



Fast Track Remedial Investigation

NAS CECIL FIELD



Within a year of Naval Air Station Cecil Field closing, a major groundwater plume was discovered within the area of the flight line, an important area for property transfer. The groundwater plume was discovered and reported to the Base Closure Team (BCT) at the August 1998 monthly meeting. The presence of the groundwater contamination caused significant concerns because property without a covenant deferral request requires the remediation system to be successfully demonstrated. The flight line parcel was scheduled for transfer in September of 1999, at the time of Base closure. The goal of the BCT was to have a Remedial Investigation Report within 6 months.

Project Summary

Within several weeks of the site discovery, SOUTHDIV began conducting the RI investigation. A screening effort using direct push techniques (DPT) was planned to quickly define the plume and optimize the location of permanent monitoring wells. The BCT decided that the two sites would be investigated together.

A conceptual work plan was formulated and provided to the BCT at the October monthly meeting. All of the DPT locations were shown using GIS so that any adjustments to sampling locations could be made during the presentation. The BCT gave TtNUS approval to proceed Based on the presentation of the conceptual work plan. TtNUS then submitted a formal work plan on October 26, 1998 and initiated fieldwork on November 2, 1998.

To expedite field decisions, arrangements were made with the laboratory to have a person on site at all times who had on-line access to all laboratory data. This allowed the field crew to review data within 48 hours to select new DPT points Based on investigation results. At the same time, data was received in the TtNUS office and was immediately input into the Geographic Information System (GIS) so that maps could be prepared to keep the BCT informed of the investigation results.

The DPT investigation was designed to install a set number of points in a grid pattern at four depths within the aquifer. Originally, 184 temporary monitoring well points were proposed for the investigation. This included 4 samples per each interval (i.e., 15 feet, 35 feet, 60 feet, and 85 feet below ground surface). Eventually, a total of 242 temporary monitoring points were installed to define the extent of contamination within the aquifer.

After the groundwater plumes were defined Based on the DPT investigation, the BCT was provided all of the analytical results and sampling locations using GIS. A GIS presentation for the proposed location of the permanent monitoring wells was provided to the BCT. Additionally, the proposed locations for the soil sampling were presented to the BCT. Both sampling schemes were approved during the presentations.

All fieldwork for the investigation was completed on January 31, 1999 and the RI report was issued to the BCT on April 30, 1999 (approximately six months after submittal of the work plan for the field investigation). The Feasibility Study Report was issued on June 28, 1999.

Based on the current understanding of the contamination at Site 36 and Site 37, the proposed remedial solution will include soil and groundwater remediation.

Site/Location:	Site 36 – Control Tower TCE Plume Site 37 – Hangars 13 and 14 DCE Plume Naval Air Station Cecil Field
Site Description:	Site 36 and Site 37 are side by side and located on the north sided of the East-West Runway. The sites cover an area of approximately 130 acres and are entirely with in the flight line. The Site 36 plume is approximately 2300 feet long and 400 feet wide. Site 37 consist of two plumes, one is approximately 1200 feet wide and 600 feet long. The second plume is downgradient and is 1600 feet long and 300 feet wide.
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Technology:	Direct Push Technology Rotasonic Drilling, GIS
Contaminant:	TCE, DCE, Benzene, Ethylbenzene, Toluene, and Xylene
Action Levels:	Florida Administrative Code 62-777 and Federal Maximum Contaminant Level.
Legal Driver:	Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
Decision Document:	Remedial Investigation Report/Feasibility Study Report/ Proposed Plan/Record of Decision

Soil contaminated with petroleum type contamination will be remediated (excavation and disposal since it was a small quantity). It is also anticipated that the groundwater contamination will be remediated by air sparging or enhanced bioremediation in areas of higher contamination followed by monitored natural attenuation.

Regulatory Requirements/Community Involvement

The work is being conducted in accordance with CERCLA requirements. Action levels have been set to meet the Florida Administrative Code 62-777 and Federal Maximum Contaminant Levels.

Regulators which are members of the BCT represent the community. RAB meetings are also held routinely.

Construction Challenges

Deeper depths could not be reached consistently using Geoprobe techniques because of dense sands. Therefore, the drilling technique was switched to Rotosonic methods for the deeper locations. This technique proved to be significantly more cost effective than other techniques.

Cost Avoidance Measures

- Minimal work plan revisions/versions.
- Online access to all laboratory data and use of a GIS allowed real time field decisions, thereby reducing the number of field days/mobilizations.
- Temporary monitoring points were used to optimize permanent monitoring well locations.

Project Successes

The expedited fashion of the field investigation for Sites 36 and 37 demonstrated the effectiveness of partnering with all stakeholders. Early in the project, a conceptual strategy session was developed by the BCT. After which, TtNUS developed the conceptual strategy into a work plan for the project. The key to the quick approval of the work plan was that all team members contributed to the conceptual strategy. After the work plan presentation was approved, the contractor was entrusted by the BCT to implement work as discussed during the BCT meeting. The work plan was intended to be a “living document” in that changes would be made in the field Based on real time analytical results. Periodically, the BCT received up-dates concerning the status and a presentation of the results. The result of partnering and good communication with all team members was the generation of the RI Report within six months.

Lesson Learned

Two lessons that were clearly determined to be advantageous in conducting a relatively large field investigation in a short time frame were the use of GIS as a information tool and having on-line access to laboratory results.

Using GIS to present work plans and sampling strategies to the BCT allowed for team concurrence in a very streamlined fashion. A relatively large amount of data can be presented in graphs and figures to allow easy digestion of the data in very short time frame. Using this procedure, comments can be addressed in a real time manner by changing sampling locations during the BCT meeting. Sampling locations can be added or deleted Based on review of data during the BCT Meeting. Using GIS, isoconcentration contours can easily be overlaid with sampling locations during the meeting to determine the efficacy of the sampling scheme.

Additionally, having on-line access to the laboratory results within 48 hours allowed the field crew to make decisions in a relatively quick manner. This enabled the field operations leader to keep three drill rigs productive during the DPT investigation.



Figure 1: Site map.



Figure 2: Historic site map.



Figure 3: Sites 36 and 37 plumes.

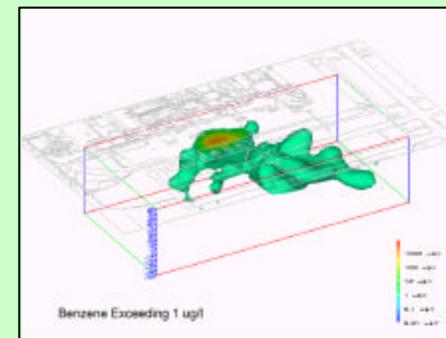


Figure 4: 3-D view of benzene plume.

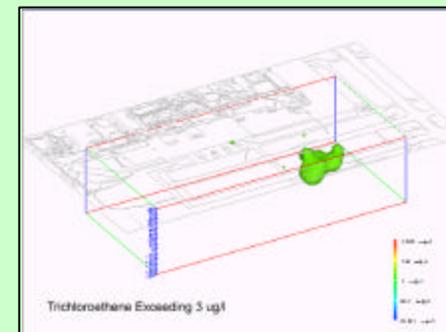


Figure 5: 3-D view of trichloroethene plume.