



Frontier Fertilizer Superfund Site



U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • February 2013

Cleanup Action Update Bulletin Number 5

Introduction

The United States Environmental Protection Agency (EPA) completed the Electrical Resistive Heating (Heating System) designed to treat the source of the pesticide-contaminated soils and groundwater at the Frontier Fertilizer Superfund Site (Site) in Davis, CA (Figure 1). The purpose of this fact sheet is to update you on the Heating System and the other cleanup related activities.

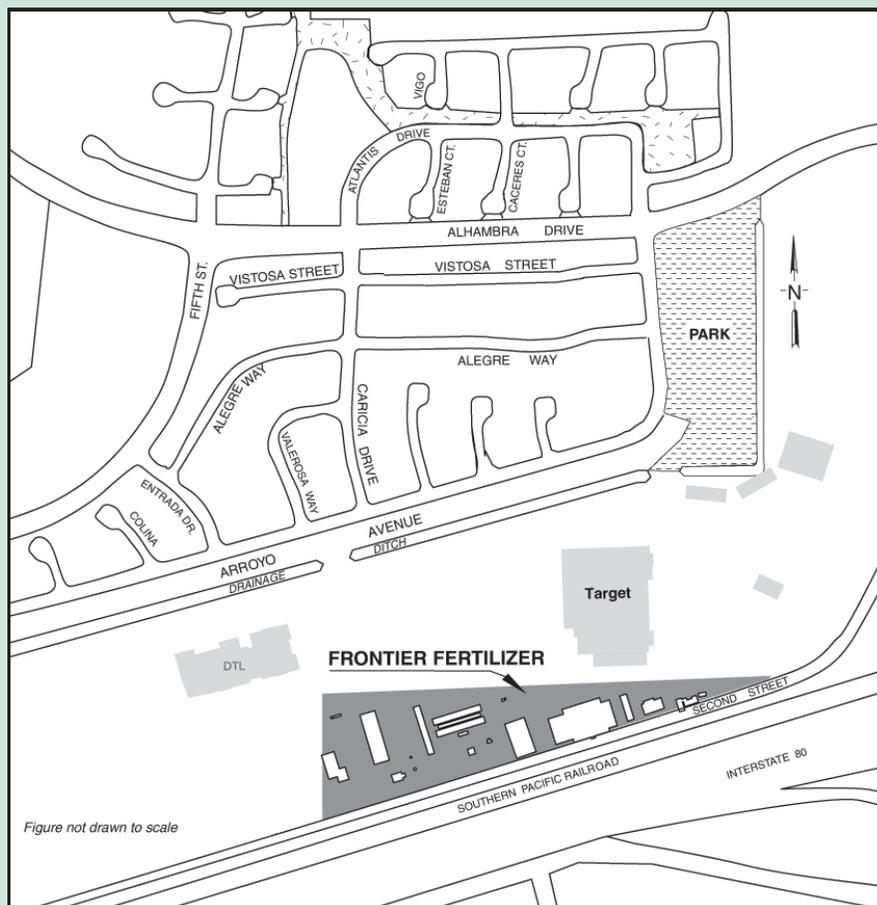


Figure not drawn to scale

Figure 1: Frontier Fertilizer Superfund Site Location

Site Background

In February 2011, EPA started the Heating System to accelerate removal of Site contaminants in the source area, which is where the past operators of the Site disposed of unused pesticides and fertilizers in an unlined basin. Site contaminants of concern (COCs) include pesticides [e.g., 1,2-dibromoethane (EDB), 1,2-dibromo-3-chloropropane (DBCP), 1,2-dichloropropane (DCP) and 1,2,3-trichloropropane (TCP)] and carbon tetrachloride, a chlorinated solvent.

The long-term groundwater pump and treatment system has operated since 1995. After the contaminated groundwater is extracted from up to 16 locations, it is pumped through large carbon filter vessels where contaminants are removed. The treated water from this process meets Federal and state primary drinking water standards for Site contaminants and is currently piped, under permit, to the City of Davis Wastewater Treatment Plant. This groundwater treatment will continue until cleanup goals are reached.

Heating System Complete

EPA shut down the Heating System in October 2012 after 19 months of operation. The Heating System moved electrical current through 236 subsurface electrodes installed in the ground. Resistance to electrical current flow between electrodes increased soil and groundwater temperatures (i.e., electrical energy is converted to heat) to the boiling point of water (100 degrees Celsius). Extraction wells located in and around the heated area collected gas and liquids mobilized by the Heating System. Granular activated carbon removed contaminants from the extracted gas and liquids. The effectiveness of the remedy will be assessed after the soils cool off and the heating area can be sampled. Preliminary estimates, based on the operations data, indicate that the heating system effectively removed COC mass from the disposal basin area (Figure 2). EPA purchased Renewable Energy Certificates to offset the electrical energy usage for the Heating System as well as other nationwide projects. These certificates represent the environmental benefits associated with generating electricity from wind farms in the Upper Midwest.

Cleanup Related Activities

EPA completed the Five-Year Review (FYR) in September 2012. The purpose of the FYR was to review Site information to determine if the remedy is and will continue to be protective of human health and the environment. As part of the extensive data review and the Site inspection, EPA determined that the groundwater remedy is generally protective and is functioning as intended by EPA's 2006 Record of Decision. In 2013, EPA will institute optimization measures that will enhance the present groundwater extraction and treat system. As part of the FYR, EPA interviewed representatives from the Frontier Fertilizer Superfund Oversight Group (FFSOG), the State of California (Regional Water Quality Control Board and the Department of Toxic Substances Control), Congressman Mike Thompson's office, Davis City Councilman Stephan Souza, and Yolo County Supervisor Jim Provenza. The FYR is available on EPA's website and a copy is in the information repositories (See Page 3).

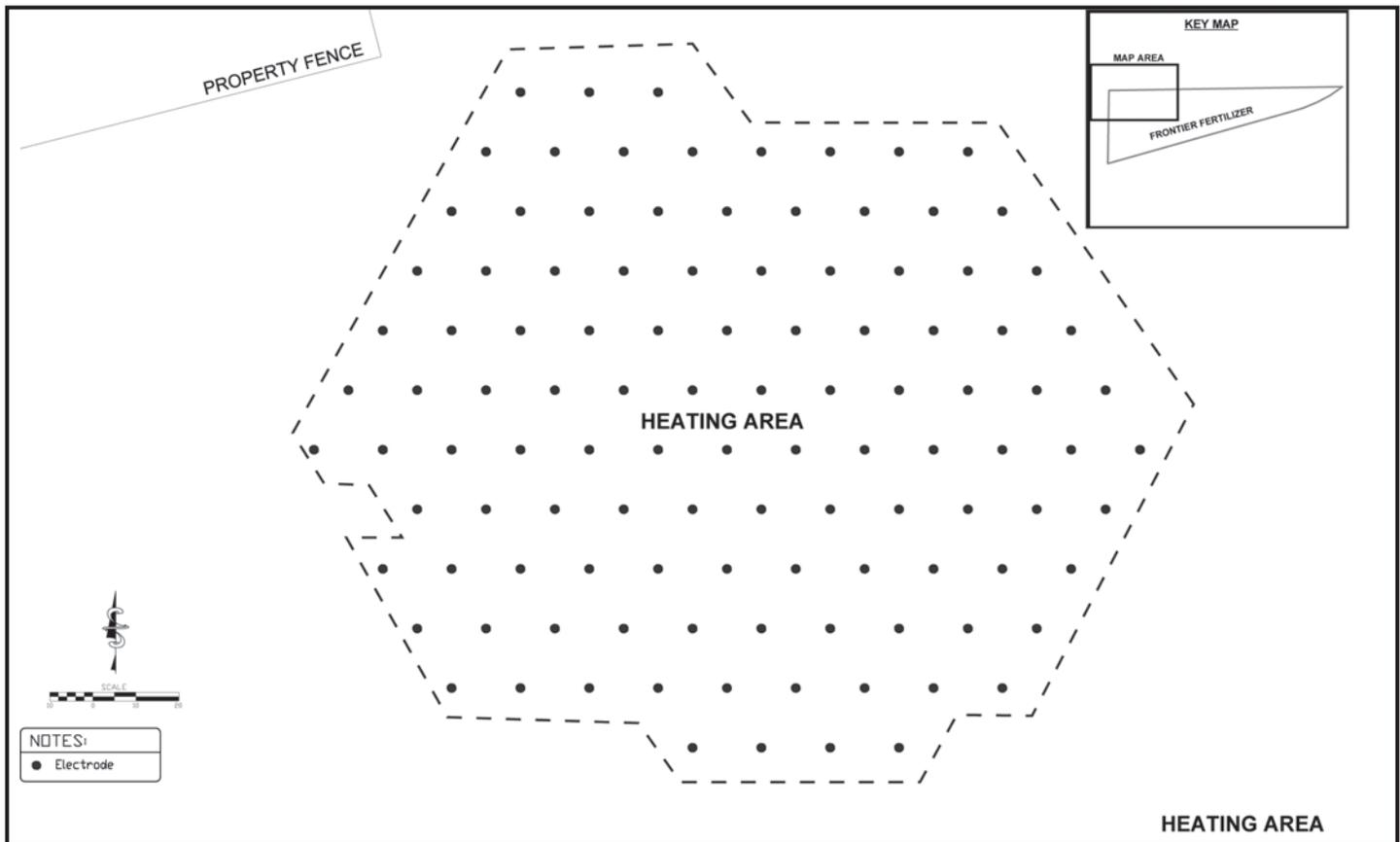


Figure 2: Heating System at Frontier Fertilizer

Target, Inc. Agreement Update

As part of an administrative agreement with EPA, Target, Inc. (Target), agreed to conduct sub-floor vapor sampling to determine if there are risks to workers and/or shoppers from the contaminants found at the Frontier Fertilizer Site. Target's building specifications also included passive venting through a sub-slab system. The mitigation system is designed to prevent volatile chemicals, if present, from entering the building.

Target's contractors completed three representative sampling events from July 2011 to October 2012. Samples were collected from a monitoring port under the building. EPA and the FFSOG reviewed Target's plan prior to sampling. Only trace levels (less than one part per billion) of TCP, carbon tetrachloride, and DCP have been detected below the building. All recent sample results (two sample events in 2012) are below the human health screening levels and EPA believes there is no added risk to workers and/or shoppers due to the detections of chemicals in the sub-slab venting system. Three more sampling events are scheduled within the next year and EPA will update you regarding these sampling results in future bulletins.

Updated Activity Schedule

The following community involvement activities are planned or on-going:

- Continued monthly conference calls between the Frontier Fertilizer Superfund Oversight Group (FFSOG), State of California and EPA
- Continued groundwater extraction and treatment
- Update bulletins: Bi-annually
- Community meetings/Open houses: Annual; or as needed.

Technical Assistance Grant (TAG)

EPA believes it is important for community members to provide input on the cleanup of Superfund sites. One of EPA's tools is to give an eligible group a grant to hire an independent technical advisor to help them interpret and comment on EPA's site decision documents. The Frontier Fertilizer Superfund Oversight Group has been the recipient of the TAG for this Site since 1995. The group and its technical advisor work closely with EPA and State regulators to make sure that community concerns are incorporated into the cleanup decision-making process. The primary point of contact for the TAG is Pamela Nieberg who can be reached at (530) 756-6856. If you would like to receive updates from the TAG recipient, send an email to: pnieberg@dcn.org.

EPA Contact Information

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EPA 24-Hour

Emergency Line

800-700-2193



Site Information Repositories and On-Line Web Page

The information repositories below house Site documents available for public review, including the recent Five-Year Review. EPA Site Overview web page is at <http://www.epa.gov/region09/frontierfertilizer/>

Yolo County Library – Stephen Davis Branch

315 East 14th Street

Davis, CA 95616

(530) 757-5593



Shields Library

Government Documents Departments,

University of California

Davis, CA 95616

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