SUPERFUND PROGRAM PROJECT UPDATE

VERTAC OFFSITE AREA
JACKSONVILLE, ARKANSAS

FEASIBILITY STUDY — JUNE 1986

INTRODUCTION

This fact sheet provides a brief history of the Vertac site, summarizes the results of offsite investigations, describes the various corrective measures being considered for the Vertac offsite area by the Environmental Protection Agency (EPA), and outlines the opportunities for public involvement.

For more than 30 years, pesticides have been produced at the current location of the Vertac Chemical Corporation (see Figure 1) in Jacksonville, Arkansas. A chemical by-product of one of the pesticides is named 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD. TCDD is known to be a cancer-causing substance. It tends to attach itself to soils or sediments and does not dissolve easily in water. TCDD also tends to accumulate in animal tissue. Preliminary studies indicate that areas in and around the Vertac plant have been contaminated with TCDD.

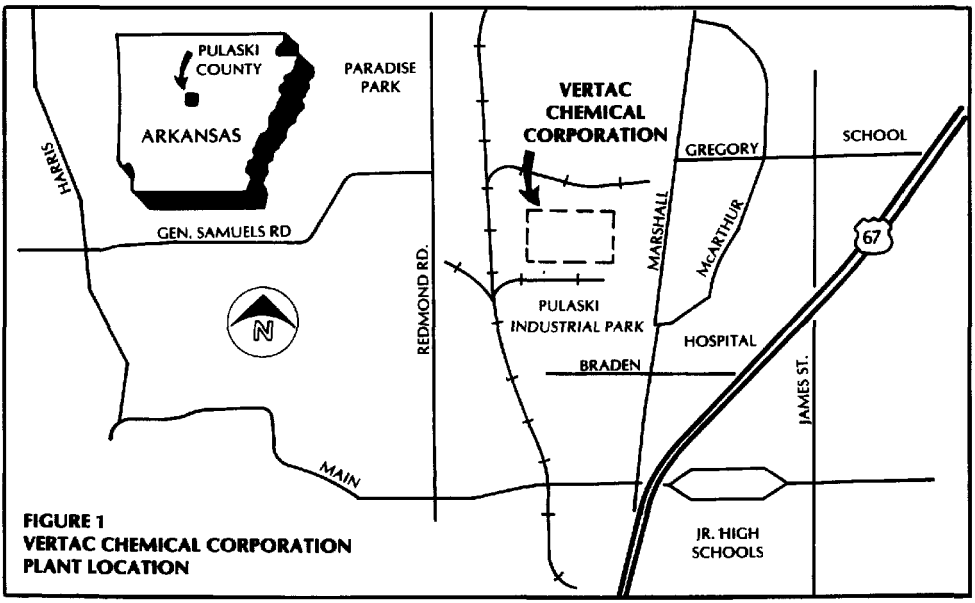


FIGURE 1
VERTAC CHEMICAL CORPORATION PLANT LOCATION

July 15 • 7 to 9 p.m. • PUBLIC MEETING • N. Pulaski County H.S.

SITE BACKGROUND

The Vertac Chemical Corporation is located on Marshall Road in Jacksonville, Arkansas, ten miles northeast of Little Rock. Residential areas lie to the south and east of the plant. Land to the north and west is undeveloped or used for commercial or light industrial purposes. Rocky Branch Creek flows south along the west side of the Vertac property into Bayou Meto, a tributary of the Arkansas River. The Vertac plant and surrounding residential, commercial, and industrial areas are served by the Jacksonville sanitary sewer system. The wastewater treatment plant is located one mile southwest of Vertac.

The Vertac plant site was first identified as a potential source of contamination during the National Dioxin Survey conducted by EPA in 1978. After TCDD was found in production wastes at the plant, EPA began to investigate the extent of the contamination problem. Solid wastes containing TCDD had been buried on the Vertac site, and liquid wastes had been discharged into the Jacksonville wastewater treatment system. Surface runoff, leakage from the buried waste, and sewage carried contaminants off the site. As a result, TCDD was found in sediments of Rocky Branch Creek and Bayou Meto and in tissues of wildlife and fish downstream.

The Vertac site was added to the National Priorities List (NPL) of hazardous waste sites in 1982. Once the site was placed on the NPL, money available from the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly called Superfund, could be used to study the problems at the Vertac site and find ways to correct them.

In 1980, the Vertac Chemical Corporation was ordered to take certain steps to control the source of the contamination. Drums of waste were securely stored, underground barriers and drainage systems were installed, waste was removed and contaminated areas were covered. Vertac completed most of this onsite work in the fall of 1985.

OFFSITE REMEDIAL INVESTIGATION

In 1984, EPA began a study (called a Remedial Investigation) of the offsite contamination. The purposes of the Remedial Investigation were to determine the extent of TCDD contamination in offsite areas and to collect enough information to assess the potential health and environmental risks and develop alternative remedies to the problems.

The area of investigation (see Figure 2 on insert) includes the residential subdivision immediately south of the Vertac plant and the areas to the south and east of the Vertac property. Approximately 3,000 people live in the investigation area. The area includes a mixture of residential and agricultural land, with large portions of undeveloped swamps and woodland. The investigation area also includes flood plains of Rocky Branch and Bayou Meto which extend throughout much of this area.

The study tasks focused on sampling and testing to determine how much TCDD is present in soils near the Vertac plant and in sediments in the nearby streams, flood plains, wastewater collection lines, and wastewater treatment facilities. The highest concentrations of TCDD were found in the sewage collection and treatment systems. Sediments from Rocky Branch Creek were also contaminated, but at lower concentrations. Samples taken from Bayou Meto showed a wide range of TCDD content, with higher amounts found in sediments where the wastewater treatment plant discharges into the bayou. Samples taken in the flood plains next to Rocky Branch and Bayou Meto showed evidence of some contamination, but at lower concentrations.

The sampling of three deep wells in the area indicated that the water did not contain, at detectable levels, any of the contaminants that may have been released from the Vertac site. No shallow groundwater wells exist offsite. Moreover, since TCDD has a low water solubility, it is less likely to be found in water than in soil or sediment.

POTENTIAL SITE HAZARDS

EPA evaluated the adverse health or environmental effects that might result from the TCDD contamination in the offsite investigation area. At EPA's request, the Centers for Disease Control (CDC) also evaluated what might happen if people came into contact with the contamination. CDC also made recommendations for how much TCDD could safely remain in the soils.

The potential site hazards are:

- ingestion of TCDD-contaminated soil
- skin contact with contaminated soil
- ingestion of contaminated wildlife, livestock, or livestock products
- ingestion of produce grown in contaminated soil

The greatest health hazard is from ingestion of TCDD, and children playing in areas with contaminated soil may be at risk. Because TCDD accumulates in animal tissues, another potential health risk exists from eating fish caught downstream from the Vertac site and the wastewater treatment plant. Cattle that graze in the TCDD-contaminated areas can also accumulate TCDD in their tissues, and consuming dairy products from such cattle is a potential hazard. If area residents have used sludge produced at the Jacksonville wastewater treatment to fertilize their fields or gardens, ingestion of produce grown on TCDD-contaminated fertilizer or soil could be a health hazard.

PUBLIC COMMENT ON VERTAC FEASIBILITY STUDY

EPA is interested in the public's view of the alternatives being considered. Copies of the Remedial Investigation and Feasibility Study documents are available for review at the EPA office in Dallas as well as:

Jacksonville City Hall
109 South 2nd Street
Jacksonville, Arkansas

Pulaski County Courthouse
Markham and Spring, Rm 108
Little Rock, Arkansas

Police Courts Building
1412 Main Street
Jacksonville, Arkansas

Base Library
Little Rock Air Force Base
Jacksonville, Arkansas

Jacksonville Public Library
308 West Main
Jacksonville, Arkansas

Arkansas Department of Pollution Control and Ecology
8001 National Drive
Little Rock, Arkansas

PUBLIC MEETING

EPA will explain the results of the Vertac Feasibility Study, answer questions, and accept both written and oral comments at a public meeting to be held:

Tuesday, July 15, 1986
7 to 9 p.m.
North Pulaski County High School
718 Harris Road
Jacksonville, Arkansas

WRITTEN COMMENTS

Written comments on the Vertac Feasibility Study will be accepted by EPA from July 7 until July 28, 1986. Please mail your written comments to:

Robert E. Hannesschlager, Chief
Superfund Enforcement Branch (6H-E)
U.S. Environmental Protection Agency
1201 Elm Street
Dallas, Texas 75270

ADDITIONAL INFORMATION

If you have questions or would like more information on the Vertac site, please contact:

Ellen D. Greeney
EPA Community Relations
(214) 767-9739

ADDITIONS TO MAILING LIST

If you did not receive this fact sheet by mail and would like to be added to the Vertac mailing list, please fill in the information below and send to:

Ms. Ellen D. Greeney
Superfund Program Branch (6H-SS)
U.S. Environmental Protection Agency
1201 Elm Street
Dallas, Texas 75270

Name _____

Street Address _____

City, State _____ Zip _____

Affiliation _____

Phone _____

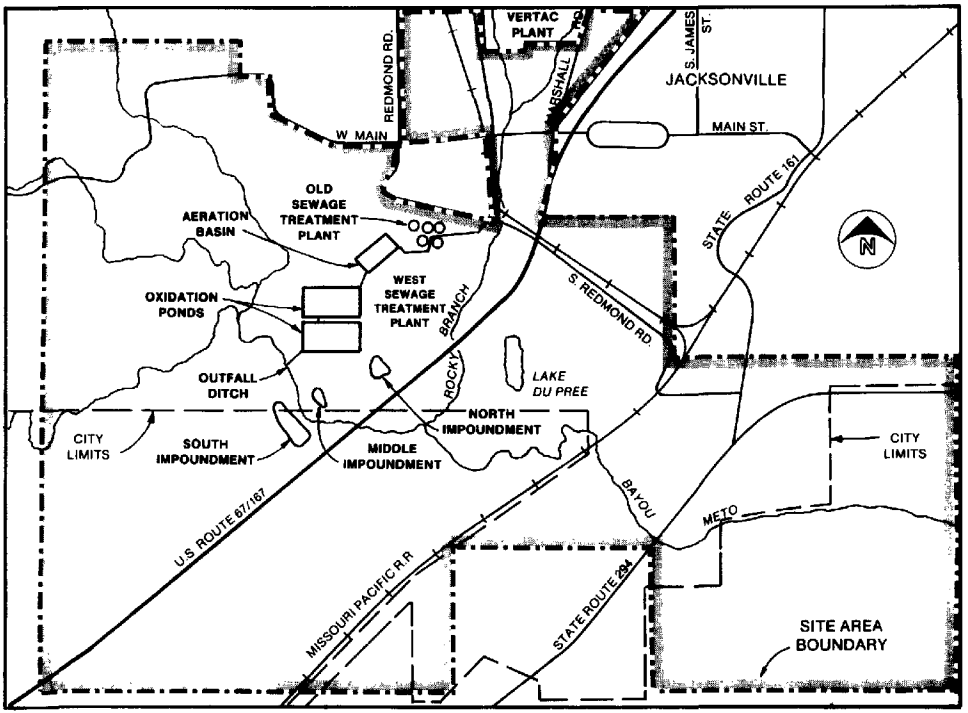
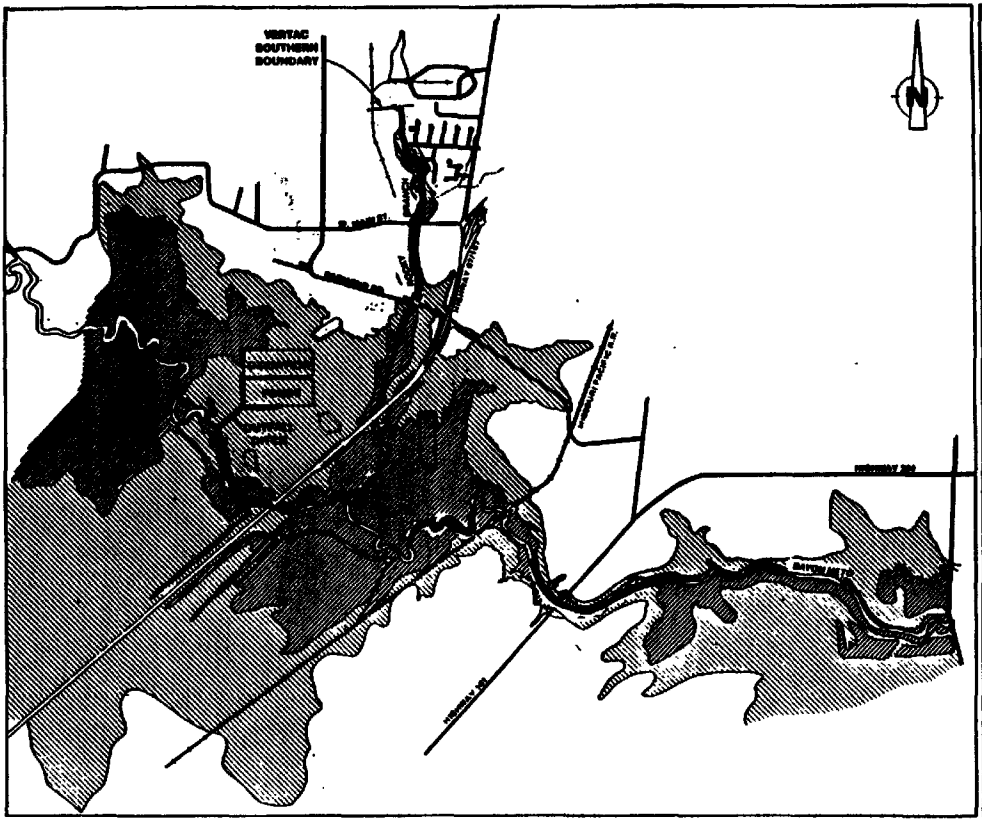


FIGURE 2
VERTAC OFFSITE INVESTIGATION AREA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Both the EPA and the CDC evaluations concluded that adverse health or environmental effects could result if no action is taken to prevent contact with the TCDD contamination. Recommendations were made to reduce the concentrations in areas where people are most likely to be exposed to the TCDD. Residential or agricultural use of the contaminated areas should be limited to prevent contact with the soils or sediments. Consumption of fish from the affected areas of Bayou Meto downstream from the wastewater plant should be avoided.

FEASIBILITY STUDY

Using the results of the Remedial Investigation and the evaluation of the potential effects on people and the environment, EPA evaluated a wide range of alternatives to correct the problems. The alternatives being considered are described in the Feasibility Study and are summarized below. The public now has an opportunity to review this study and comment on the alternatives. After considering the public comments, EPA will choose the remedy that best protects the public health, welfare, and the environment.

A number of alternatives was developed for each of the two affected areas: the wastewater collection and treatment facilities, and the waterways and flood plain areas.

Alternatives For Wastewater Facilities

1: No Action
- No action would be taken to prevent exposure to or reduce the concentrations of TCDD in the wastewater facilities
- Estimated Cost: None

Potential site hazards would not be reduced. TCDD-contaminated areas would continue to present health and environmental risks.

2: Abandon Facilities, Restrict Access and Monitor
- Contaminated wastewater facilities would be sealed and abandoned
- Access to the facilities would be restricted with fencing and signs
- Soils and sediments would be sampled and TCDD content would be monitored
- Estimated Cost: $2 million

The potential for human exposure would be reduced. Discharge of TCDD contamination from the wastewater facilities into the waterways would be prevented. Movement of TCDD could potentially occur by other means (seepage into groundwater, airborne materials).

3: Removal and Local Incineration
- Approximately 50,000 cubic yards of contaminated materials would be removed from the affected facilities
- Excess water would be removed from the material, treated onsite, then discharged into Bayou Meto
- Contaminated materials would be incinerated in a facility temporarily located at the site
- Estimated Cost: $140 million

Destruction of TCDD eliminates potential for human and environmental exposure. Future use of the land and facilities would be unrestricted.

4: Offsite Incineration
- Same as above except materials would be hauled to an incinerator at another location
- Estimated Cost: $130 million

There is currently no offsite incinerator that could accept TCDD-contaminated material. If one was available, destruction would eliminate future exposure hazards and there would be no future site use restrictions. There would be a potential exposure risk due to transporting the material.

5: Disposal in Wastewater Facilities
- Contaminated material would be removed from treatment facilities, excess water would be removed
- The solidified material would be disposed in an existing oxidation basin at treatment plant which would then be capped
- Contaminated sewer lines would be filled with concrete
- Estimated Cost: $57 million

Exposure risks would be reduced, and discharge of TCDD from the wastewater facilities would be prevented. The possibility of contaminant release from the disposal facility may exist, and long-term maintenance of the facility would be necessary.

6: Local Disposal
- Remove all contaminated material as in Alternative 3
- Remove and treat excess water and solidify sludge
- Dispose of material in a facility that meets current EPA standards, to be built on or near the contaminated area
- Fill contaminated sewer lines with concrete
- Estimated Cost: $63 million

Human and environmental exposure risks would be eliminated. Future use of the wastewater facilities would be unrestricted. Suitability of the site for disposal is uncertain due to soil conditions and flood plain location.

7: Disposal in an Existing Offsite Facility

- Same as Alternative 6 except material would be taken to an existing facility at another location that meets current EPA standards
- Estimated Cost: $76 million

Currently, no existing offsite storage facilities can accept TCDD wastes. Exposure risks at the site would be eliminated, but risks may occur due to transporting the material.

Alternatives For Waterways And Flood Plains

A: No Action

- No action would be taken to reduce contamination or prevent contact
- Estimated cost: None

Risks of exposure to TCDD contamination in the flood plains and waterways would not be reduced. Future use of these areas could present a threat to health and the environment.

B: Access Restrictions and Monitoring

- Access to contaminated waterways and flood plain areas would be restricted by fences and signs
- Approximately 3700 feet of Rocky Branch, 6450 feet of Bayou Meto, and 23 acres of flood plain would be restricted
- Public awareness program would be used to inform people of the hazards
- TCDD concentrations would be monitored by sampling soils, sediments, and wells
- Estimated Cost: $1.6 million

Current recreational and agricultural uses of the flood plain areas would be prevented, reducing the risk of human and animal exposure. Consumption of contaminated fish would be reduced by preventing fishing in the affected area.

C: Containment in Place

- 23 acres of contaminated flood plains would be covered with protective material and 12 inches of topsoil
- 3700 feet of Rocky Branch and 6450 feet of Bayou Meto would be rechannelled, and contaminated material would be buried in the old channel
- Flood-control berms would be constructed to prevent erosion
- Estimated Cost: $4.6 million

The risk of exposure to TCDD would be reduced, and accumulation of TCDD in fish tissues would be prevented. Installation of cover materials in the flood plain would be difficult, and regular maintenance would be required. Existing ecology would be damaged by the corrective measures.

D: Removal and Onsite Incineration

- Approximately 61,000 cubic yards of contaminated material would be removed from flood plains and waterways
- Excess water would be removed from the stream sediments, treated, and discharged to Bayou Meto
- Material would be destroyed in a mobile incinerator brought to the contaminated area
- Estimated Cost: $240 million

Destruction of TCDD would prevent exposure, and future site use would not be restricted.

E: Offsite Incineration

- Same as above except materials would be hauled to an incinerator at another location
- Estimated Cost: $220 million

TCDD would be destroyed and future site use would be unrestricted. Transporting the material from the site would be difficult due to lack of roads to the area, forests, and swamps. Exposure risks could result from potential spills during transportation.

F: Local Disposal

- Materials would be removed as above and disposed in a facility built in the contaminated area to meet current EPA standards
- Estimated Cost: $65 million

Removal and disposal of the material would prevent exposure to TCDD and would allow future use of the area. Suitability of the site for disposal is uncertain.

G: Offsite Disposal

- Materials would be removed as above and taken to a disposal facility at another location that meets current EPA standards
- Estimated Cost: $79 million

TCDD contamination would be eliminated, and future site use would not be restricted. Currently there is no disposal facility that can accept TCDD, and transportation of the contaminants could increase exposure risks.