ATSDR Agency for Toxic Substances & Disease Registry

Public Health Assessments & Health Consultations

PUBLIC HEALTH ASSESSMENT

PETRO-PROCESSORS OF LOUISIANA INCORPORATE
BATON ROUGE, EAST BATON ROUGE PARISH, LOUISIANA

SUMMARY

The Petro-Processors of Louisiana, Inc. (PPI) site, located in East Baton Rouge Parish,Louisiana, operated two waste disposal facilities: the Brooklawn area and the Scenic Highwayarea. A variety of wastes generated by petrochemical processes were disposed of at both areas bythe operators of the site, from 1964 to 1980. Both areas contain chlorinated aromatichydrocarbons and chlorinated hydrocarbons. Contaminants have been detected in samples fromsoil, groundwater, surface water, and air at the Brooklawn area and in soil, groundwater, and airat the Scenic Highway area. Contaminants in water, sediments and fish have been detectedoff-site of the Brooklawn area, Scenic area, in Bayou Baton Rouge and in Devil's Swamp. In1993, the Louisiana Department of Environmental Quality (LDEQ) and the Department of Healthand Hospitals, Office of Public Health (LOPH), Section of Environmental Epidemiology (SEE)expanded a 1987 health advisory against swimming, sediment contact, and fish consumption toinclude Devil's Swamp and Bayou Baton Rouge.

The community has expressed concerns about potential health effects related to the site,migration of contamination off site, the potential for increased exposure during remediation, foul smells and respiratory distress, and the lack of an evacuation plan.

An evaluation of the health outcome data did not demonstrate a significant difference in cancer and stillbirth rates between the community of Alsen and East Baton Rouge Parish.

The site is considered a public health hazard because of risks to human health from past, present,and future exposure to hazardous substances. Exposure pathways of public health concern are:ingestion of contaminated fish, potential ingestion of contaminated groundwater and wildlife,dermal contact with contaminated sediments, inhalation of airborne volatile contaminants priorto and during remedial activities, and dermal and incidental ingestion of contaminated soils.

The LOPH and the Agency for Toxic Substances and Disease Registry's (ATSDR) HealthActivities Recommendation Panel determined that community and health professional educationis needed. In addition, LOPH recommends better site restrictions, additional groundwatercharacterization, air monitoring during excavation, additional fish sampling, and development of an emergency evacuation plan.

BACKGROUND

A. Site Description and History

Petro-Processors Inc. (PPI), operated two waste disposal facilities between 1964-1980, locatednorth of Baton Rouge, Louisiana. These two waste disposal sites, known as the Scenic Highwayarea and the Brooklawn area (Appendix A, Figure 1), were used to store various industrial andpetrochemical waste products. The two areas are located about one mile apart and cover a totalof 62 acres. There are distinct topographic features which characterize both areas. Both areasare located adjacent to Bayou Baton Rouge and are partially within its flood plain. In addition,sections of both sites are elevated, in an upland terrace above the bayous flood plain. Initially,lower portions of the Brooklawn area was located within the eastern edge of the MississippiRiver flood plain, about 5000 feet from the river channel. Current containment and remedialactivities include; fencing the perimeter of the sites and 24 hour security supervision, incinerationof contaminated water, clay capping of some contaminated lagoons, along with air and watermonitoring.

The Brooklawn area:

Brooklawn area is located on Brooklawn Drive, about 1.9 miles west of the intersection of U.S.Highway 61 and Brooklawn Drive. Bayou Baton Rouge borders both the north and west sides ofthe area and flows into Devils Swamp. The Brooklawn area occupies approximately 55 acresand includes three identifiable areas of waste disposal and contamination: (1) the bluff area, (2)the batture area and (3) the Cypress Swamp area, (Appendix A, Figure 2). The batture areacontains an upper lagoon and a lower lagoon which are located in the flood plain of theMississippi River. In June 1983, the Cypress Swamp was flooded by the Mississippi River, andflood waters came within four inches of overtopping the lagoons in the batture area. In order toprevent overflow into Bayou Baton Rouge, the lower lagoon was pumped from February 1through 6, 1985 and the upper lagoon was pumped from February 27 through March 2, 1985. Anold channel of the bayou runs through part of the area and may be a conduit for migration ofwastes. Disposal activities at the Brooklawn area began in 1969 and continued until 1980. Initially, wastes were disposed into unlined pits in the bluff area. The upper lagoon was filled andcapped with clay in late 1994. The lower lagoon is uncapped to date, and surface water ispumped and treated by incineration. The lower lagoon is scheduled to be capped in 1995.

The Scenic Highway area:

The Scenic Highway area is located on the west side of U.S. Highway 61, south of the bridgeover Bayou Baton Rouge (Appendix A, Figure 1). It is approximately seven acres in size andbegan as a large unlined pit excavated prior to 1964 to supply soil for the construction of anearby highway. The initial pit was 750 feet long, 450 feet wide and 20-24 feet deep. Waste wasdisposed of in this area from 1965 to 1969. Highway 61 delineates the eastern area boundary,and Bayou Baton Rouge borders the northern and western boundaries. At one time, waters fromthe bayou were in direct contact with the highly eroded bluff walls along the western boundary. However, the bayou has been slightly diverted in this area and erosion has been reduced. In1991, part of Bayou Baton Rouge was diverted to the west away from the eroding bluffs, whichwere later reinforced. The Scenic Highway area contains an estimated 3.5 million cubic feet ofcontaminated material, including chemical waste such as organic and volatile compounds andindustrial waste such as empty drums, pipe, and plastics. The disposal pit was abandoned in1968 and uncovered liquid waste was exposed at the surface

until 1973. The pit was closed andcovered with plastic and soil in 1974. In 1992, the Scenic Highway site was covered with a twoinch clay cap.

In response to community concerns, a health survey was conducted on November 17 and 18,1980 in the Alsen community, southeast of the PPI Site. A team consisting of one physician, onenurse and two public health investigators went to the community center to collect informationfrom people who came voluntarily for the health interviews. Approximately 140 people wereinterviewed; information was obtained for 107 households representing 367 residents or about40% of the total population of Alsen. A letter detailing the results of the health survey wassubmitted to the Director of the Division of Disease Control, State of Louisiana, on November24, 1980 (Appendix B).

In July of 1980, the U.S. Justice Department and state and local governments jointly filed suitagainst PPI and several waste generators that used the site for disposal. Since mid-1980, theresponsible industries along with regulatory agencies have conducted several investigations at thesite. On February 16, 1984, a Consent Decree for site closure was finalized with the participationof all parties and the court. The consent decree specified that the potential responsible parties(PRP), represented by NPC Services Inc., implement a remedial investigation, design a remedialplan and conduct long-term monitoring at the PPI site. It also mandated that NPC Services Inc.conduct an investigative study to verify the accuracy of the existing monitoring systems and todetermine the nature, scope, extent, and likelihood of additional contamination at the site. Thisstudy, known as the Remedial Planning Activities Report (RPA), was approved in September of1986. The Remedial Design and Construction Plan (RDCP), prepared by NPC Services, Inc.,(NPC), was finalized and approved by the U.S. Environmental Protection Agency (EPA) and theLDEQ in June of 1987.

Remedial actions began in the summer of 1987. During remedial excavation activities, volatilecontaminants were released into the air, particularly hexachlorobutadiene (HCBD) emissionsexceeded allowable concentrations at the site. As a result, in December 1987, all waste handlingactivities were stopped. A new remedy for the site was developed (Supplemental RemedialAction Plan (SRAP) which does not involve excavation of the materials, but rather the pumpingand treatment of groundwater and liquid waste by incineration. A two inch clay cap was alsoconstructed over the upper lagoon of the Brooklawn site and over the Scenic Highway site.

Currently, there are 27 total on-site monitoring wells, 130 on-site recovery wells and 98 on-siteFrench drains. Of the 27 total monitoring wells, 9 wells each are located at the Brooklawn,Scenic Highway and Vault locations. The recovery wells and French drains recover contaminatedgroundwater and liquid waste for on-site treatment. In addition, EPA is investigating the extent of contamination in Bayou Baton Rouge and Devil's Swamp.

The Agency for Toxic Substances and Disease Registry (ATSDR) released a Preliminary PublicHealth Assessment of this site on December 6, 1990. It concluded that the site represented apublic health hazard. Potential exposures were found to be inhalation of volatilizedcontaminants, ingestion of contaminated fish and wildlife, ingestion of contaminatedgroundwater and dermal contact with surface water and sediments. The preliminary healthassessment recommended investigation and monitoring of groundwater, investigation of surfacewater runoff, biota sampling and air sampling. It also recommended the implementation ofmeasures to prevent site erosion and a demographic review of the surrounding area. A draft waspresented for public comment from March 20, 1995 to May 18, 1995.

B. Site Visits

May 3, 1991 Site Visit

On May 3, 1991, health assessors and health educators from LOPH, Section of EnvironmentalEpidemiology, and LDEQ, Inactive and Abandoned Sites Division, conducted a site visit. Thesite was observed from outside the fence line.

The Brooklawn disposal area is located just south of the Schuylkill metals plant. It is surroundedby a six-foot high chain linked fence that is topped with three strands of barbed wire. Two signswere posted, one identifying the site as hazardous and another sign indicating "No Trespassing." No evidence of contamination was visible from the fence line due to the clay cap. Twelvecontaminated groundwater recovery wells were visible. In addition, the site contains ninegroundwater monitoring wells, not visible from the fence line. A wastewater treatment plant ,used to treat surface water and groundwater before discharge into the bayou, was located near thesite. A recovery system consisting of a network of pipes and drains was observed on site and wasdesigned to collect contaminated water. The cypress swamp area was drained and backfilled. Atthe time of the site visit it was covered with grass. One unlined lagoon was left on site, the lowerlagoon at the Brooklawn site. A road was under construction which runs parallel to Bayou BatonRouge, downstream from the Brooklawn area, and into the upper portions of Devil's Swamp. The road was completed in 1991 to provide access for excavation of contaminated soil from thebottom of the bayou.

There are two industrial facilities directly across Brooklawn Drive from the Brooklawn area (Reynolds Aluminum and Schuylkill Metals) with approximately 200 employees. Just east of thesite along Brooklawn Drive are the Kansas City Southern Railroad and the Kaiser Aluminumfacilities. Southeast of the site along Scenic Highway is the Rollins Waste Disposal facility. There is an extensive industrial corridor extending to the south along the Mississippi River. Theterrain in the area includes elevated bluffs and low lying areas adjacent to Bayou Baton Rouge. Itis believed that an old channel of Bayou Baton Rouge runs underneath part of the Brooklawnarea.

The Scenic Highway area was a borrow pit at one time, created during the construction of U.S.Highway 61. The unlined pit was used to dispose of hazardous waste between 1965 to 1969. The site is surrounded by a six-foot high barbed wire fence with a locked gate. No evidence ofcontamination was visible from the fence line because the site is capped. There are houseswithin 200-300 yards of the site. Surrounding land use includes recreational activities (fishingand hunting) and grazing of livestock. The terrain at the site includes a high bluff and steepbanks extending to Bayou Baton Rouge along the site's western edge.

June 15, 1994 Site Visit

On June 15, 1994, health assessors and staff from LOPH and LDEQ were given a tour of the siteby NPC representatives to assess current site conditions. Since the site visit in 1991, theBrooklawn area has undergone extensive changes. A very large, empty disposal vault is locatedapproximately 1/4 mile northeast of the Brooklawn area. This vault was originally constructed todispose of the excavated wastes. It has since become obsolete due to the change in theremediation plans from excavation of contaminated material to hydraulic containment, whilepumping and treating fluids from the ground. There have been 98 french drains and 130 recoverywells installed on-site and a total of 27 monitoring wells installed around the site. Nine each ofthese water monitoring wells are located at the Brooklawn, Scenic Highway, and the Vault sites. An on-site incinerator which will be used for burning

organic material was being installed. The upper lagoon has since been filled and topped with a clay cap in late 1994.

At the Scenic Highway area, Bayou Baton Rouge was slightly diverted so that it is now directlyadjacent to the western boundary of the disposal area. Also, the slope of the bayou's bank in thisarea has been graded and stabilized to reduce erosion.

C. Demographics, Land Use, and Natural Resources Use

The Petro-Processors site is located near the community of Alsen, (1990 population 4,178), inEast Baton Rouge Parish, (1990 population 380,105). According to 1990 census data, sixty-threepercent of the parish population is Caucasian; thirty-seven percent are non-Caucasian. Theaverage annual income for East Baton Rouge Parish is above the average for the state. Thenumber of people in the parish that are considered below poverty level is 19.3%, compared to theyearly average for Louisiana of 18.6%. The largest community in the area of the site is the cityof Scotlandville, which is located within three miles of the site. It's 1989 population was 15,113. The city of Baker is located approximately three miles east of the Scenic Highway area and is thesecond largest community in this vicinity, with a 1989 population of 12,896.

Information available for the Brooklawn area indicates that the population at risk for exposure tosite contaminants include the approximately 200 employees who work for the two facilities(Schuylkill and Reynolds) located within 400 yards north of the site. The Louisiana TrainingInstitute (LTI), several schools located in Baker and Alsen, churches and other industries arelocated within a two-mile radius of the PPI site. The LTI, is a facility for juvenile offenderswhich houses approximately 280 juveniles. It is located just off the Scenic Highway in Alsen. Also located near the site is the Juvenile Reception and Diagnostic Center, a placement center forthe juvenile offenders, which houses approximately 200 juveniles. Southern UniversityAgriculture Department is located off of Scenic Highway in the town of Alsen. During daylighthours, approximately 90 people are present at this facility. Two schools are located inScotlandville and are within a three-mile radius of the Scenic Highway area. CrestworthElementary School has an average yearly enrollment of 350 students and Crestworth MiddleSchool which is adjacent to Crestworth Elementary has an average yearly enrollment of 650students. Both of these schools are located within the Crestworth residential subdivision whichhas approximately 350 homes. In addition, the community of Alsen has one Head Start schoolwith an average enrollment of 360 children. There are about 50 people in approximately 15individual residences who live within a one-mile radius of the Scenic Highway area.

The coordinates of the Petro-Processors Inc., site is 30:34:00 north latitude and 91:10:30 westlongitude. Demographic statistics for the site included block groups 0041 1, 0042032, and0042034. These block groups include the site, the city of Alsen and surrounding areas. Figures 6and 7 (Appendix A), demonstrates the area (boxed area) included in the demographic analysis. The following tables present the demographic information for this area.

Land use in the area includes agricultural and recreational activities such as hunting, fishing,vegetable gardening, animal grazing and farming. At least 20 families within a one-mile radiusof the Scenic Highway and Brooklawn areas have vegetable gardens in their yards. Several acresof land adjacent to the Scenic Highway area are used for growing crops. Bayou Baton Rouge islocated in this area and is used for recreational water activities including fishing. Severalresidential wells are in the area, one of which is within a half-mile

of the Scenic Highway area. Groundwater use to include city water source, industrial and production wells.

Demographics for the Petro-Processors Inc., Site and Surrounding Area.

BLOCK GROUPS				
	TOTAL BLOCK GROUPS	0041 1	0042032	0042034
TOTAL POPULATION	2812	447	1270	1095
AMERICAN INDIAN	7	1	6	0
ASIAN	1	1	0	0
BLACK	2187	232	860	1095
HISPANIC	25	1	23	1
WHITE	611	213	398	0
OTHER	6	0	6	0
TOT POP.>18yr	1665	302	636	727
TOT POP.<18yr	1147	145	634	368
TOTALRESIDENCES	827	167	275	385

D. Health Outcome Data

Government agencies routinely collect data regarding the health of populations within the state. The most recent cancer incidence data from the Louisiana Tumor Registry (LSU Medical Center)was obtained for the years 1983-1990. Cancer incidence data was evaluated (Appendix C). Data for other health effects was also obtained from the Louisiana Office of Vital Statistics forthe years 1982-1988. A discussion of the evaluation of health outcome data can be found in thePublic Health Implications section.

COMMUNITY HEALTH CONCERNS

Industrial workers and residents of the local communities which surround the PPI site havereported a variety of health concerns to LOPH, ATSDR, EPA, and the National Institute forOccupational Safety and Health (NIOSH).

On November 17 and 18, 1980, a health survey was conducted in the Alsen community,southeast of the PPI Site. A team consisting of one physician, one nurse and two public healthinvestigators were in the community center collecting information from people who camevoluntarily for a health interview. Approximately 140 people were interviewed; information wasobtained for 107 households representing 367 residents or about 40% of the total population ofAlsen. Some of the health complaints included burning eyes, frequent

headaches, sinusproblems, breathing difficulties, nausea and vomiting, skin rashes and dizziness (Appendix B).

NIOSH conducted a hazard investigation in March of 1988 in response to a request submitted byrepresentatives of the Aluminum, Brick, and Glass Workers International Union. In January of1991, EPA hosted an Open House meeting for the residents of the communities surrounding PPI. At this meeting the local citizens submitted a list of questions and concerns relating to the site (Appendix D). Health related concerns from this list are included in this section.

The LOPH organized and participated in three meetings (3/12/91, 4/17/91, and 5/29/91) with agroup of 14 citizens and representatives designated as the Community Advisory Committee forPPI. The members of this Committee include citizens recognized as community leaders, workersfrom local industries, the State representative for the district, and concerned citizens from thecommunity. The Community Advisory Committee voiced their concerns and assisted LOPH inorganizing a Public Meeting to gather concerns from the whole community. The Public Meetingwas held by LOPH on May 14, 1991 with 20 community members attending.

Through NIOSH's hazard investigation, EPA's Open House, the Community AdvisoryCommittee, and the LOPH Public Meeting, the community has raised the following healthrelated concerns:

- Will workers at the Reynolds Metals Company Calcite Coke Plant experience health effectsduring remediation?
- People hunt and fish in this area. Are fish and wildlife in the area contaminated?
- Are the allergies, skin rashes, headaches, sinus infections, respiratory problems, and nose bleedsindividuals around the site experience due to the contaminants at the site?
- Do the residents on Springfield Road have a higher cancer rate than expected?
- Is the groundwater or surface water contaminated in the area surrounding the sites, and if theyare, can they cause adverse health effects?
- Will the Public Health Assessment evaluate the synergistic effect of exposure sources fromindustrial sites in the area along with exposures from the Petro-Processors sites?
- Is there an evacuation plan for the local community in case of an emergency?
- Which chemicals have breached the site? How far and where have they migrated?
- Do the Threshold Limit Values during remediation consider residents who are exposed for 24hours/day?

On February 8, 1994, the Coalition for Community Action, a citizens group near the site, held ameeting and stated a number of additional concerns.

- The community would like to see more warning signs placed around the contaminated swamparea.

- A method should be developed and implemented to inform and educate the public about thecontaminated condition of the swamp.
- The state (LDEQ and LDHH) and federal agencies (EPA) should work together to provideinformation to the public. Public service announcements, mass mail campaigns, etc. should beconsidered to reach all segments of the population.
- All landowners of property in the swamp that is impacted by the contamination should benotified and properly informed.
- People are continuing to hunt and fish in the swamp. A method must be developed to stop the harvesting of contaminated species.

Health concerns are addressed in the Community Health Concerns Evaluation section.

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