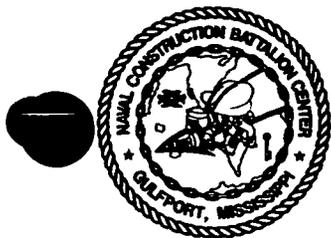


N62604.AR.000459
NCBC GULFPORT
5090.3a

FACT SHEET 19 FOR RESULTS OF DIOXIN SAMPLING ON BASE RESULTS NCBC
GULFPORT MS
9/1/1997
NCBC GULFPORT

39501 - GENERAL
13.06.00.0028

19



NAVAL CONSTRUCTION BATTALION CENTER

Gulfport, Mississippi
Installation Restoration Program

This fact sheet is one in a series informing interested citizens of the environmental investigations and remedial actions at Naval Construction Battalion Center (NCBC) Gulfport. Fact sheets will be produced at program milestones and in response to other items of public interest. Distribution is coordinated through the Public Affairs Office at NCBC Gulfport, (601) 871-2393.

FACT SHEET 19: Results of Dioxin Sampling -- Onbase Results

Introduction

Fact Sheets 3, 4, 5, and 14 discussed the results of two earlier rounds of onbase sampling at the Seabee Center. This fact sheet provides a brief summary of the results of sampling completed in May 1997.

Background

The earliest rounds of sampling showed that dioxin is present on Site 8, the Former Herbicide Orange Handling and Storage Area, and may be moving through the storm drainage ditches on the base.

The current sampling program is designed to test the soil and water in the ditches to find out if contamination is present. This program is divided into two phases. The first phase, reported here, looked at the entire base drainage area to determine where more study is needed. The second phase, to begin in the fall of 1997, will focus on the areas where higher levels of contamination were found. A more complete evaluation of the data will follow the second phase of the study.

The Onbase Sampling Program

The onbase ditches were broken up into six drainage areas. The locations of samples collected within each drainage area are shown on the map on the last page of this fact sheet.

The primary focus of the sampling program was to look for dioxin in soil and sediment. However, some water samples, including water in the ditches and groundwater in wells, were collected. Some samples were analyzed for other chemicals as well as dioxin.

How Samples Were Selected

The sampling program is designed to find the highest concentrations of dioxin. Seabee Center samplers are now able to predict where dioxin will be found because

of a recent discovery. Scientists have found that dioxin concentrations are usually highest in rich, dark soils, particularly in slow-moving water where dioxin can settle out. They also know that *nearby locations with lighter colored sandy soils or soils in areas of faster moving water may not contain dioxin*. Using this information, samples were collected from rich soil and sediment in slow-moving areas of streams and ditches. This type of sampling is called "biased" sampling.

What Was Found

The results of the sampling for each drainage area are shown on the next two pages. The results are shown in parts per trillion, or ppt. A part per trillion of dioxin is equal to one particle of dioxin in 1,000,000,000,000 particles of soil or sediment.

Please note that the figures show only the sediment results because those results were the primary focus of the study. Results from water samples are discussed in the text next to the figures.

Next Steps

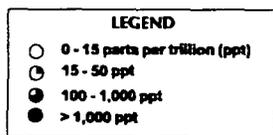
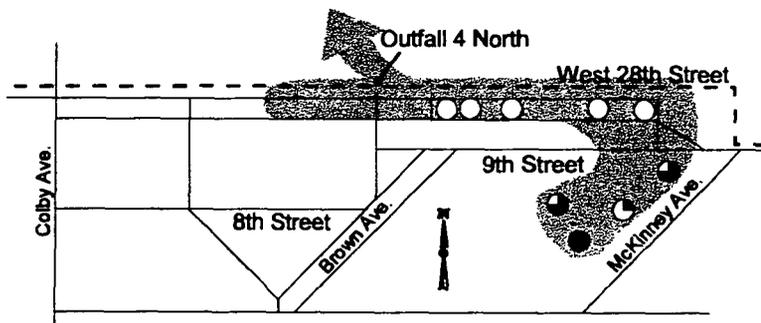
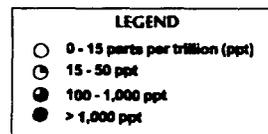
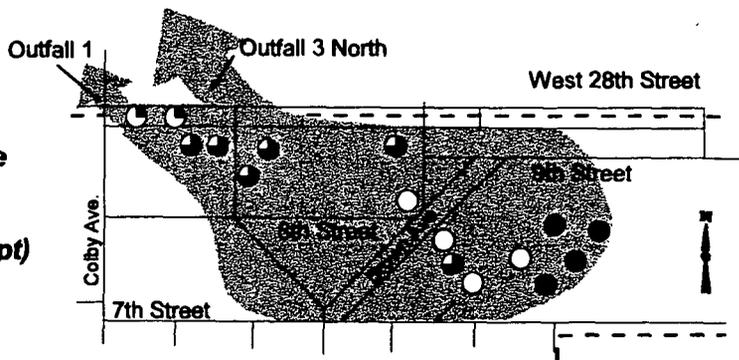
A Phase II investigation will be conducted in the fall of 1997. It will include the following steps:

- finding the extent of sediment and soils containing more than 15 ppt of dioxin;
- resampling selected monitoring wells to confirm Phase I results; and
- evaluating the results from both phases.

The results of the Phase II investigation should be available in the spring of 1998.

Drainage Area 1

- The largest drainage area includes Site 8, the Herbicide Orange storage area
- 14 sediment samples were collected in the drainage area
- Dioxin concentrations in the sediment ranged from 1 to 1,020 parts per trillion (ppt)
- Concentrations decreased with distance away from Site 8
- 33 soil samples were collected in and around Site 8
- Surface soil concentrations ranged from 0.2 to 181 ppt
- Surface water from this area flows to Outfall 3 North and Outfall 1
- Surface water concentrations ranged from 0.35 to 6.7 parts per quadrillion (ppq)

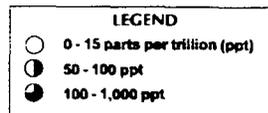
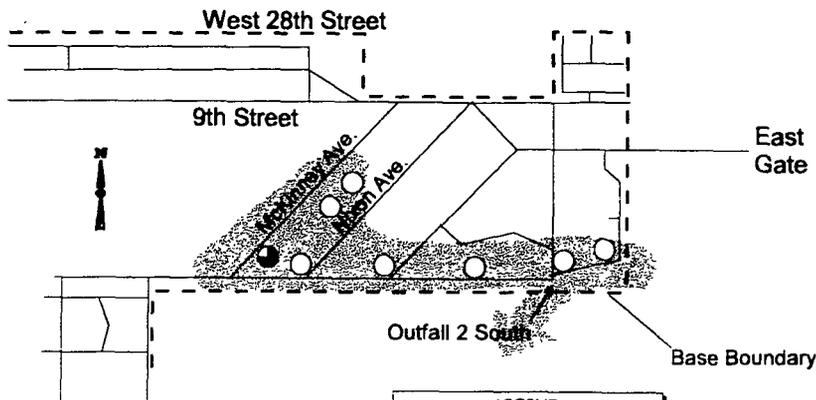


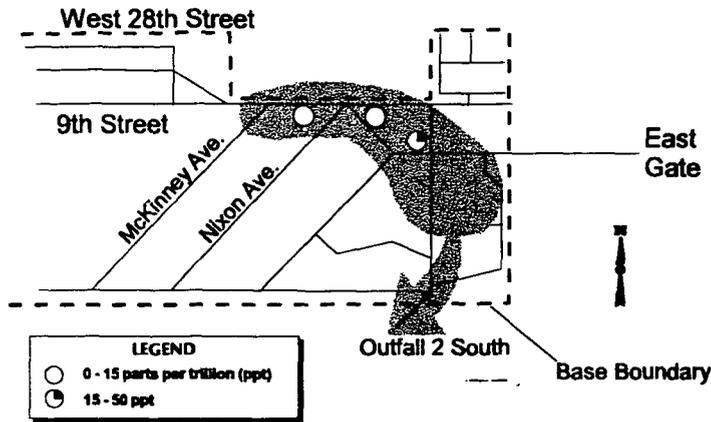
Drainage Area 2

- 9 sediment samples were collected
- Dioxin concentrations ranged from 0.5 to 4,000 ppt
- Concentrations decreased with distance away from Site 8
- Dioxin concentrations in sediment at Outfall 4 North ranged from 0.8 to 3.5 ppt
- Surface water from this area flows to Outfall 4 North
- Dioxin concentrations in the 2 surface water samples were 36.6 and 40.3 ppq

Drainage Area 3

- 8 sediment samples were collected
- Dioxin concentrations ranged from 0.2 to 120 ppt
- Concentrations decreased away from Site 8
- Surface water from this area flows to Outfall 2 South and eventually into Brickyard Bayou
- Surface water results ranged from 0.2 to 13 ppq



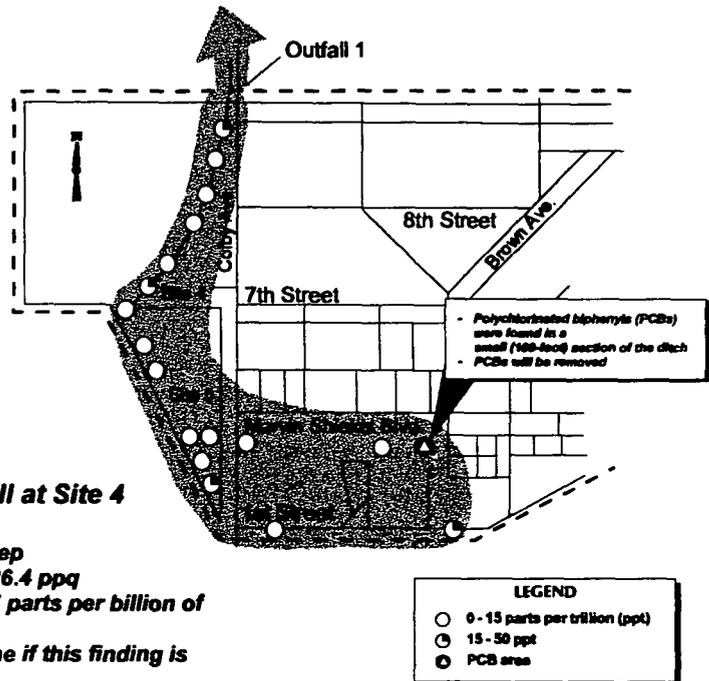


Drainage Area 4

- 3 sediment samples were collected
- Dioxin concentrations were low, from 3.3 to 32.8 parts per trillion (ppt)
- Drainage Area 4 is not connected by water flow to Site 8
- No surface water samples were collected in Area 4
- Surface water in this area flows to Outfall 2 South

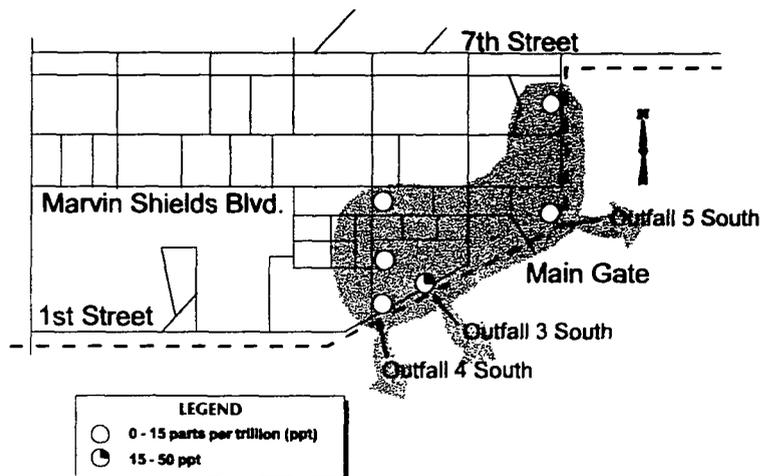
Drainage Area 5

- The study in this area included sediment, surface water, and groundwater (water beneath the ground) samples at Sites 4 and 5
- Drainage Area 5 is not connected by water flow to Site 8
- 17 sediment samples were collected
 - dioxin concentrations ranged from 0.7 to 31.1 ppt
 - Dioxin concentrations in 2 surface water samples were 2.7 and 3.7 parts per quadrillion (ppq)
 - surface water in the area flows into Canal No. 1
- Groundwater samples were collected in a well at Site 4 and a seep at Site 4
 - dioxin concentration of 83 ppq was found in the seep
 - groundwater samples at Site 4 ranged from 0.6 to 26.4 ppq
 - a single groundwater sample at Site 4 contained 37 parts per billion of vinyl chloride
 - additional sampling will be fast-tracked to determine if this finding is significant
- Groundwater samples collected at Site 5 ranged from 39.1 to 42.7 ppq of dioxin

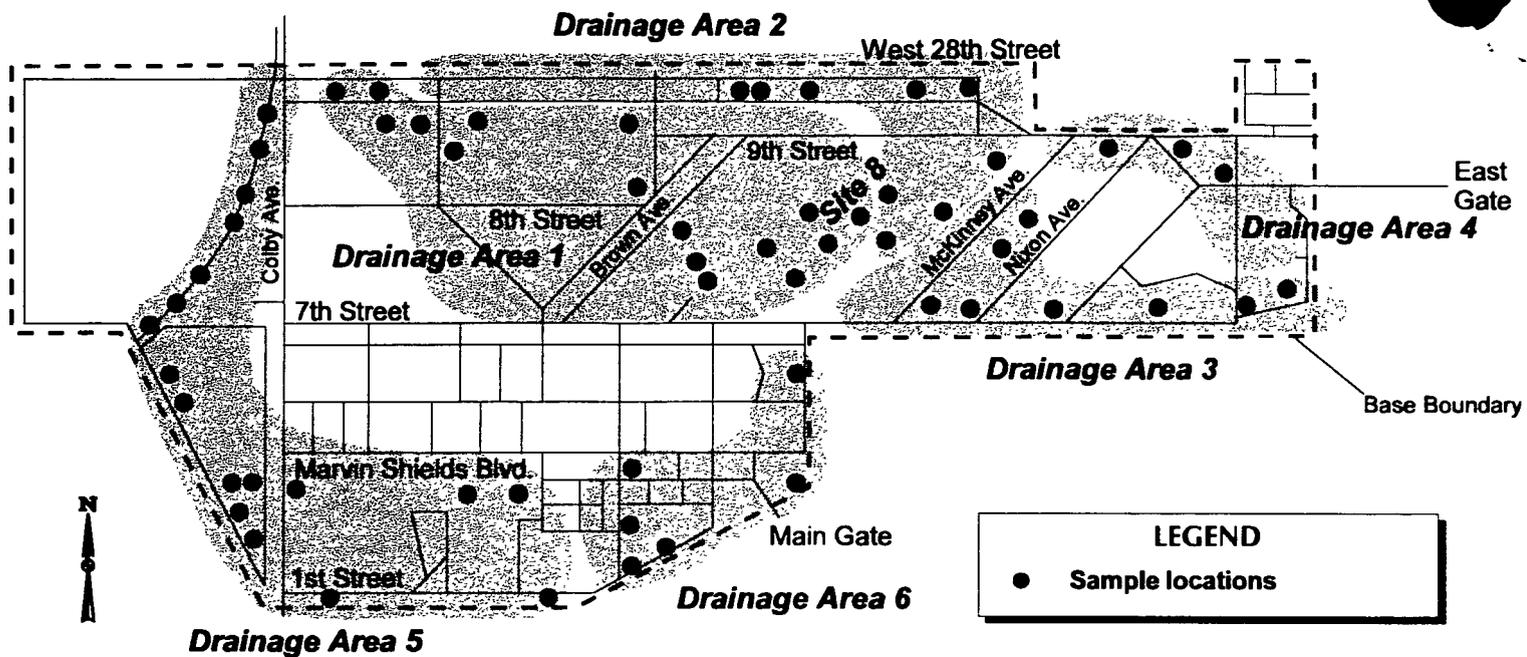


Drainage Area 6

- 6 sediment samples were collected
- Dioxin concentrations ranged from 0.8 to 20.4 ppt
- There is no water flow between Site 8 and Drainage Area 6
- Surface water in the area flows to Outfalls 3, 4, and 5 South



Sample Location Map



For More Information

If you have any questions about the Phase I sampling results or any other associated activities, you can contact the Seabee Center's Public Affairs Office, (601) 871-2393, for additional information.

The complete report of the results will also be placed in the Seabee Center's local information repository, at the following location:

*Gulfport-Harrison County Library
Reference Section
21st Avenue
Gulfport, MS 39501
Telephone: (601) 863-6411*