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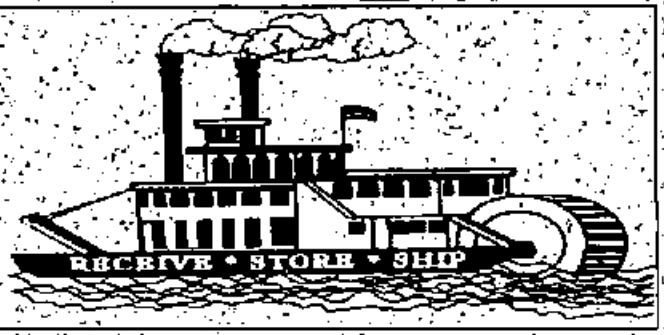
THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 246

The Restoration Newsletter
Defense Depot
Memphis, Tennessee
March-May 1997



The Defense Distribution Depot Memphis distributes this newsletter to inform the public of the ongoing restoration efforts underway at the Depot.

Removal of Stockpiles at Dunn Field

As we explained in our Fall 1996 newsletter, work continues to remove the bauxite and fluorspar piles at Dunn Field that are managed by the Defense National Stockpile Center (DNSC). The DNSC anticipates that further actions to sell and remove the fluorspar and bauxite piles will continue for at least the next year or until all the piles have been removed. Currently, DNSC maintains three piles of bauxite and six piles of fluorspar at the Defense Depot. To date, one fluorspar pile has been removed, and work has begun to remove two other fluorspar piles. With the announced closure of the Depot, efforts are being made to remove all of these piles from Dunn Field.

Bauxite is a naturally-occurring material primarily composed of aluminum hydroxide minerals and various mixtures of aluminum silicates (clay, etc.). The bauxite derivative is the primary feedstock for the aluminum metal industry. Metallurgical bauxite is primarily used in the manufacture of aluminum. The refractory bauxite is primarily used by the steel industry in metal and in the glass industry to make furnace liners. The bauxite piles at the Depot are uncovered and are a reddish-pink color. There is no known health or environmental hazard associated with the bauxite storage piles.

The fluorspar stockpiled at the Depot is from the processing of the naturally-occurring mineral fluorite. Natural fluorite primarily contains calcium and fluoride. The fluorspar at Dunn Field is a grayish material that has been partially processed from the natural fluorite. This material is very fine-grained and a cover is required to prevent erosion of the material by both rain and wind. There is no known health threat associated with this material.

The Depot appreciates your patience during this removal process. We are taking appropriate actions to control the dust caused during the removal process by the heavy equipment. The Depot and DNSC will ensure that the stockpile material and roads are dampened with water and that trucks travel slowly in order to reduce the amount of dust.

New Cleanup Projects at DDMT

The Defense Depot has completed several projects that will move the installation farther along the road to cleanup, reuse, and transfer.

The first project consisted of Remedial Investigation, Screening Site, and Base Realignment and Closure (BRAC) sampling fieldwork. The project began in October of 1996 as the Depot's installation restoration contractor, CH2M Hill, sampled areas identified in the following documents:

- Generic Remedial Investigation/Feasibility Study Workplan dated August 1995
- Operable Unit Field Sampling Plans dated September 1995
- Screening Site Field Sampling Plan dated September 1995
- Environmental Baseline Survey dated November 1996

These areas were selected for sampling based on historical storage, maintenance, and spill records, former and present employee interviews, and visual inspections. Some of these areas were identified during the 1980s as part of the Depot's Installation Restoration Program, and some areas were identified during fieldwork conducted as part of the Environmental Baseline Survey.

The results of these samples will enable the BRAC Cleanup Team (BCT) to determine if an area is clean, an area requires cleanup, or if additional sampling is required in order to make a cleanup decision. The final

results from this sampling effort will be discussed with the Depot's Restoration Advisory Board and should be available for public review in the Depot's three information repositories this summer.

Another project completed by the Depot resulted from the Lead Based Paint Risk Assessment dated December 1995 (as revised April 1996) of the Family Housing Units. The assessment identified peeling lead based paint at the garages and soil from the backyard of one unit that had lead levels slightly above Environmental Protection Agency's (EPA) action level for soils.

The BCT decided to deal with the lead based paint hazard at the housing units by removing all peeling paint, replacing the rotten wood and repainting the garages. The BCT also decided to follow the assessment's recommendation for the soil by removing the soil and replacing it with clean soil. About 1 1/4 cubic yards of dirt was removed and replaced. The removed soil was disposed of in accordance with EPA regulations.

The other project consisted of removing asbestos containing material (ACM) from a condemned building, Building 702 (the former Hobby Shop), in preparation for demolition. According to EPA regulations, ACM must be removed prior to demolition. The removed ACM included transite wallboard and boiler insulation. All the removed ACM was disposed of in accordance with EPA regulations. With these first few steps, the Depot will learn more about the environmental condition of the installation and will move closer to the ultimate cleanup of the installation for reuse and, ultimately, transfer.

Dunn Field Groundwater Remediation Groundwater Modeling

The Dunn Field portion of the Defense Distribution Depot Memphis, Tennessee, has been used in the past for the burial of stock items such as expired food stocks, chemicals, construction debris, and clothing from the Defense Depot. The Fluvial Aquifer (shallow aquifer) under Dunn Field has become contaminated primarily with the solvent Trichloroethene (TCE).

Very little TCE will dissolve into water. For example, the largest concentration we have found at Dunn Field, 1.1 parts per million in water is equal to about a couple of drops (0.0077 ounces) in a bathtub full of water (approximately 55 gallons). Since so little of the TCE dissolves in water, cleaning up small amounts of it requires the pumping of hundreds of millions of gallons of groundwater. Since so much water has to be pumped to recover small amounts of contamination, remediation takes a long time and a lot of water must be treated. Because of this, groundwater remediation in our nation has been very expensive.

Due to the very small amount of TCE actually in the water under Dunn Field and the large expense of pumping and treating the groundwater, we need to optimize the pump and treat system to recover the most highly contaminated portion of the plume. This can be accomplished by placing wells into or by the areas of the highest concentration and pumping groundwater at the flow rates that will capture the most TCE.

The main tool used to optimize a pump and treat system is groundwater modeling. Monitoring wells are installed to provide the data that is used to help form the model. The data collected includes information such as the amount of clay, silt, or sand in the soil and the speed at which groundwater flows. Modeling takes this data and predicts the best places to drill wells, the ideal number of wells, and the best pumping rates at which to operate the wells. Groundwater models are modified as more information from additional activities, such as well installation and water sampling, becomes available.

A groundwater model has been established by the U.S. Army Engineer Waterways Experiment Station for Dunn Field. This model for Dunn Field will be used in the development of our upcoming Interim Remedial Action (IRA). The IRA is being designed to create a barrier to keep the contamination from moving away from Dunn Field, as well as recover as much TCE as possible. It is planned to initially drill seven wells along the western and northern edges of Dunn Field where the model has indicated the most TCE will be recovered. We will use the data collected during the drilling and pumping of these seven wells in the model to calculate further recovery well locations.

Our groundwater model will continue to give us better information as we drill the recovery wells and pump water from those wells. By modeling our Dunn Field site, we expect to shorten the time it takes to fully remediate the site by many years.

CLEAN-UP PROGRAM HISTORY

Installation Restoration Program	**1981**	
Installation Assessment		March
Geohydrologic Evaluation	1982	July
Environmental Audit	1985	July
Summary Report for PCP Vat Removal Action	1986	February
Water Quality Biological Study		March
Groundwater Consultation		December
Fieldwork for initial Remedial Investigation	1988	April
RCRA Facility Assessment	1990	January
Remedial Investigation Report (initial)		August
Feasibility Study (initial)		September
EPA assigns a Hazard Ranking Score to DDMT	1991	August
Federal Facility Agreement negotiations start	1992	May
Groundwater pump test at Dunn Field for remedial design conducted		September
CERCLA PROGRAM	**1992**	
DDMT placed on National Priorities List		October
Sampled all monitoring wells	1993	November
Non-Stockpile Chemical Warfare Materiels Program Survey and Analysis Report		November
Groundwater Sampling Report	1994	January
Technical Review Committee meets for first time		February
High Resolution Seismic Survey of Dunn Field		June
Technical Review Committee converts to Restoration Advisory Board		July
Ordnance and Explosive Waste Chemical Warfare Materiels Archives Search Report	1995	January
Federal Facility Agreement		March
BRAC PROGRAM	**1995**	
DDMT approved for closure in accordance with BRAC Act		July
RI/FS Workplans approved		September
Background and Sediment Sampling fieldwork done		October
Public Health Assessment Report released		November
BRAC Clean-up Team formed		December
Additional monitoring wells installed and sampled	1996	February
EPA concurrence with groundwater Interim Remedial Action Record of Decision		May
Final Environmental Assessment for Master Interim Lease		September
Fieldwork for BRAC parcel sampling		October
BRAC Cleanup Plan		November
Environmental Baseline Survey		November
Fieldwork for screening site sampling		December
Fieldwork for RI site sampling	1997	January
EPA concurred with CERFA Category 1 properties (except Building 995)		March

Information Repositories

Information has been placed in the following repositories for public review:

Memphis/Shelby County Library
Main Branch, Gov't and Law Section
1850 Peabody
Memphis, TN 38104-4025

Cherokee Branch Public Library
3300 Sharp Avenue
Memphis, TN 38111-3758

Memphis/Shelby County Health Dept
Pollution Control Division
814 Jefferson Avenue
Memphis, TN 38106

The documents are also available for your review in the Environmental Office. Please feel free to call at (901) 775-4568 and schedule a time.

Restoration Advisory Board

The Restoration Advisory Board (RAB) meets on the third Thursday of each month to act as an advisory board during the environmental cleanup process. The group has reviewed technical data and work plans for proposed environmental activities at the Depot to ensure public involvement in this process.

The next RAB meeting is scheduled for June 19 at 6:00 p.m. in the Commander's Conference Room at the Depot. RAB meetings are open to the public.

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