

**Sikes Disposal Pits
Crosby, Texas
Region 6
TXD980513956**

Site Exposure Potential

The Sikes Disposal Pits site occupies 75 hectares, 3 km southwest of Crosby, Texas (Figure 1). The Sikes Disposal Pits were used as a waste depository from the early 1960s to 1967. During this period, a variety of chemical wastes from area petrochemical industries were deposited on-site in several sand pits. Drums of wastes were also left on the property. Areas of significant waste deposits include a main waste pit and overflow area, three smaller waste pits, and drum waste areas. Preliminary sampling at the site in 1982 indicated phenolic compounds, xylene, benzene, creosote, toluene, and other organic compounds. An Immediate Removal Action performed at the site by the EPA Emergency Response Branch in June 1983 included the removal of 336 m³ of phenolic tars from a partially buried pit. In the September 1986 Record of Decision, EPA selected on-site incineration of contaminated sludges and soils as the disposal method. The Sikes site is presently in the Remedial Design phase (EPA 1988).

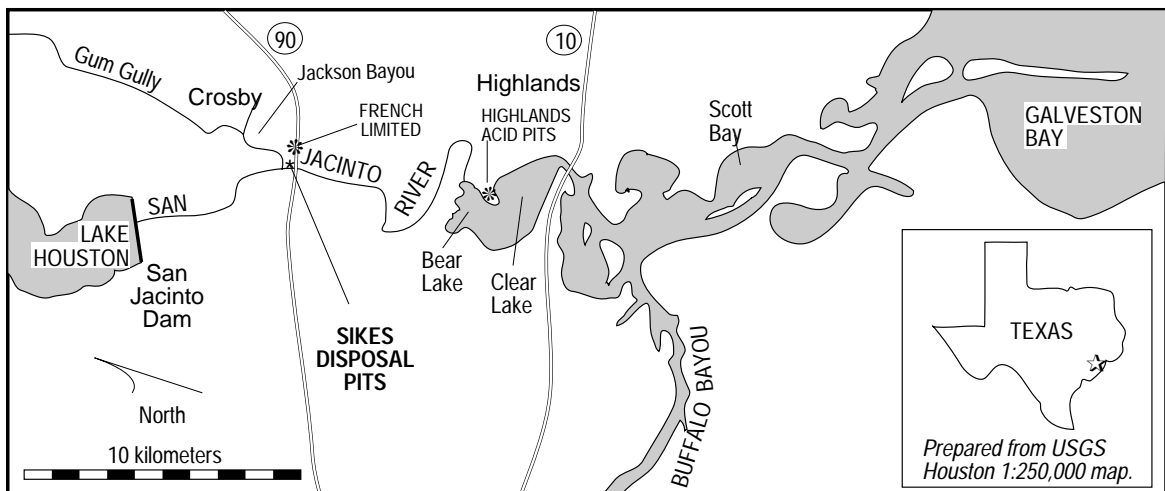


Figure 1. The Sikes Disposal Pits site in Crosby, Texas.

The site is bordered by the San Jacinto River on the west, Jackson Bayou on the north, and U.S. Highway 90 on the south (EPA 1988). The entire site, which is three to six meters above mean sea level, lies within the 100-year floodplain of the San Jacinto River, while portions of the site lie within the 10-year and 50-year floodplains. The site has been flooded four times since 1969. The area surrounding the site is largely undeveloped and has both active and abandoned sand pits, and low-lying, swampy areas. The San Jacinto River empties into Galveston Bay 27 km downstream of the site. The Gulf of Mexico is 80 km from the site (EPA 1988).

Two Superfund sites, French Limited and Highlands Acid Pits, are on the San Jacinto River watershed near the Sikes Disposal Pits site.

Contaminant migration pathways to NOAA trust resources include periodic flooding, surface water runoff, and groundwater flow to Jackson Bayou and the San Jacinto River.

Site-Related Contamination

The contaminants of concern to NOAA are volatile and semi-volatile organic compounds and lead. Ethylbenzene, naphthalene, and total phenols were measured in groundwater at concentrations that exceeded LOEL (Table 1) (EPA 1986, 1988). High levels of several volatile and semi-volatile organic compounds were measured in on-site soils and sludges.

Sediment collected from a surface seep draining into Jackson Bayou had concentrations of total semi-volatile organic compounds ranging from 961 to 9,630 mg/kg, while sediments collected in the San Jacinto River near the site contained concentrations of total semi-volatile organic compounds ranging from 751 to 2,270 mg/kg (EPA 1988). No data on concentrations of specific compounds in bayou or river sediments were presented in documents available for review.

High levels of lead were observed in wastes on site and concentrations exceeding AWQC for the protection of saltwater aquatic life were observed in groundwater on-site.

Table 1. Maximum concentrations of contaminants at the Sikes Disposal Site (EPA 1988); LOEL (EPA 1986); concentrations in soil and sludge in mg/kg and in water in µg/l.

Contaminant	Soil	Sludge	Groundwater	Surface Water	LOEL	
					Acute	Chronic
ORGANIC COMPOUNDS						
<u>Volatiles</u>						
benzene	320	400	10,000	9	N/D	N/D
1,2-dichloroethane	1,000	1,400	2,200	93	113,000	N/D
1,1,2-trichloroethane	500	290	390	4	N/D	N/D
ethylbenzene	100	52	1,700	ND	430	N/D
toluene	93	48	4,300	2	6,300	5,000
<u>Semi-Volatiles</u>						
naphthalene	1,200	78,300	5,900	ND	2,350	N/D
fluorene	290	1,600	ND	ND	N/D	N/D
pyrene	590	3,300	ND	190	N/D	N/D
total phenols	N/A	595,000	15,000	23	5,800	N/D
INORGANIC SUBSTANCES						
<u>Trace Metals</u>						
lead	370	4,150	46	ND	140*	5.6*
N/A: Not available N/D: Criteria not determined ND: Not detected * AWQC						

NOAA Trust Habitats and Species in Site Vicinity

The San Jacinto River is a continuously flowing, low-gradient river system with a drainage basin of 7,500 km². The stretch of the river near the site is a natural river channel three to six meters deep and 60 to 90 meters wide (Ferguson 1988). The San Jacinto Dam is 5 km above the site (Guillen 1988). The dam releases limited fresh water and, as a result, the San Jacinto River is tidal and brackish up to the base of the dam.

NOAA trust resources use the lower San Jacinto River 10 km below the site as nursery and spawning habitat (Table 2) (USFWS 1982). NOAA resource use of the immediate vicinity of the site is probably restricted to periods of drought, when the salinity rises because of less freshwater input to the system. The presence of euryhaline silversides and anadromous striped bass in the San Jacinto River above the site at the base of the Lake

Houston Dam was documented in a recent fish kill resulting from poor flow regulation and reduced dissolved oxygen (Spencer 1988). Blue crab are also known to inhabit the San Jacinto River up to the dam (Guillen 1989).

Table 2. NOAA trust resource use of the lower stretch of the San Jacinto River (USFWS 1982).

Species	Spawning Area	Nursery Area	Adult Area	Recreational Fishery
INVERTEBRATES				
blue crab		X		X
brown shrimp		X		
white shrimp		X		
FISH				
Atlantic croaker		X		X
black drum		X		X
gar	X	X		
killifish	X	X	X	
mullet		X		X
red drum		X		
sand seatrout		X		X
sheepshead		X		X
silverside		X	X	
spotted seatrout		X		X
southern flounder		X		

Response Category: Federal Fund Lead

Current Stage of Site Action: RD/RA Phase

EPA Site Manager

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NOAA Coastal Resource Coordinator

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References

EPA. 1983. Hazardous Waste Land Treatment. Washington, D.C.: Office of Water Regulations and Standards, Criteria and Standards Division. SW-874.

EPA. 1986. Quality Criteria for Water. Washington, D.C.: Office of Water Regulations and Standards, Criteria and Standards Division. EPA 440/5-86-001.

EPA. 1988. Record of Decision for Remedial Alternative Selection and Remedial Investigation Reports (Vols. I and III). Dallas: U.S Environmental Protection Agency, Region 6.

Ferguson, D., U.S. Geological Survey, Houston, Texas, personal communication, December 21, 1988.

Guillen, G., Texas Water Commission, Deer Park, Texas, personal communications, December 16, 1988; March 1, 1989.

USFWS. 1982. Gulf coast ecological inventory: Houston, Texas. Washington, D.C.: U.S. Fish and Wildlife Service.