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MEETING SUMMARY AND POSTER MATERIALS PRESENTED AT THE NOVEMBER 2014 RESTORATION ADVISORY BOARD MEETING AND PUBLIC AVAILABILITY SESSION NCBC GULFPORT MS
11/3/2014
NAVFAC SOUTHERN

Restoration Advisory Board Meeting
&
Public Availability Session

November 3, 2014

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

Meeting Outreach and Attendance

A meeting announcement (shown to the right) was placed in the Sun Herald.

— *Meeting Announcement* —

NCBC Gulfport
Restoration Advisory Board (RAB)

—*Key Topics* —

Rubble Disposal Area (Site 7)
Remedial Investigation Update

Haul Road Removal North of 28th Street

When? Monday, November 3, 2014
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 feel free to arrive any time during the meeting for discussions with NCBC Gulfport's Environmental Restoration Program project team.

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

RAB
Gulfport, Mississippi

A flyer was mailed to the interested parties on the RAB mailing list.

Meeting Format and Content

The July 2014 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 available for further information. The five topics presented included:

- The Environmental Restoration Program Update
- Remedial Investigation at the Rubble Disposal Area (Site 7)
- Off-Site Haul Road Removal
- The Chronology of Herbicide Orange at NCBC Gulfport
- Dioxin

Meeting Attendees

RAB Members:
David Marshall (Alternate Community Co-Chair)
Gordon Crane (NCBC Gulfport Representative)
Joyce Shaw
Philip Shaw
Bob Fisher (Naval Facilities Engineering Command)

Community Members:
Fred Boykin
Robmaeda O. Taylor

NCBC Gulfport Representatives:
Rob Mims (Public Affairs Officer)
Lisa Noble (Environmental Manager)

Technical Support:
Greg Roof (Tetra Tech Project Manager)
William Olson (Tetra Tech Lead Geologist)
Nancy Rouse (Tetra Tech Community Relations Specialist)
Jon Overholtzer (CH2 MHILL)

Key Concerns Expressed by Community Members

Q: Our coast is a mess. Is there any possibility that dioxins or other contamination from the base could have reached the coast and caused the current conditions there?

A: We sampled all of the ditches that leave the base and found that concentrations of contaminants decreased significantly with distance from the base. Dioxins were found in some samples close to the base, just north of 28th Street and along Canal Road. The Navy has taken action to remove all of identified contamination from these areas. All of the contaminated material was moved back to Site 8 on NCBC Gulfport and stabilized with concrete to keep it from moving off base again.

Q: There is an old dump on the north side of Gulfport that I believe you should investigate.

A: City landfills and abandoned dumps are not part of the Navy's Environmental Restoration Program (ERP) that we are discussing here tonight. This program involves proactively discovering, investigating, and cleaning up any site that was contaminated by Navy activities. The Mississippi Department of Environmental Quality may be a better resource to address questions and concerns outside of the Navy's program.

Q: I still think that many of the health concerns in the area could have been caused by the dioxins that were released back when the Herbicide Orange as stored on base. I think you need to do a health study.

A: The agency responsible for that type of study is the Agency for Toxic Substances and Disease Registry (ATSDR). The ATSDR completed a Public Health Assessment for NCBC Gulfport in 2004. At that time, the United State's Environmental Protection Agency's (USEPA's) acceptable level for dioxin in soil was 1 part per billion (ppb). This value (1 ppb) was therefore used as the acceptable level of dioxin in soil in the Public Health Assessment. Since that time the EPA has reevaluated dioxin and established new, lower health-based standards. At this time we are not aware of any action ATSDR is considering or may take in response to the new standards."

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.

Environmental Restoration Program (ERP) Update November 2014

Location of Environmental Restoration Program Sites at NCBC Gulfport

Site 1: Disaster Recovery Disposal Area

- Site 1 is a closed landfill where a mock disaster recovery training area was located. The landfill was used from 1942-1948.
- The Proposed Plan for cleaning up the site was presented at the April 2014 RAB and Public Meeting.
- The decision to construct a landfill cover has been recorded in a Decision Document and has been signed by NCBC Gulfport's Commanding Officer.

Site 2: World War II Landfill

- Site 2 is a closed landfill where general refuse generated at the base was disposed from 1942-1948.
- The Remedial Investigation (RI) Report has been completed and the results were presented at the July 2014 RAB meeting.
- A Feasibility Study (FS) and Proposed Plan have been drafted and are in review by the team and will be presented to the public in the near future.

Site 3: Northwest Landfill and Burn Pit

- Site 3 is a closed landfill that was the primary disposal area for the base from 1948-1968. A burn pit on site may have been used for fire-fighting training.
- A landfill cover was installed in August 2014 to prevent contact with buried waste and polycyclic aromatic hydrocarbons (PAHs) found in surface soils.
- Groundwater is being sampled for Volatile Organic Compounds (VOCs) and metals to ensure that landfill contents are not moving from the site. Sample results show that the remedy continues to be protective of human health and the environment.
- This Site in now being used as a recreational field.

Site 4: Golf Course Landfill

- Site 4 operated as a landfill from 1966-1972.
- A landfill cover was installed in 2011 to prevent contact with buried waste.
- Groundwater is being sampled to ensure that chlorinated solvents in he groundwater are breaking down as anticipated. Landfill gas is monitored for the presence of methane and hydrogen sulfide. Sample results show that the remedy continues to be protective of human health and the environment.

Site 5, Equipment Training Area Landfill

- The Site 5 landfill operated from 1972-1976.
- A landfill cover was installed in July 2009 to prevent contact with buried waste.
- Groundwater is being sampled for organic compounds and pesticides. Landfill gas is being monitored for the presence of methane and hydrogen sulfide. Sample results show that the remedy continues to be protective of human health and the environment.

Site 6, Fire Fighting Training Area

- Site 6 contained two fire-fighting training pits which operated between 1966 and 1975.
- Investigations in the early 1990's found free "floating" petroleum product in the groundwater beneath the site. Groundwater was treated from 1996 to 2006 to remove the bulk of the petroleum product.
- Long-term monitoring began in 2009. Sample results show that remaining product at the site is breaking down though natural processes and that the remedy continues to be protective of human health and the environment.

Environmental Restoration Program (ERP) Update November 2014

Site 7, Rubble Disposal Area

- This 12.7-acre site reportedly received construction rubble from 1978-1984.
- Field studies for the Site 7 Remedial Investigation are nearing completion. This study resulted in a change in the site boundaries, as shown below.

Modified Site 7 boundaries based on the Remedial Investigation

Original Site 7 boundaries

Site 8, Former Herbicide Orange Storage Area

- Site 8 was used by the Air Force to store Herbicide Orange during and after the Vietnam War.
- Some of the drums of the herbicide leaked over time, releasing dioxin contamination into the soil and ultimately into the ditches that led off-base.

Site 8A: A concrete cap was constructed in 2006. Sediment and Groundwater Long Term Monitoring is ongoing.

Site 8B/C: Sediment Long Term Monitoring is ongoing.

Off Base Areas of Concern: Remedial activities have been completed and groundwater monitoring is ongoing. Most recently, the haul road that was constructed to support the cleanup action was removed and the area was restored to wetlands.

Logs from the haul road were transported to a local landfill.

Site 10, PCBs in Ditches

- PCBs were found in ditches next to the NCBC Gulfport parade ground.
- Remedial actions were conducted in 1999 to remove the source of PCB contamination.
- The final remedial action (construction of a concrete cover) was completed in May 2010.
- Groundwater is being sampled for VOCs and PCBs.

Site 11, Wood Preservative Disposal Area

- Site 11 was a former wood treating facility located west of the recently constructed Warehouse 215 on base.
- Twenty nine (29) buried drums of coal tar distillate were found on the site in summer of 2002.
- Drums were removed and disposed, contaminated soil was removed, and groundwater monitoring was initiated under a quick-response program.
- Groundwater sampling is being conducted to monitor conditions at the site.

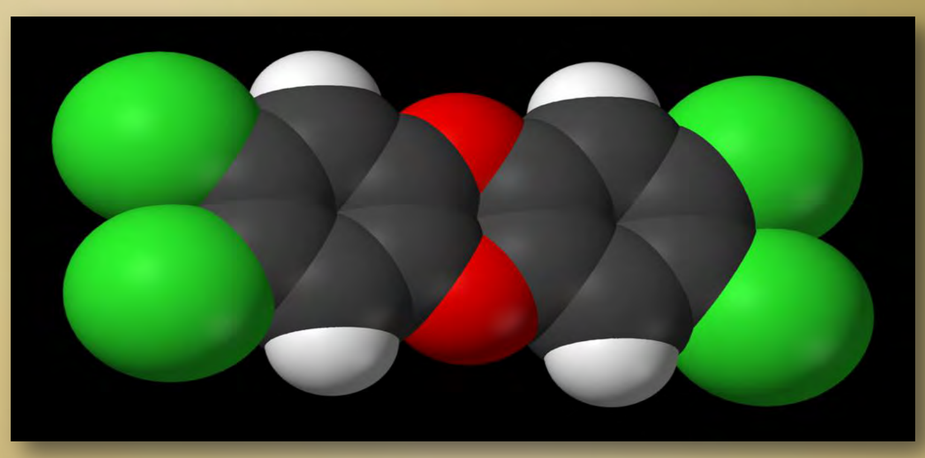
Military Munitions Response Program

- A Preliminary Assessment identified 10 sites where small arms were potentially used.
- No further investigation of the sites are planned under the Environmental Restoration Program.

The Cleanup Process

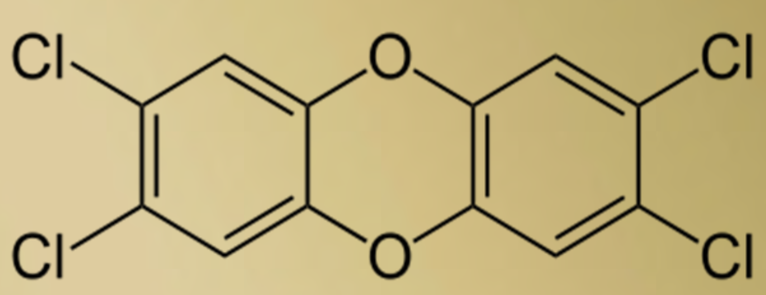
Dioxin

What is Dioxin?



- Dioxin is the common name for a group of compounds that share similar chemical structures and biological characteristics.
- These chemical are colorless, odorless compounds containing carbon, hydrogen, oxygen, and chlorine.

What is TCDD?



TCDD

- Often, the term “dioxin” is used to refer to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin, or more simply TCDD.
- TCDD was formed as a byproduct when Herbicide Orange was manufactured.

- Herbicide Orange was used during the Vietnam War to remove leaves from plants. It was stored at NCBC Gulfport in preparation for shipment overseas.
- At NCBC Gulfport, the presence of TCDD in a sample is used as an indication that the dioxins could be associated with the former storage of Herbicide Orange.

Where Does Dioxin Come From?

- Dioxins are mainly byproducts of industrial practices such as chlorine bleaching used by pulp and paper mills and the production of some herbicides and certain (chlorinated) organic chemicals. Most of these practices are now either banned or heavily regulated.

- Dioxins are also released with improper incineration processes and by burning fossil fuels by such activities as driving motor vehicles and burning wood fires.

Natural processes such as forest fires and volcanoes can also release dioxins into the environment.

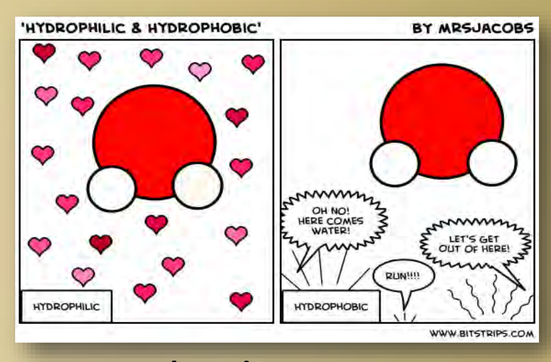
- Strict regulatory controls on major industrial sources have reduced emissions into the air by 90% compared to levels in 1987.

- Dioxins are absorbed and stored in fat tissue, and therefore accumulate in the food chain.
- Today more than 90% of human exposure to dioxin is through food, mainly in foods containing animal fat such is found in meat, fish, and dairy products.

Dioxin

How do Dioxins "Behave" in the Environment?

- Dioxins are "hydrophobic", meaning they do not typically attach to water particles.
- Instead, dioxin tends to attach to organic rich soil, as is often found in ditches and other surface water bodies.



- When dioxin is attached to a soil particle, it can be transported in the environment along with flowing water.
- Most dioxins break down very slowly, and as a result, can remain in the environment for a long time.

What Concentrations of Dioxin in Soil Are Used to Guide Cleanup Decisions?

- Acceptable levels of dioxins are based on human health considerations.
- The amount of time a person might spend in a particular area influences their potential exposure. Because people spend more time where they live than where they work, "action" levels for dioxin are different for residents and industrial workers.

- The Mississippi Department of Environmental Quality (MDEQ) uses 4.26 parts per trillion (ppt) as the action level for dioxins in soils for residential areas and 38 parts per trillion in areas designated as industrial.

What is a "TEQ"?

Dioxin values can be very confusing!

- Reported dioxin values include all forms of dioxins and furans present in the sample.
- However, each form has a different toxicity.

- The reported value takes into account the toxicity of each of the different dioxins present in the sample.
- The toxicity of each dioxin is compared to TCDD, the most toxic form. The value for each dioxin present is called the "TCDD Equivalent."
- The amount of dioxin in a given sample is the reported as the sum of the TCDD concentration plus the TCDD Equivalent. This value is called the Toxicity Equivalent Quotient, or TEQ.

TCDD + TCDD Equivalent = TEQ

- This calculation provides a single value that is easier to use and discuss, yet takes the different toxicities of the various dioxins into consideration.

What is a Part Per Trillion (PPT)?

- Dioxin TEQs are reported in parts per trillion.
- A part per trillion of dioxin represents one "unit" of dioxin in one trillion units of soil.
- To visualize a parts per trillion, imagine one grain (1 unit) of sand in enough sand to cover a football field with 1 ½ feet of sand (1 trillion units).

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Off-Site Haul Road Removal

The Haul Road

- The haul road was constructed in 2006 to provide access for the off-base cleanup of dioxin-contaminated soil and sediment.
- The road was built out of 15-foot long timbers, gravel, and soil. This type of road is called a "corduroy" road.

The project area (shown in orange) was located north of 28th Street and east of Canal Road in Gulfport, Mississippi.

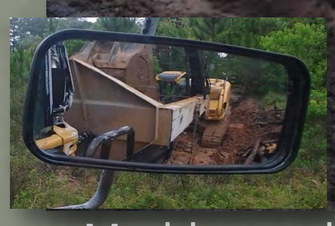
Removing soil from the roadway

Entrance to haul road off of 28th Street

North end of haul road before removal

Final stretch of road being removed

Logs piled for removal and loaded into trucks for disposal.



Muddy conditions made the work challenging

The roadbed after it was grassed, mulched, and then flooded

The area after removal of the haul road

Removal of the road allowed water to flow to the creek

November 2014

Off-Site Haul Road Removal

Haul Road Removal

- Removed a 2,838’ long, 15-20’ wide, 2’ thick corduroy road.
- Removed 709 truck loads of soil and 81 truck loads of logs from the site.
- Placed a new 420’ by 160’ earthen pad in upland adjacent to 28th Street.
- Restored roadbed and the surrounding wetlands.

An earthen pad was constructed at the south end of the project area near 28th Street

Earthen pad area with silt fence

A load of soil on the way to the earthen pad

Logs were cut for transport to a landfill

Water reclaimed the roadbed as it was dismantled

New grass where road was removed.

Logs loaded on trucks for shipment to the City of Gulfport landfill.

Logs were covered with soil at the landfill

Completed earthen pad with erosion control mat, seed, and mulch

Completed roadbed from the earthen pad

A metal gate was installed at 58th Avenue to complete the project

November 2014