the disposal location."</p> <p>The lake is subject to flooding every year or two from the adjacent Wolf River, and restocking with native fish is anticipated to occur naturally through this process. An artificial restocking program will eventually be implemented should it be determined that an inadequate fish population exists.</p>	
Site-Specific Difficulties:	Various difficulties with distribution piping (for broadcasting of fill material) and plugging of distribution manifolds with rocks, resolved by trial and error.	
Monitoring Data		
References:	<ul style="list-style-type: none">• Sediment• Water:• Fish:	

POTENTIALLY RESPONSIBLE PARTIES

Project Name **NORTH HOLLYWOOD DUMP**

ProjectID: 04-02

PRP Name: PRP INFORMATION NOT RELEASED

PRPID:

Street Address:

City:

State:

KEY CONTACTS

Project Name **NORTH HOLLYWOOD DUMP**

ProjectID: 04-02

Last Name: KEY CONTACT INFORMATION NOT RELEASED

Contact ID:

First Name:

Title:

Company:

Address:

City:

State:

Postal Code:

Work Phone # :

Other Phone #:

Fax # :

Email Address:

REFERENCES

Project Name **NORTH HOLLYWOOD DUMP**

ProjectID: 04-02

Reference Type: A

ReferenceID: 310

Title: ***Superfund Record of Decision: North Hollywood Dump, TN***

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: US EPA Region IV

**Preparer/Author
Address:** Atlanta, GA

Prepared For: General Public

Date Published: September 1990

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 772

Title: ***Section 3.0: SURFACE WATER IMPOUNDMENTS SAMPLING
PROGRAM***

Location: AEM

Category: Monitoring Plan/Report

Prepared by/Author: Unknown

**Preparer/Author
Address:**

Prepared For: Unknown

Date Published: Unknown

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 773

Title: ***Validated Fish and Sediment Data; North Hollywood Dump;
Memphis, Tennessee***

Location: AEM

Category: Analytical Data

Prepared by/Author: Conestoga-Rovers & Associates Limited

**Preparer/Author
Address:** 651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2

Prepared For: US EPA Region IV

Date Published: January 14, 1993

**Key Words and
Phrases:**

REFERENCES

Project Name **NORTH HOLLYWOOD DUMP**

ProjectID: 04-02

Reference Type: C
Title: *N. Hollywood cap project nears*
Location: AEM
Category: Site Update
Prepared by/Author:
Preparer/Author Address:
Prepared For: Superfund Week
Date Published: July 14, 1995
Key Words and Phrases:

ReferenceID: 302

Reference Type: C
Title: *Dredging Up Toxic Sediments*
Location: AEM
Category: Site Update
Prepared by/Author: (1) Craig P. Schellbach and (2) Walter van Veen
Preparer/Author Address: (1) Memphis Enviromental Center, Inc. and
(2) Conestoga-Rovers & Associates
Prepared For: Civil Engineering
Date Published: March 1997
Key Words and Phrases:

ReferenceID: 479

Reference Type: L
Title: *Maximum Baseline Cancer Risks for Contaminated Sediment Sites*
Location: AEM
Category: Risk Assessment
Prepared by/Author: AEM, Inc.
Preparer/Author Address:
Prepared For: Distribution
Date Published: October 22, 2001
Key Words and Phrases:

ReferenceID: 138

REFERENCES

Project Name **NORTH HOLLYWOOD DUMP**

ProjectID: 04-02

Reference Type: R

ReferenceID: 24

Title: *Letter to PRP re: Case Histories: Contaminated Sediment Sites
(with response from Memphis Environmental Center, Inc.)*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc. with response from Memphis Environmental Center, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: Memphis Environmental Center, submitted to

Date Published: May 14, 1999

**Key Words and
Phrases:**

Reference Type: S

ReferenceID: 4

Title: *North Hollywood Dump site (Memphis Tennessee)*

Location: AEM

Category: Legal

Prepared by/Author: US EPA Region IV

**Preparer/Author
Address:**

Prepared For: FY 1996 Enforcement and Compliance Assurance Accomplishments Report

Date Published: May 1997

**Key Words and
Phrases:** Consent Decrees for cost recovery

FISH ADVISORIES

Project Name ***NORTH HOLLYWOOD DUMP***

ProjectID: 04-02

Advisory: Wolf River

AdvisoryID: 124

Extent: Mile 0.0 - 18.9 (Shelby County)

Pollutant: chlordane

Species: all fish

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: River

Advisory Number: 831

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: Greg Denton

Contact Number: 615-532-0699
