NOAA Hazardous Waste Site Review

Bayou Sorrell (VI-4)
Iberville Parish, Louisiana
April 13, 1984

Location and Nature of Site:

This 265-acre site is located in Iberville Parish, Louisana, about 20 miles southwest of Baton Rouge and six miles northwest of Bayou Sorrell (Figure 1). The site is bounded on the north by the Grand River, on the east by Pat Bayou, on the west by the Atachafalaya floodway, and on the south by swampland.

The site was operated by the Claw Corporation, and first received chemical waste in late 1976. The site was closed in 1978 when a truck driver was killed by toxic gases generated by the mixing of waste liquid from his truck and the contents of a waste pond. The site is known to have received chemical wastes from industry in Texas, Louisiana, Arkansas, and Mississippi.

Three sludge pits, four liquid waste ponds, and two drum dumps are located on the property. The Claw Corporation consented to perform certain modifications to the site when it was found that some of the procedures used at the site were not within Louisiana State law. This action was strengthened by the 18th Judicial District Court after the human death was investigated. The site was closed to further waste disposal, and open pits were drained, filled, and covered. Much of this contaminated water found its way into the Grand River and swamp adjacent to the site.

The U.S. Environmental Protection Agency is actively investigating remedial action at this site to limit public health and environmental impacts.

Records of the exact materials received by the site are not specific and do not always agree with the records of the dumping permits issued by the State of Louisiana. The large area of the site and terrain features have made complete water and soil sampling difficult. Samples from the site contain significant quantities of mixed organic liquids, solids, sludges, and tars; pesticide solids, sludges and residues; and heavy metal sludges and solutions. Water samples from the Grand River and swamp have shown levels of chromium, arsenic, nickel, and zinc in excess of drinking water standards. Soluble cyanide compounds have been identified in surface water on the site. Phenol, 2,4-dimethylphenol, benzene, toluene, and asbestos (chrysotile) are in gross quantity on the site. Lesser amounts of copper, lead, silver, phthalate species, naphthalene, sulfides, and DDT/DDD pesticides were also noted.

Further site sampling is expected as remedial action is taken.

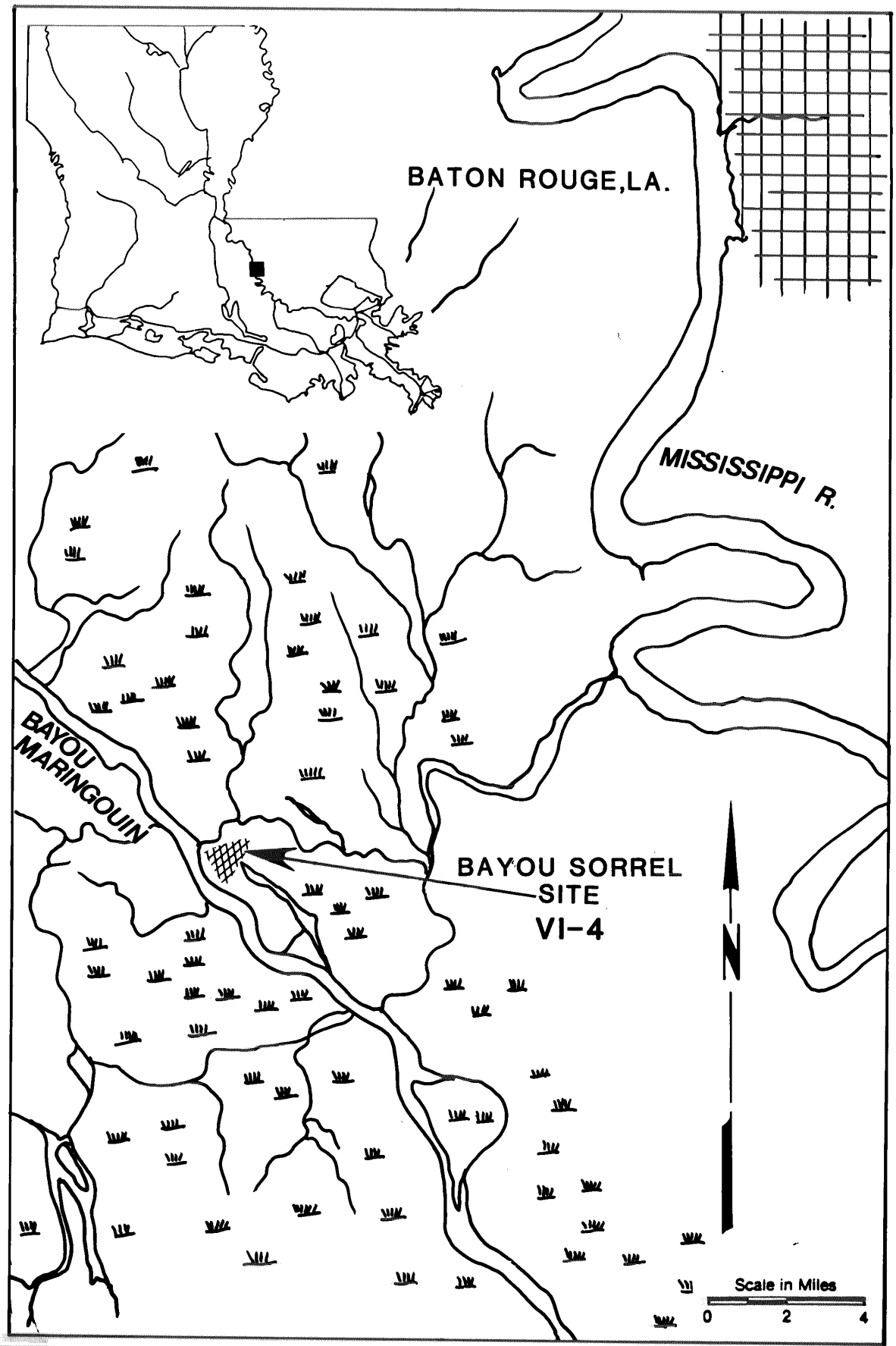

FIGURE 1. Site location.

Proximity of Chemical Hazard to Marine Resources

The sediments under the site are the typical dense clay layers common to southern Louisiana which greatly limit groundwater movement of contaminants over great distances.

Surface water flow is toward the Grand River, which is prone to flooding during the annual rainy season. Woodward-Clyde consultants performed a terrain conductivity survey of the site for the EPA, and found evidence of movement of contaminated sludge and solids from the ponds on site toward the Grand River and adjacent swamp. Only the natural levee of the Grand River and the area's generally flat terrain prevent more massive movements of soil from the site during the wet season.

The Grand River, like the Mississippi River, has a significant mud flow component which would act as a transport mechanism for insoluble tars, sludges, and soils. The Grand River flows with little interruption for thirty miles into Six Mile Lake, which would trap a large portion of the sediments transported by the river. Six Mile Lake drains through Wax Lake and the Atachafalaya River to reach the Gulf of Mexico via Atachafalaya Bay fifteen miles away.

Available information indicates that significant amounts of soluble and insoluble hazardous materials may already have been transported to the coastal zone. The potential for further release has been reduced, but is still present under not-too-extreme circumstances.

Since exact volumes and concentrations of materials on site are not known, it is very difficult to estimate the final concentrations of pollutants which would be expected to reach coastal waters. No documentation of fish kills or other sub-lethal effects related to this site were encountered during this investigation.

The frequency of fish kills in this area may be caused by oxygen depletion by biological or chemical means, disease, parasites, unseasonable weather, or water pollution. Even when a fish kill is reported to one of the many overlapping authorities, the case may not be investigated or documented. If it is investigated, the chance of determining a cause is usually small. Commercial and sport catch statistics show no significant change in landings for this area over the last ten years.

Marine Resources at Risk:

The area between Morgan City and Franklin, Louisiana, and Atachafalaya Bay to Vermilion Bay is noted as one of the most productive portions of the northern Gulf. The massive, but seasonal, fresh water flow of the Atachafalaya Basin meets the northwest sweeping currents of the Gulf to provide a highly productive brackish water environment. The larval stages for many marine fishes of commercial and sporting value are carried into this system of bays and bayous where they develop into the adult form. Many other creatures such as marsh and fisher birds, fur-bearing animals, and predatory fish follow these developing populations. Larval shrimp have been collected as far inland as Six Mile Lake in the Atachafalaya Basin.

Commercial fisheries for several species exist in the area. Three species of shrimp (brown, pink, and white) are taken. The brown shrimp provides 60-70% of all shrimp caught in the Gulf each year. Speckled trout, red drum, black drum, and croaker are taken commercially and also support a valuable sportfishing industry in southern Louisiana. Whiting and menhaden are taken commercially for oil and pet food as far inland as Morgan City. Snapper, grouper, and pelagic species such as the king and spanish mackerels are taken well offshore in the open Gulf.

The larval stages of the marine fish are the most sensitive to the toxic materials found on the EPA Priority Pollutants List. Small size, rapid growth, uptake rates, and other environmental considerations make very low concentrations of pollutants significant. Because many larval forms feed on detritus, they are much more sensitive to tars and sludges which, though insoluble in water, may be transported in small fragments or droplets by physical processes and ingested by larvae.

Summary of Site-Related Actions:

Proposed EPA remedial action centers on sampling to define the extent and type of contamination present. Considerable work is required simply to determine the degree of hazardous conditions at the site. At this time, several alternatives have been proposed, ranging from a passive site monitoring program up to a comprehensive removal and containment project for the site.

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References:

1. U.S. Environmental Protection Agency. Bayou Sorrell Site File.

2. U.S. Geological Survey, 1969. Topographic Map - Bayou Sorrell.