

Bandera Road Ground Water Plume BEXAR COUNTY LEON VALLEY, TEXAS



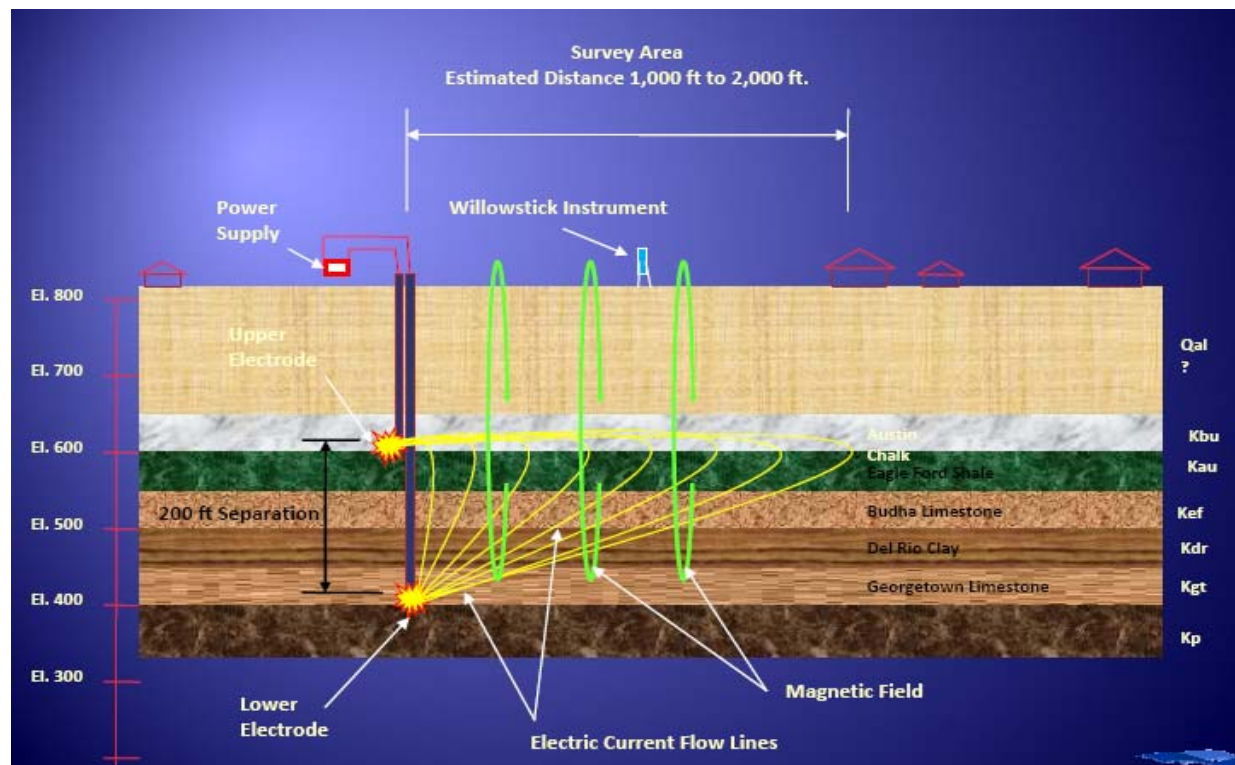
EPA REGION 6
CONGRESSIONAL DISTRICT 20

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Updated: July 2010

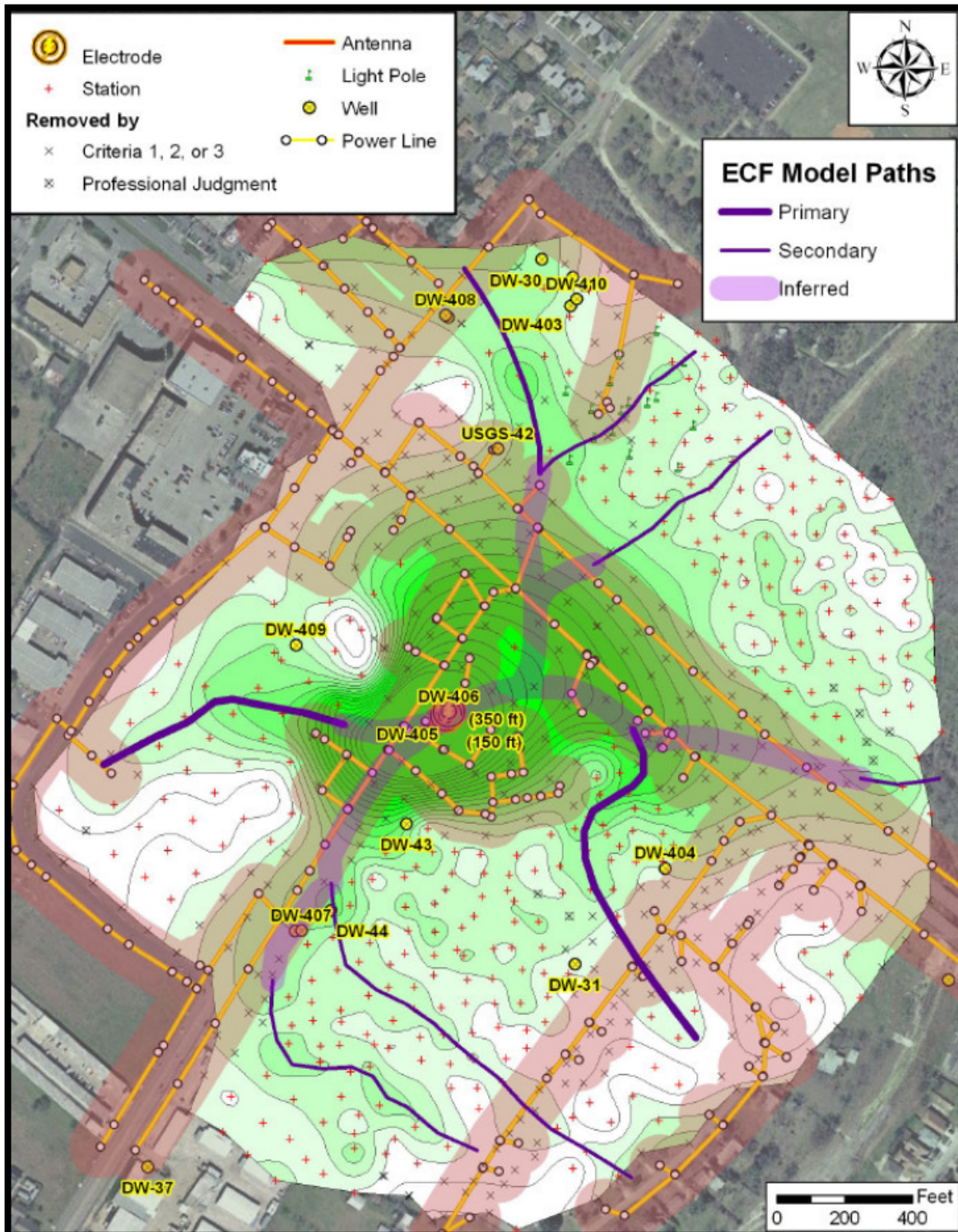
EPA ID# TXN000606565
Site ID: 0606565

The U.S. Environmental Protection Agency (EPA) conducted an investigation to identify, map and model pathways of preferential ground water flow in the Austin Chalk formation. Previous ground water investigations identified chlorinated solvents exceeding ground water standards in the Austin Chalk formation which extends to a depth of approximately 175 feet below ground surface in the area. The top of the Edwards Aquifer formation is present around 300 feet below ground surface. The study area was centered near the intersection of Bandera Road and Grissom Roads and included an area of approximately 162 acres. A pair of electrodes were placed in an Austin Chalk well and in a nearby Edwards Aquifer well. The electrodes were connected to a low-amperage alternating current power supply so that an electric circuit was created in the subsurface between the two electrodes (see figure below). There were no harmful effects to the environment or to the public as a result of the investigation.



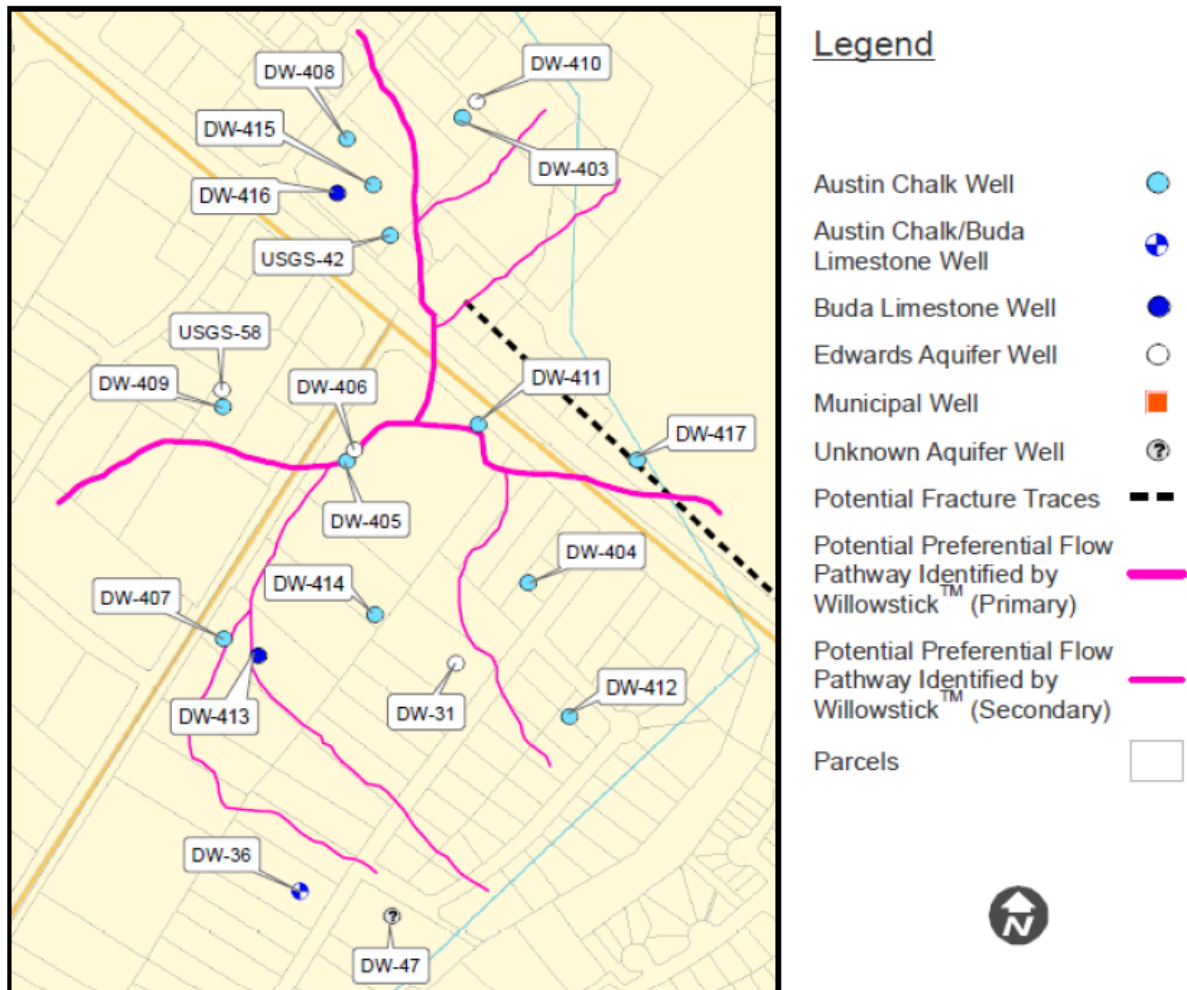
As the electric current flowed through the subsurface, it gathered in conductive features and generated a

magnetic field. Groundwater is normally the most conductive feature in the subsurface. The magnetic field strength, magnitude and direction were measured at the ground surface with a specialized instrument. The figure below presents the Electrical Current Flow (ECF) model developed. The primary, secondary and inferred model paths represent predicted areas with preferential ground water flow.



Using the results of the Willowstick investigation, the EPA had installed five additional Austin Chalk monitoring wells and two Buda Limestone wells (designated DW-411 – DW-417)(See figure below). These new wells will

help in further assess the extent of contamination and will also be incorporated into a dye tracer study which began in July 2010. The dye tracer study is scheduled to be completed in September.



The EPA is working in consultation with the Edwards Aquifer Authority in conducting the dye tracer study. The dye tracer study involves injecting a nontoxic, fluorescence dye into the Austin Chalk formation. All dyes used are approved by the Food and Drug Administration and are used as colorants in medical procedures, drugs, and/or cosmetics. Calculations were completed to determine the volume of the dye to be used in the tracer tests such that the dyes will not be visible at public water supply wells. The objective of the tracer test is to determine groundwater flow patterns in the area and determine groundwater velocities.

To ensure public safety, the Leon Valley municipal water supply wells have been sampled by the EPA on a monthly basis since September 2008. The most current sample results are from the June 2010 sampling event. The most recent sampling took place on the week of July 12, 2010. The results from this sampling will be available by mid-August. The next water sampling event is planned for the week of August 9, 2010.

EPA Enforcement Activities:

- CERCLA 104(e) information request letters were sent to gather information regarding potential contaminant sources.
- Continue efforts to identify source(s) of contamination.
- Field Consent Order issued to owner of former dry cleaner to address vapor intrusion.

Benefits

The purpose of EPA's remedial investigation is to identify the nature and extent of ground water contamination and potential vapor intrusion exposure pathways. This information will be used in developing remediation strategies to address potential risks posed by the impacted soils and ground water.

National Priorities Listing (NPL) History

NPL Inclusion Proposal Date: September 26, 2006
NPL Inclusion Final Date: March 7, 2007

Site Description

The Bandera Road Groundwater Plume site is situated in Bexar County, in the City of Leon Valley, in the northwestern section of the City of San Antonio, Texas. The current estimated site area is approximately one mile long by one-half mile wide. The site is centered in a business area, with some homes nearby, between Poss Road and Grissom Road, southwest of Bandera Road. Ongoing sampling and investigation may affect the estimated plume extent.

The site consists of a groundwater plume contaminated with PCE, trichloroethene (TCE), and cis-1,2-Dichloroethene (cis-1,2-DCE). The site was identified through assessment activities conducted by the TCEQ Voluntary Cleanup Program. The investigation identified the presence of PCE and/or TCE concentrations above the Federal Drinking Water Standard of 5.0 parts per billion (ppb). Two City of Leon Valley public water supply wells are within one mile of the center of the contamination plume. These two public water supply wells are being sampled by EPA on a monthly basis to ensure public safety.

Wastes and Volumes

The site is being evaluated as a groundwater plume containing PCE, TCE and cis-1,2-dichloroethene (cis-1,2-DCE). To date, ten wells were found to be contaminated with PCE and/or TCE at or above the 5.0 parts per billion. Three of these wells were Edwards Aquifer wells which have been plugged and abandoned. An additional well which was located at an automotive repair facility was also plugged and abandoned. The remaining six wells are completed in formations above the Edwards Aquifer.

The most impacted well is an Austin Chalk monitoring well located by a former dry cleaning facility in which PCE concentrations as high as 11,700 ppb have been detected.

Health Considerations

Human exposure to contaminated ground water is currently prevented by providing access to a public water supply for residences whose wells were found to be contaminated with PCE/TCE above the Federal drinking water standards. Water well sampling is continuing to ensure additional wells are not being impacted. As discussed previously, vapor mitigation efforts are being taken to address vapor intrusion in the area around a former dry cleaning facility.

Record of Decision (ROD)

A Record of Decision will be issued following completion of the Remedial Investigation/Feasibility Study. There will be an opportunity for the community and interested parties to review the data and comment on the preferred remedy identified by the EPA.

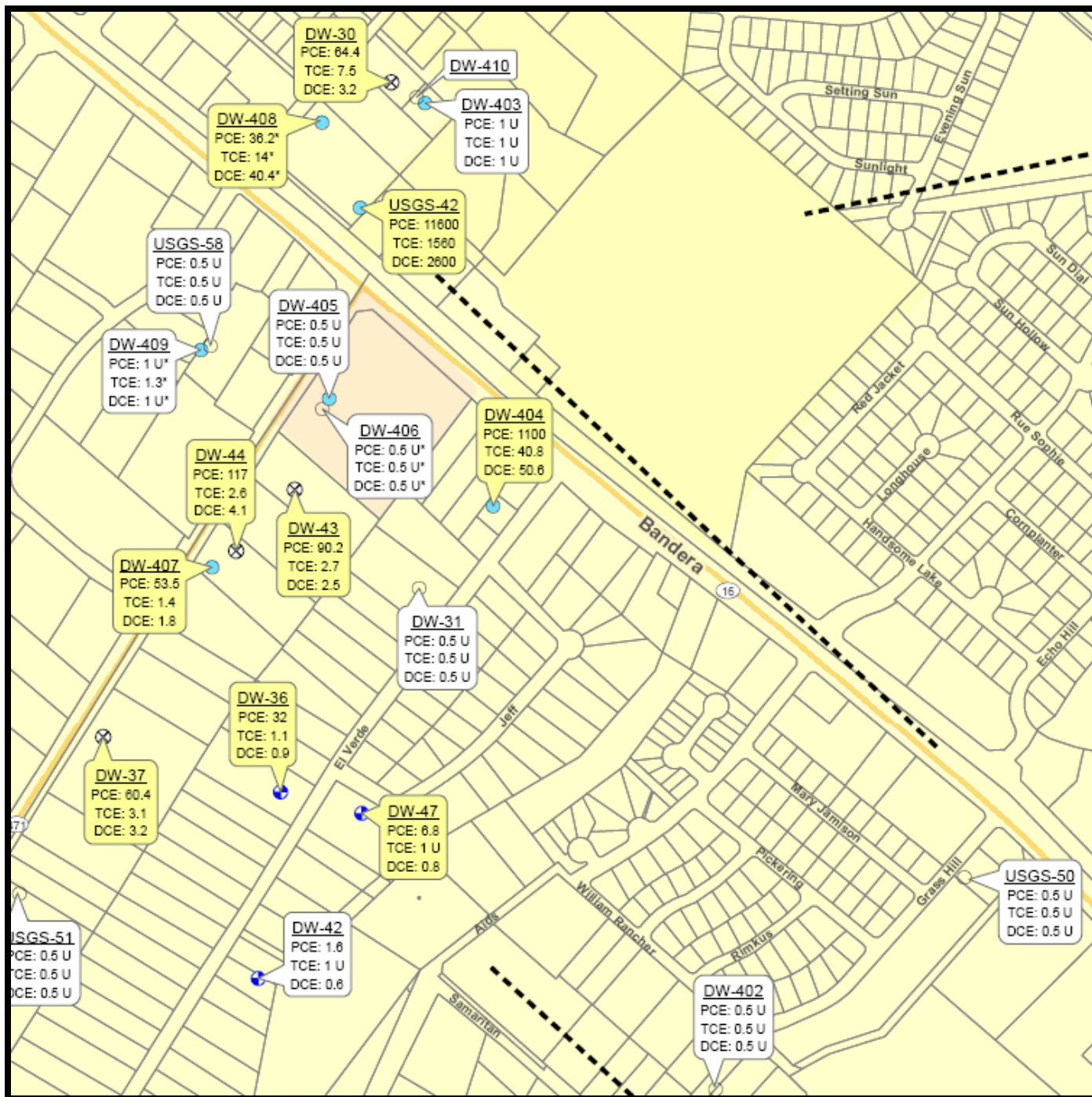
Site Contacts

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EPA Superfund Region 6 Toll-Free Number: 1-800-533-3508

Site Figure

Figure 1 shows the maximum PCE/TCE/Cis-1,2-Dichloroethene detections in ground water for 2009.



Legend

Austin	
Edwards	
Austin/Buda	
Wells Plugged and Abandoned in April 2009	
Potential Fracture Traces	
Parcels	

Notes:

- 1) All concentrations shown in micrograms per liter ($\mu\text{g/L}$)
- 2) * Denotes preliminary data
- 3) Shaded cells denote maximum contaminant level exceedences

Acronyms:

PCE - Tetrachloroethene
TCE - Trichloroethene
DCE - cis-1,2-Dichloroethene

