



Carswell/Plant 4

SUMMARY REPORT SOUTHERN LOBE TRICHLOROETHENE GROUNDWATER PLUME DELINEATION

Restoration Advisory Board Executive Summary #18 • August 10, 2000

INTRODUCTION

Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB), formerly Carswell Air Force Base (AFB), is in the process of planning a Focused Feasibility Study (FFS) to evaluate possible land use scenarios or transfer of the property along White Settlement Road and the Golf Course area. The FFS is being conducted through the combined efforts of the Air Force Center for Environmental Excellence (AFCEE), the Air Force Base Conversion Agency (AFBCA), and Aeronautical Systems Center (ASC).

BACKGROUND

The Final Summary Report provides all existing sampling and analytical data that delineates the nature and extent of the southern lobe of the basewide trichloroethene (TCE) groundwater plume at NAS Fort Worth JRB, Texas (Figure 1). The field investigation was initiated to further delineate the TCE plume along the boundary of Department of Defense (DoD) property to support an ongoing data gap investigation, risk assessment, and an FFS that will address property transfer along the DoD property boundary.

OBJECTIVES

The purpose of the field work was to collect groundwater data needed to delineate the nature and extent of volatile organic compound (VOC) contamination in the southern lobe portion of the basewide TCE plume. If necessary, as a possible interim remedial action (IRA), the existing groundwater treatment system used to treat TCE contaminated groundwater could be expanded to prevent the plume from migrating beyond the former Carswell AFB boundary at

concentrations greater than applicable or relevant and appropriate requirements (ARAR). In this case, the maximum contaminant level (MCL) of 5 micrograms per liter ($\mu\text{g/L}$) is the limit for contaminated groundwater leaving the property boundary.

FIELD INVESTIGATIONS

As part of the groundwater investigation at NAS Fort Worth JRB, nine wells were installed in June and August of 1999 around the Wherry Housing and Carswell Golf Course area. Three rounds of groundwater samples were collected from these wells to delineate the southeastern extent of the TCE plume and to determine if the recovery wells installed should be connected to the extraction system. The data collected from previous investigations and interpretations of the site's geology are presented in this report.

CONCLUSIONS AND FURTHER WORK

Groundwater samples from two of the nine newly-installed wells contained TCE concentrations above the Risk Reduction Standards (RRS)/MCL concentration of 5 $\mu\text{g/L}$ and ranged from 6 $\mu\text{g/L}$ in WHGLTA025 to 42 $\mu\text{g/L}$ in WHGLRW015. The new monitoring wells and sampling data provide delineation of the TCE plume with the exception of the area east of WHGLRW015 for which concentrations of 42 $\mu\text{g/L}$, 34 $\mu\text{g/L}$, and 24 $\mu\text{g/L}$ were detected in July, September, and November, respectively. The most recent April data showed TCE concentrations of 22 $\mu\text{g/L}$ in WHGLRW015 and 14 $\mu\text{g/L}$ in WHGLTA025 (Figure 1). Additional wells will be installed as part of a data gap investigation to be conducted in the Fall of 2000. The new wells will not be

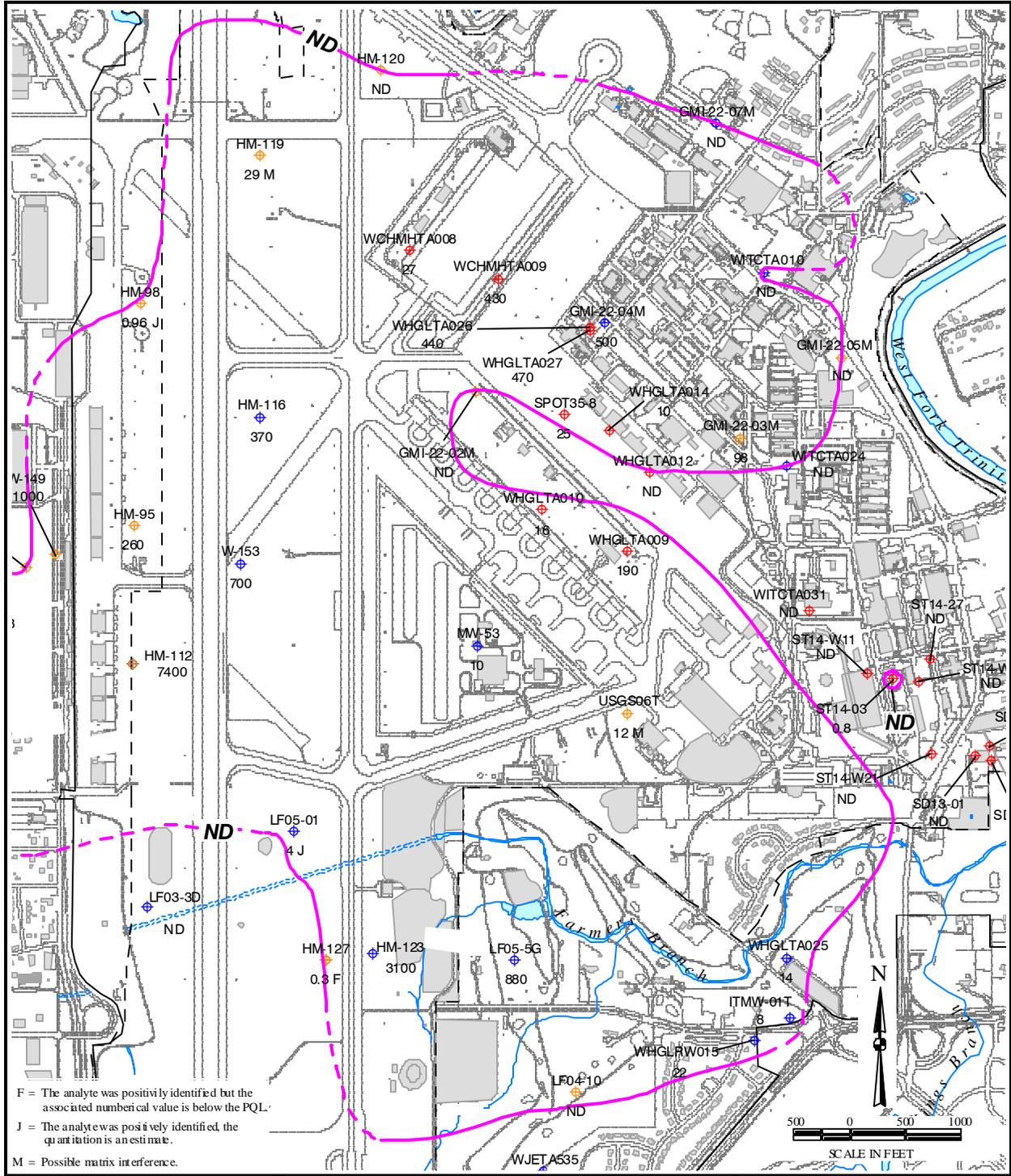
connected to the existing groundwater treatment system since the groundwater concentrations do not appear to warrant this type of remedial action.

The southern lobe of the regional TCE plume has been defined and bounded by a series of sentinel monitoring wells. The TCE plume appears to have migrated onto a narrow strip of private property near the intersections of White Settlement Road, Roaring Springs Road, and Route 183. At this location, the TCE plume is diverted north toward the base entrance by an apparent hydrogeologic divide between Farmers Branch Creek and Kings Branch Creek. Monitoring and recovery wells have been strategically located to monitor this plume.

A combination of factors influence the migration directions of the southern section of the southern lobe of the regional TCE plume. These factors are bedrock elevations and groundwater flow directions which produce preferred migration pathways in bedrock channels.

For More Information:

If you would like more information, please see our website at <http://www.afcee.brooks.af.mil/er/carswell/nasfw/> or contact George Walters, the Aeronautical Systems Center, Wright-Patterson Air Force Base, OH, at 1-800-982-7248 Ext. 416 or via e-mail at George.Walters@wpafb.af.mil.



F = The analyte was positively identified but the associated numerical value is below the PQL.
 J = The analyte was positively identified, the quantitation is an estimate.
 M = Possible matrix interference.

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 tce_04_00(fig1).apr
 Project: AFC001-33GA
 Created: 07/19/00 apa:sarelli
 Revised:
 Source: HydroGeoLogic, Inc. GIS Database,
 Jacobs Engineering



Legend

- NAS Fort Worth JRB (Carswell Field)
- Former Carswell Air Force Base
- ND --- TCE Concentration Contour (µg/L)
 Not Detected at Laboratory
 Method Detection Limit of 0.5 µg/L
- WHGLTA001 81 Monitoring well data collected as part of other investigations during March and April 2000. TCE Concentration (µg/L)
- MW-53 89 NAS Fort Worth JRB Basewide Sampling Well TCE Concentration (µg/L)
- HM-119 30 AFP 4 Semi-Annual Monitoring Well TCE Concentration (µg/L)

Figure 1
Trichloroethene
Concentrations
Terrace Alluvium
April 2000