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SUMMARY OF 9 JULY 2013 RESTORATION ADVISORY BOARD MEETING NCBC GULFPORT MS

7/9/2013

NAVFAC SOUTHEAST

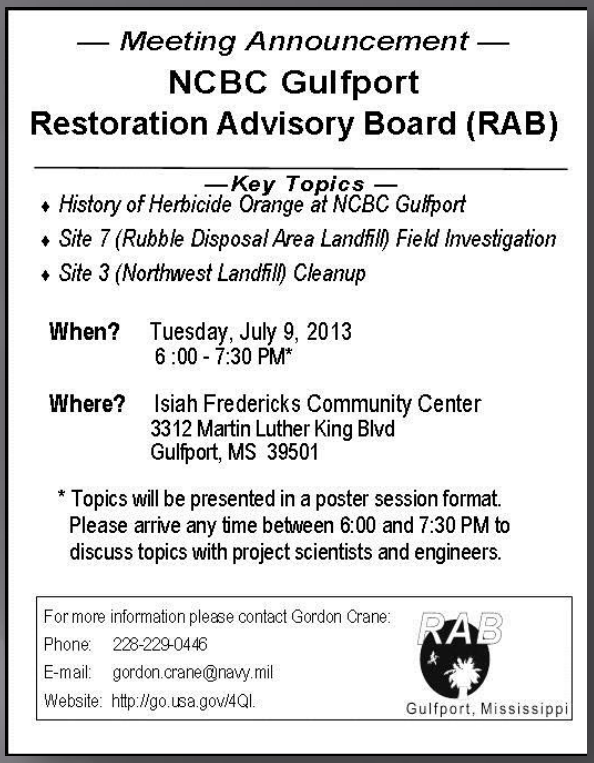
RESTORATION ADVISORY BOARD MEETING: PUBLIC AVAILABILITY SESSION

JULY 15, 2013
6:00 – 7:30 PM

ISIAH FREDERICKS COMMUNITY CENTER
3312 MARTIN LUTHER KING BLVD
GULFPORT, MS 39501

Meeting Outreach

A meeting announcement (shown on right) was placed in the *Sun Herald* on Sunday, July 8, 2013.



— Meeting Announcement —

NCBC Gulfport
Restoration Advisory Board (RAB)

—Key Topics —

- *History of Herbicide Orange at NCBC Gulfport*
- *Site 7 (Rubble Disposal Area Landfill) Field Investigation*
- *Site 3 (Northwest Landfill) Cleanup*

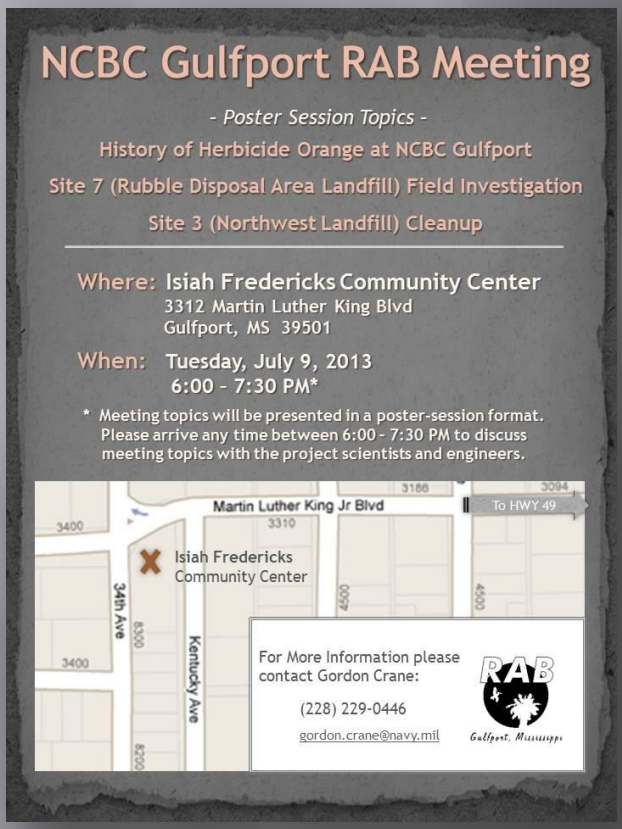
When? Tuesday, July 9, 2013
6 :00 - 7:30 PM*

Where? Isiah Fredericks Community Center
3312 Martin Luther King Blvd
Gulfport, MS 39501

* Topics will be presented in a poster session format. Please arrive any time between 6:00 and 7:30 PM to discuss topics with project scientists and engineers.

For more information please contact Gordon Crane:
Phone: 228-229-0446
E-mail: gordon.crane@navy.mil
Website: http://go.usa.gov/4QI.

RAB
Gulfport, Mississippi



Flyers were mailed to the interested parties on the RAB mailing list.

The local television station (WLOX) ran a brief news story about Agent Orange at NCBC Gulfport. The story included a reference to the RAB meeting. Many participants stated that they had come to the meeting because they watched the news earlier that day.

Meeting Format

The July 2013 RAB meeting was presented in a poster session format to provide an opportunity for community members to engage in an informal dialogue with the project team.

Seventeen presentation boards were on display at the RAB Meeting. In addition, fact sheets and handouts were also available for further information. Poster stations included:

- Chronology of Herbicide Orange at NCBC Gulfport (6 posters)
- Dioxin Sample Locations and Results (1 large map)
- Cleanup of Site 8 and Associated Off-Base Areas (3 posters)
- Canal Road Cleanup (3 posters)
- Site 7 Remedial Investigation (1 poster)
- Site 3 Remedial Action (3 posters)

Key Concerns Expressed by Community Members

28th Street School:

Question: Where is the 28th Street School on the map. The city took soil samples there before the new school was built. Do you know if they found anything?

Response: We will look into adding the school to our Sample Results map. We have not seen the results of the soil samples that were collected prior to rebuilding the school, but we will look into it.

Health Concerns:

Question: There are a lot of cancers in the neighborhoods around NCBC Gulfport. Is that because of the dioxins?

Response: The Agency for Toxic Substances and Disease Registry (ATSDR) completed an independent Public Health Assessment in 2007 to evaluate the potential for health effects associated with dioxins that were ingredients in the Herbicide Orange stored on NCBC Gulfport. The assessment concluded that there are no health risks associated with the levels of dioxins currently found in the soil and water in neighborhoods around the base.

Past Disposal:

Comment: We were involved with disposing drums of Herbicide Orange off base and believe we know where drums may be located.

Response: We are always interested in tracking down leads from past practices to expand our understanding of the history of Herbicide Orange at NCBC Gulfport. Please provide contact information so that we can discuss further.

Note: All questions and responses are not intended to be verbatim. Instead, the are the best summary of key concerns and responses expressed at the meeting.

Key Concerns Expressed by Community Members (continued)

Herbicide (Agent) Orange or Dioxins:

Question: Where is the Herbicide Orange located?

Response: Herbicide Orange was banned in the 1970's . In 1977 the herbicide was removed from the base and destroyed at sea on a special incinerator ship. When we talk about the cleanup of dioxins, we are talking about cleaning up the dioxin that was a chemical byproduct of the Herbicide Orange manufacturing process. Dioxins were not intended to be part of the Herbicide Orange mixture. There are many other kinds of dioxins that are not linked to the manufacture of Herbicide Orange.

Question: The ***History of Herbicide Orange at NCBC*** Gulfport ends at 2009. Have you done any more work since then?

Response: Yes, we have been performing Long Term Monitoring and have instituted some Land Use Controls since 2009. We will update the display and fact sheet to include work performed since 2009.

Question: Do you plan on collecting any more samples in the neighborhoods north of the base?

Response: At this time we are planning to collect Long Term Monitoring samples in the off-base areas that were cleaned up in 2006 (northeast of the intersection of Canal Road and 28th Street). No other off base samples are currently planned. However, we take community information very seriously and will always consider additional sampling when there is a likelihood of contamination that would have originated on the base.

Note: All questions and responses are not intended to be verbatim. Instead, the are the best summary of key concerns and responses expressed at the meeting.

Meeting Attendees

RAB Members:
Gordon Crane (NCBC Gulfport Representative)
Bob Merrill (Mississippi Department of Environmental Quality)
Ron Schmidtling
Philip Shaw

Community Members:
James Black
Glenn Cogg
Frances Fredericks
Patricia Harrien
John Johnson
Rufus Johnson
Degra McLaughlin
Raymond McLaughlin
Howard Page
Rene Pearce
Marie Ross
Ruth Story
Charles Vonder Bruegge

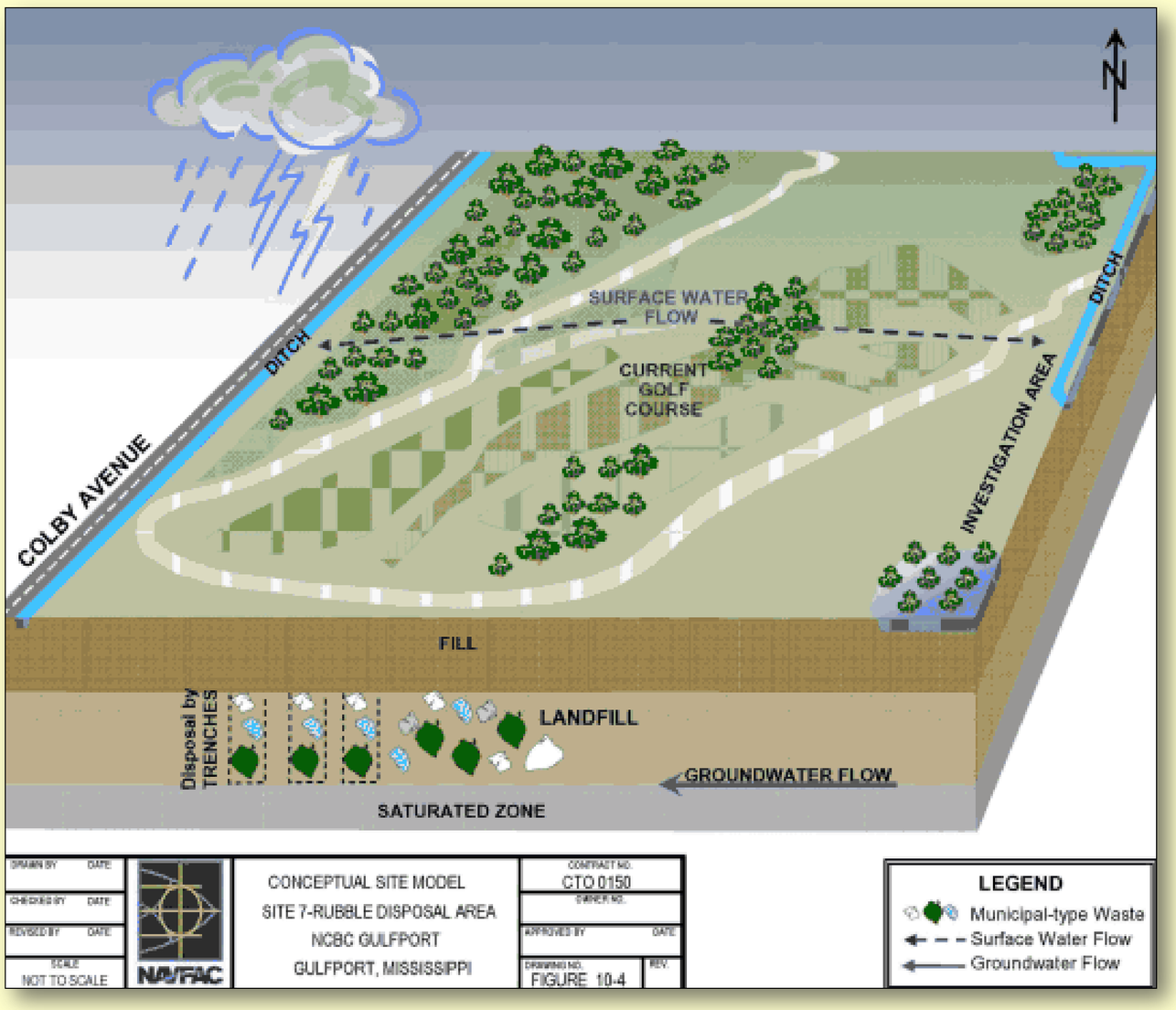
Navy Representatives:
Helen Lockard (Naval Facilities Engineering Command)
Lisa Noble (NCBC Gulfport Environmental Manager)
Bob Fisher (Naval Facilities Engineering Command)

Technical Support:
Greg Roof (Tetra Tech Project Manager)
William Olson (Tetra Tech Lead Geologist)
Nancy Rouse (Tetra Tech Community Relations Specialist)

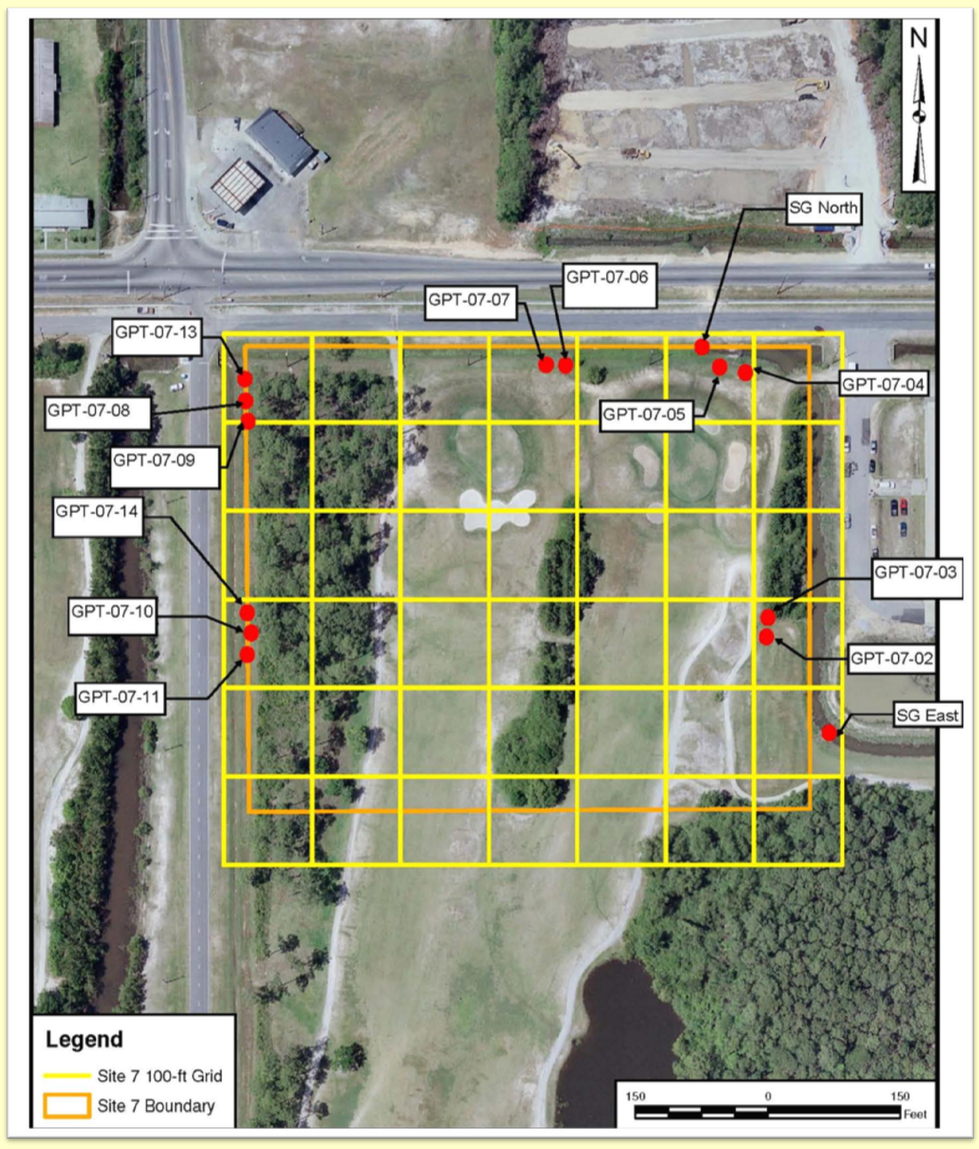
Site 7, Rubble Disposal Area Landfill Remedial Investigation

History of Site 7, Rubble Disposal Area

- Operated as a landfill from 1978 -1984.
- Received construction and building demolition debris including concrete, lumber, and scrap metal.



This Site Conceptual Model shows the Navy's understanding of Site 7 before the Remedial Investigation.



- Groundwater samples were collected at each of the points indicated by the red dots shown in this figure.
- The yellow grid was used to choose locations for other types of samples such as soil, landfill gas, soil gas, and landfill cover thickness.
- The gold line shows the Site 7 boundary.

Remedial Investigation at Site 7

- Geophysics helped define the boundaries of the site by locating the disposal "cells."
- A soil gas study (passive soil gas) was used to find areas with methane, volatile organic compounds, and hydrogen sulfide.
- Soil samples were collected on the surface to define the areas of PCBs, pesticides, polyaromatic hydrocarbons (PAHs), and dioxins in soil.
- Monitoring wells were installed and groundwater samples were collected.
- Surface water and sediment samples were collected.

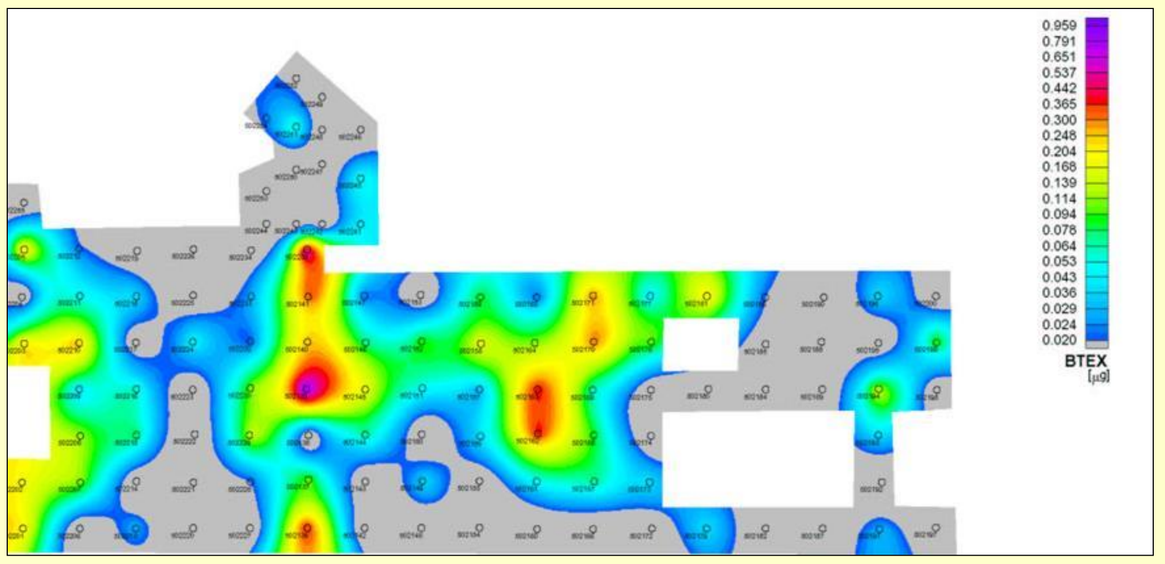
- Actual locations of passive soil gas and landfill gas samples are shown by the gold dots in this figure.
- Soil cores were collected at each of these points to determine the thickness of the existing landfill cover.
- Soil samples were collected at roughly half of these locations.

July 2013

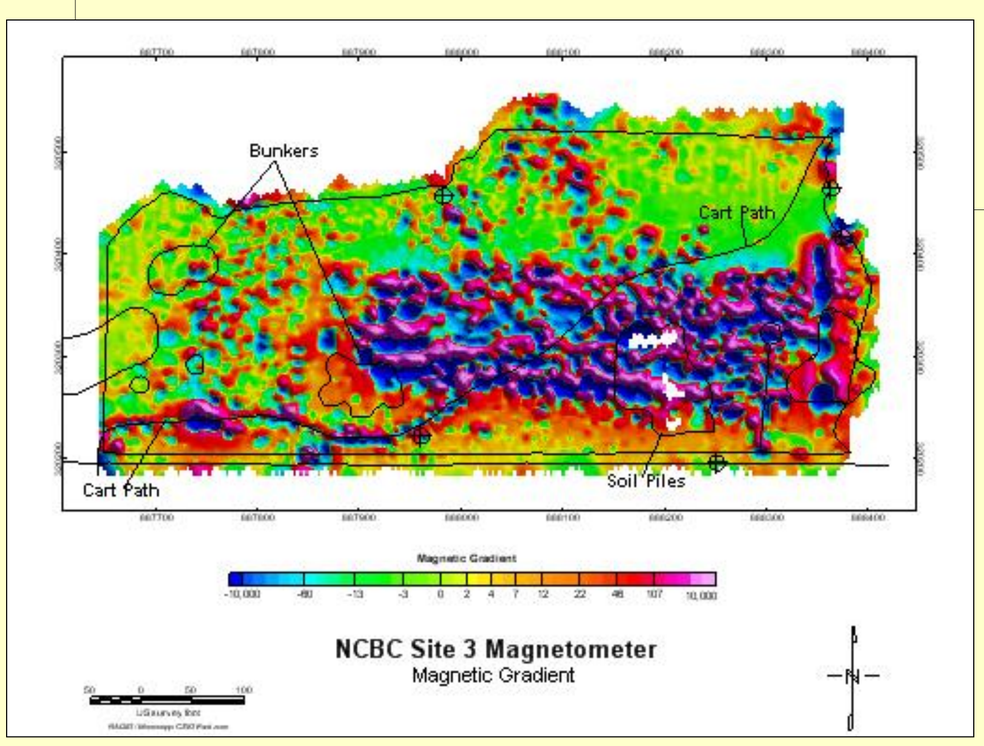
Remedial Investigation at Site 3 Northwest Landfill and Burn Pit

History of Site 3, The Northwest Landfill and Burn Pit

- Operated as a landfill from 1948 until the mid-1960's.
- A fire-fighting training pit was frequently used from the mid-1950's until 1966.
- Approximately 30,000 tons of solid waste was disposed in the landfill.
- Approximately 130,000 gallons of waste fuels, oils, and solvents were disposed or burned in the landfill
- The site is currently covered by the 16th Fairway and Green of the Pine Bayou Golf Course.



The map shows the results of the soil gas survey for BTEX. BTEX is an acronym for benzene, toluene, ethylbenzene, and xylene. This group of volatile organic compounds is found in petroleum hydrocarbons, such as gasoline, and other common environmental contaminants.

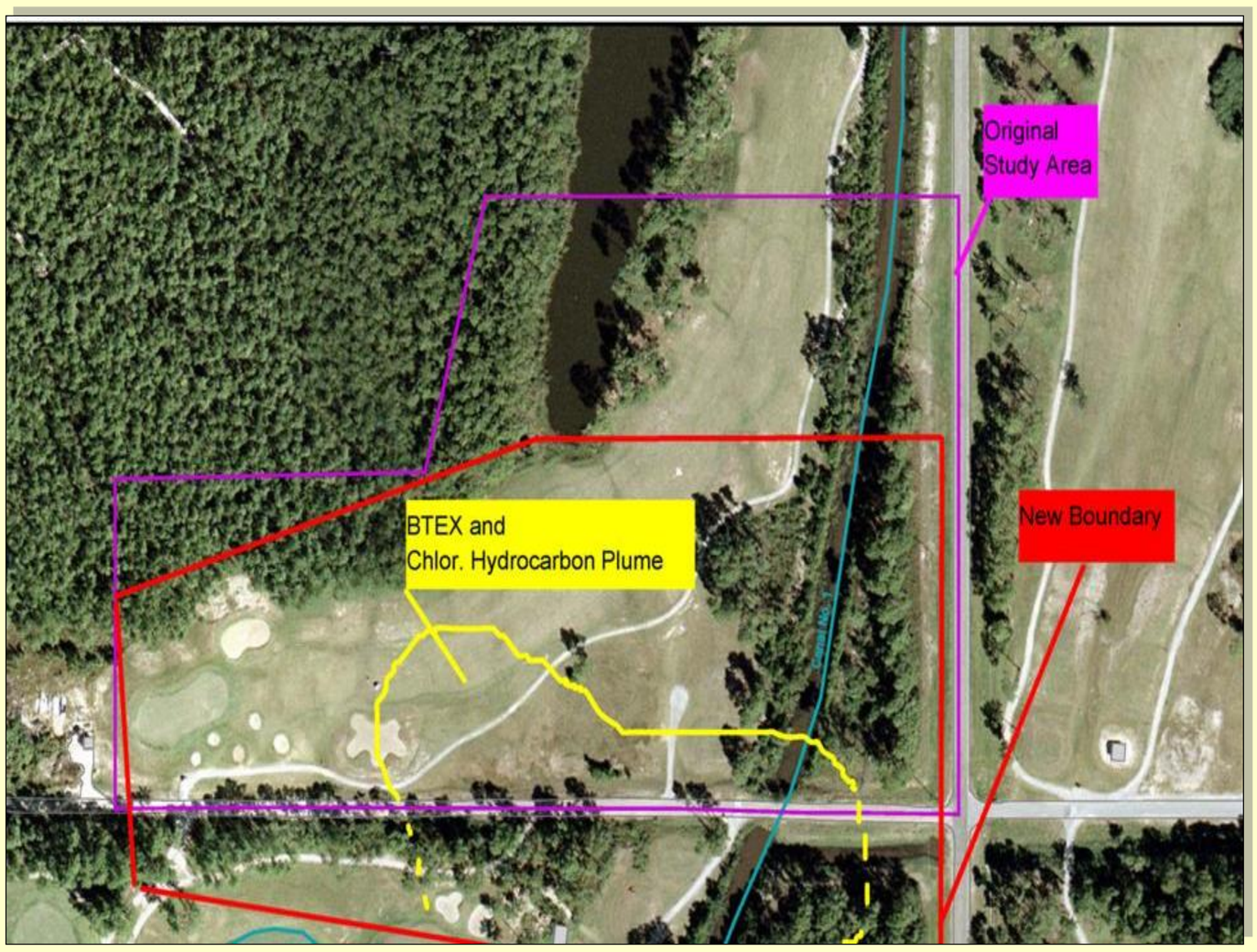


Results of the magnetometer survey helped define the boundaries of the site.

Remedial Investigation at Site 3

- Geophysics was used to define the boundaries of the site and to locate disposal "cells."
- A soil gas study combines with a mobile laboratory allowed us to successfully map areas with contamination such as gasoline, diesel, and solvents.
- The investigation results included establishing the site boundary and discovering a plume composed of liquid wastes.

A magnetometer measures the strength and/or direction of the magnetic field in the vicinity of the instrument. The little white dome is a GPS receiver.



The original and new boundaries of Site 3.

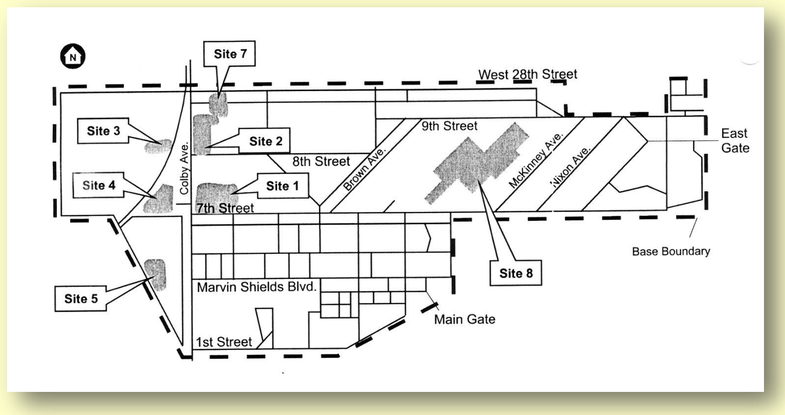
Remedial Investigation at Site 3 Northwest Landfill and Burn Pit

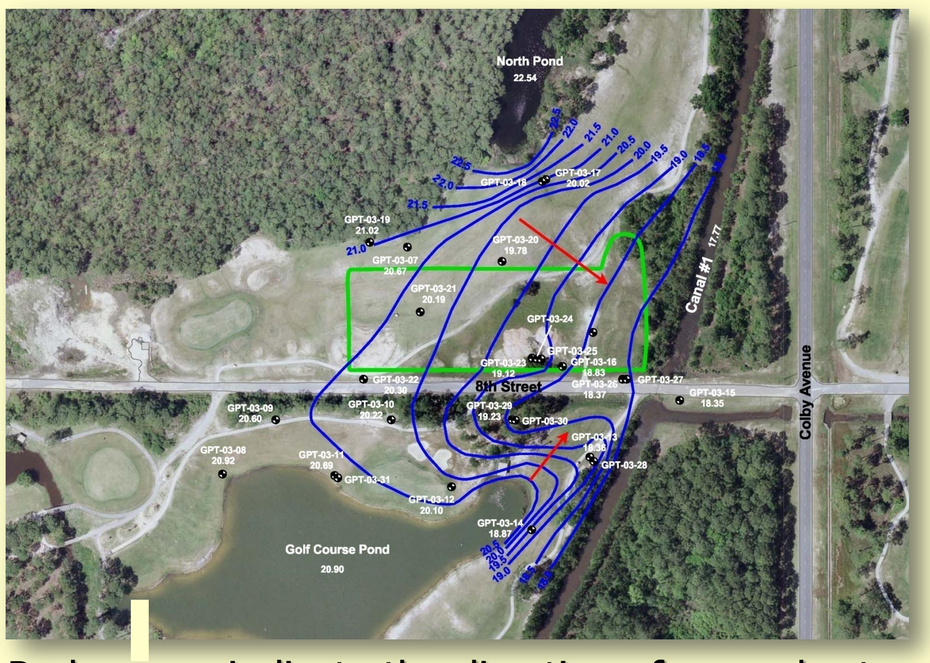
The 2 Phases of the Site 3 RI

- Initial field investigations were completed in October 2007. The studies included soil soil gas collection and assessment; geophysical investigations; and soil, surface water and sediment sampling.
- Monitoring wells were installed and sampled in 2007.

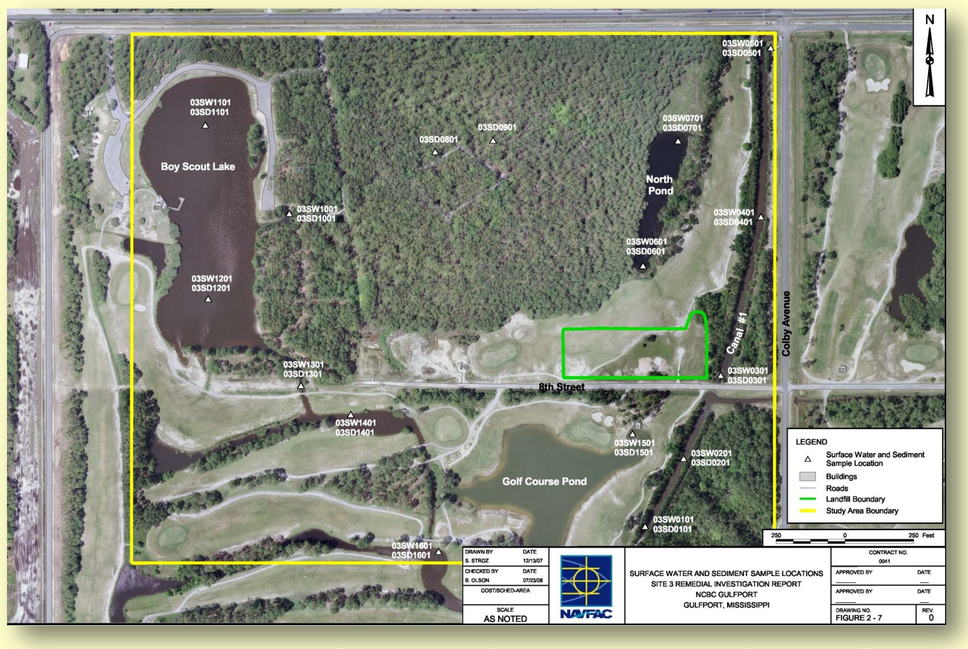
Pesticides found in the surface soil were found at levels considered to be safe for humans. Polynuclear aromatic compounds (PAHs) were found in three samples at concentrations that may pose a health risk to potential future residents. PAHs will be addressed in the Feasibililty Study.

Site 3 is located along Canal No. 1 in the northwest corner of NCBC Gulfport



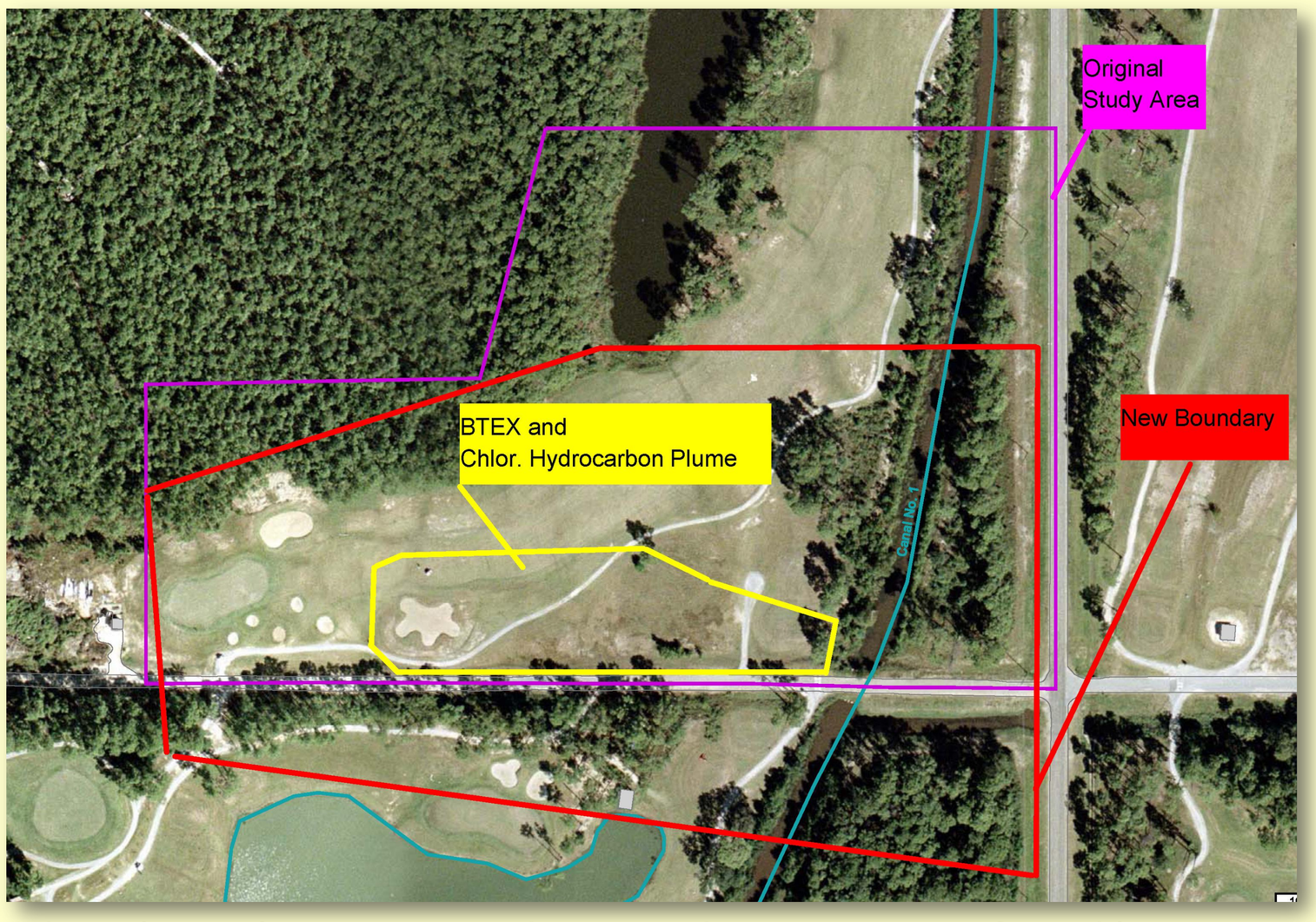


Red arrows indicate the direction of groundwater flow in the vicinity of Site 3.



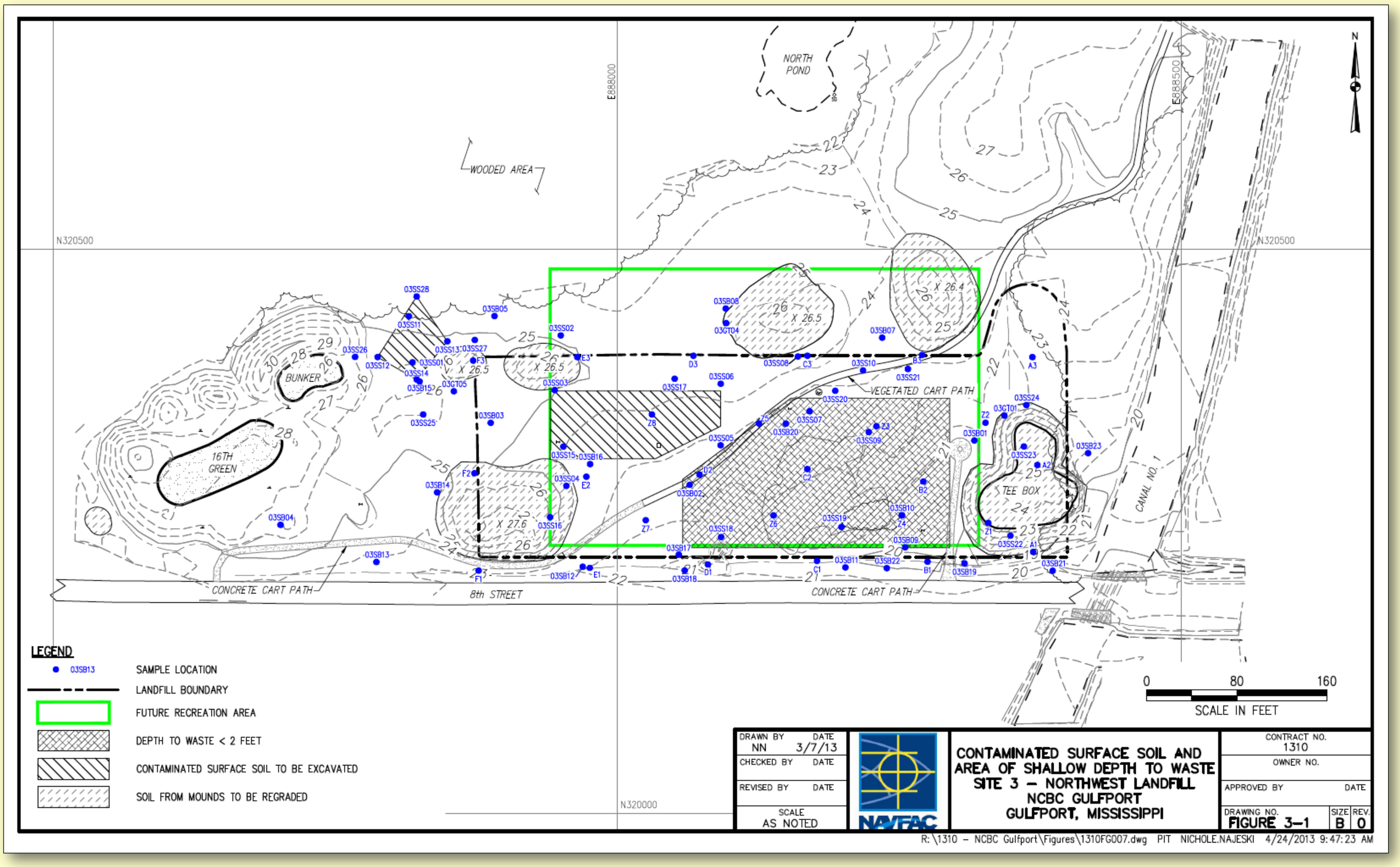
Concentrations of pesticides, PAHs, and metals in the surface water and sediment were below levels considered be a human health risk. Potential risks to the environment will be addressed in the Feasibility Study.

The boundaries of a groundwater solvent plume were defined with groundwater sampling and analysis.



The solvent plume at Site 3 has spread over an area of roughly 90,000 square feet and has reached a maximum depth of 24 feet below the surface.

Cleanup at Site 3
Northwest Landfill and Burn Pit

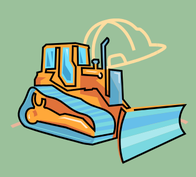


Remedial Action (Cleanup) at Site 3

Cleanup of Contaminated Soil

The area within the green line (shown on Figure 3-1 above) will be developed into a recreation field. The area will be mounded in the middle to allow for surface drainage.

Contaminated soil on the site will be excavated and moved to the southeast portion of the future recreation field.



Existing soil mounds on the site will be regraded during construction of the recreation field and covered with clean soil.

Additional clean soil will be added to all areas that have less than two feet of cover over landfill waste. When construction is completed, **at least two feet of clean soil will cover all contaminated soil and landfill waste so that there will be no risk of exposure to users of the athletic field.**

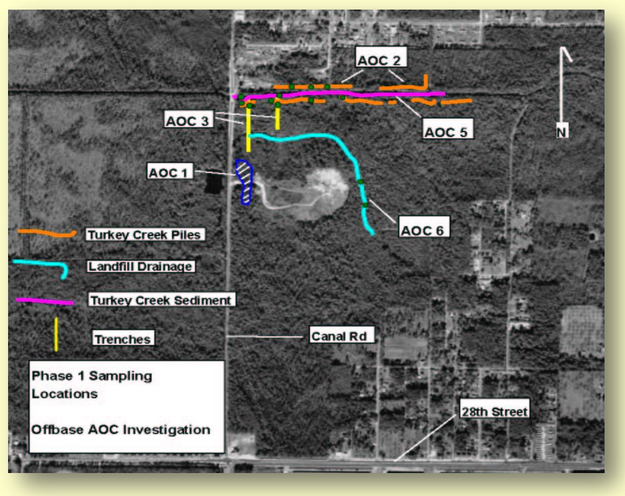
Cleanup of Contaminated Groundwater

Natural processes (called *Natural Attenuation*) are breaking down chlorinated solvents (solvents containing chlorine) in the groundwater at Site 3. Groundwater samples will be regularly collected to monitor the progress of these natural processes and to ensure that contamination is not moving beyond site boundaries.

Herbicide Orange at NCBC Gulfport

2007

The off-base excavation and restoration is completed. The contaminated material is placed on the Former Herbicide Orange Storage Area (Site 8) and mixed with Portland cement. The stabilized material is then covered with 12 inches of clean concrete.



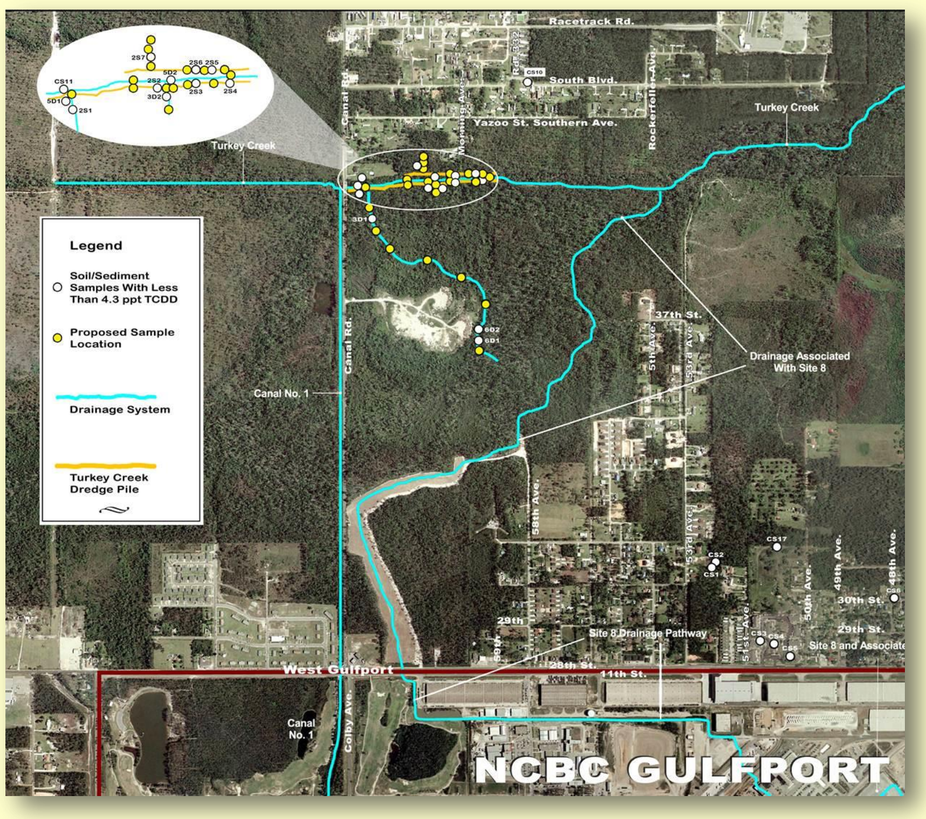
The excavated off base areas were restored to wetlands conditions.

Sampling of six Off Base Areas of Concern, which were identified by community members, begins in September 2007.

2008

The Canal Road Dredge Pile cleanup begins in April 2008 with building a road on the west side of the canal to access the dredge piles.

Contaminated soil is excavated, transported to Site 8B on NCBC Gulfport. The soil is stabilized on site by mixing it with Portland cement and spreading it in uniform layers.



Results of the second phase of the Off Base Area of Concern sampling are completed. No significant levels of dioxins were found in the samples.

Results of Off Base Areas of Concern sampling are reported in March 2008. Additional sampling of four of the areas is recommended.

2009

Off Base Area of Concern sampling continues by collecting additional surface water, sediment, and soil.

Four permanent groundwater wells are installed and sampled to further study the presence of dioxin in an earlier groundwater sample. Dioxins related to Herbicide Orange are absent in these samples.

Updated April 2013

Canal Road Cleanup

Preparation for the Cleanup

The Canal Road Dredge Piles were difficult to access. To reach the piles, it was necessary to remove trees and build access roads.

Excavating and Transporting the Contaminated Soil

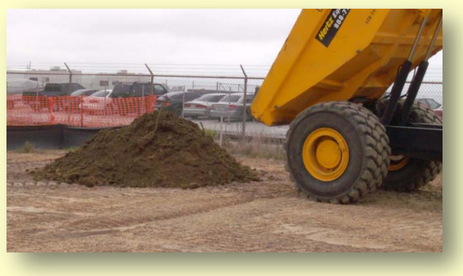
Soil was excavated, placed on trucks, and covered with tarps.

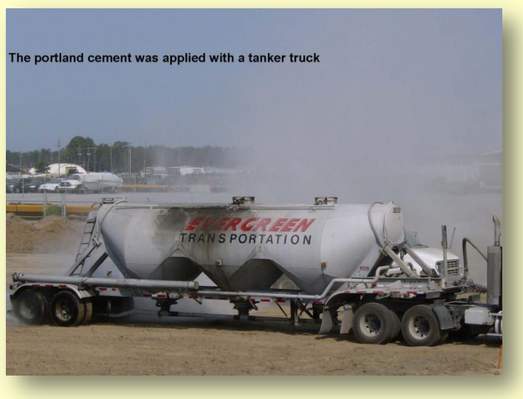
Trucks were decontaminated prior to leaving each work area.

Soil samples were collected to confirm that contaminated soil had been removed.

Treating the Soil and Finishing the Grade

Soil from the Canal Road Dredge Piles was placed on Site 8B and stabilized with Portland cement.





Updated April 2013

PGH P:\GIS\GULFPORT_CBC\MAPDOCS\MXD\SITE 8 DIOXIN SAMPLE LOCS2013.MXD 04/04/13 JN

N

Note:
Aerial photograph from ESRI Bing Maps Aerial map service (© 2010 Microsoft Corporation and its data suppliers).

Legend

- Enviornmental Tissue < 4.26 or Non-Detect
- Enviornmental Tissue 4.27 to 38.2
- Groundwater < 4.26 or Non-Detect
- Sediment < 4.26 or Non-Detect
- Sediment 4.27 to 38.2
- Sediment > 38.3
- Soil < 4.26 or Non-Detect
- Soil 4.27 to 38.2
- Soil > 38.3
- Surface Water < 4.26 or Non-Detect
- Surface Water Flow
- Site Boundary
- Installation Boundary

3,500 0 3,500
Feet

DIOXIN SAMPLE LOCATIONS
GULFPORT, MISSISSIPPI
REVISED APRIL 2013

CONTRACT NUMBER		CTO NUMBER	
APPROVED BY	DATE		
APPROVED BY	DATE		
FIGURE NO. 1		REV 0	

NAVFAC

DRAWN BY	DATE	SCALE	
J. NOVAK	4/4/2013	AS NOTED	
CHECKED BY	DATE		
N. ROUSE	04/04/13		
REVISED BY	DATE		

The Dioxin Cleanup

Excavate, Consolidate, Stabilize and Cap

- Cleanup involved excavating dioxin-contaminated soil, ash, and sediment from various locations on the base and in an off-base area north of 28th Street.
- The contaminated material was placed on the Former Herbicide Orange Storage Area (Site 8), mixed with cement, and compacted.
- A cap consisting of roller compacted concrete (RCC) is being placed on top of the solidified contaminated material. The cap is designed to prevent human contact with the stabilized soil and as an additional measure to keep contamination from moving off of the site.

1 Excavation

Contaminated material from on and off base is removed with large excavators.

2 Stabilization

Excavated material is moved to Site 8A.

The material is blended, mixed with cement, placed on Site 8A, and compacted. The resulting layers are referred to as ***"stabilized soil."***

3 Capping

The stabilized soil is capped with roller compacted concrete (RCC).

4 Institutional Controls and Monitoring

Access to the site will be limited with land use controls.

Environmental monitoring will ensure that dioxin remains on the site.

Off-Base Cleanup

The off-base area of excavation is shown in as "areas of excavation." This photo was taken just before hurricane Katrina.

Wetland Restoration Facts

Before beginning the cleanup, wetland areas were mapped and a survey of the plants species present was completed.

Plants present in the wetland prior to the cleanup included slash pine on the periphery; bald cypress, sweet bay and red maple on the margins; and bald cypress, sweetbay, and tupelo in the inner portion of the wetlands.

The wetlands are being restored in three steps:

1) The site was restored to pre-cleanup elevations to encourage natural hydrological processes to resume.

2) Soil used to fill the wetlands were selected to encourage wetland plant growth. The soil used was medium textured top soil with 5-8% organic matter.

3) The wetlands will be seeded with a mixture appropriate for non-tidal marshes in the coastal plain, including native rush, bulrush, and sedge, intermixed with various native wildflowers. Later in the year, when the soil is saturated, bare root seedlings of pine, bald cypress, water tupelo, water oak, and water hickory will be planted.

The contaminated area north of NCBC Gulfport was located in a heavily wooded wetland.

Trees from the wetland were removed and used as a base for an access road for the cleanup.

Contaminated sediment was excavated from the wetlands.

Excavated material was placed in a truck and transported to Site 8 on NCBC Gulfport.

Site 8 Cleanup

Site 8 is the Former Herbicide Orange Storage Area. The ash piles shown here were created during the incineration of dioxin-contaminated soil in the late 1980's.

One of the first steps in the cleanup project was to consolidate ash piles prior to leveling Site 8.

Dioxin-contaminated soil, ash, and sediment were staged on Site 8.

A paving machine placed two six-inch layers of concrete over the solidified material, to create a 12-inch-deep cap.

Contaminated materials were mixed with 5% Portland cement, placed onto area 8A, and compacted. The resulting layers are referred to as stabilized "soil."

The concrete was then compacted with a roller. Compaction of 98.5% or better was achieved.

Concrete testing results showed unconfined compressive strength of greater than 5000 psi and flexural strength greater than 450 psi.

Site 8 Cleanup Facts

Nearly 100,000 tons of stabilized soil were placed under the Roller Compacted Concrete (RCC) cap.

Dioxin concentrations in the stabilized soil layers were not detectible in laboratory samples.

Testing has shown that the RCC is exceeding all strength requirements.

Site 8 near completion.