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DRAFT FINAL
BASEWIDE GROUNDWATER SAMPLING AND ANALYSIS PROGRAM
JULY 2000 QUARTERLY REPORT
NAS FORT WORTH JRB, TEXAS

Prepared for
U.S. Air Force Center for Environmental Excellence
Brooks AFB, Texas

Contract Number F41624-95-D-8005

October 2000

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FEDERAL EXPRESS

October 12, 2000

Mr. Don Ficklen
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3207 North Road
Brooks AFB, Texas 78235-5363

Re: Draft Final Basewide Groundwater Sampling and Analysis Program
July 2000 Quarterly Report
NAS Fort Worth JRB, Texas
F41624-95-D-8005-0033

Dear Mr. Ficklen

HydroGeoLogic, Inc. is pleased to submit the Draft Final version of the Basewide Groundwater Sampling and Analysis Program Quarterly Monitoring Report for the July 2000 sampling event at NAS Fort Worth JRB, Texas. This report presents a description and results of all monitoring activities conducted during the July 2000 groundwater sampling event and changes to the sampling scheme for the October 2000 sampling event.

Please call me at (512) 336-1170 x29 should you have any questions or comments concerning this document.

Sincerely,

Todd Harrah
Project Manager

Enclosure
cc: Mr. Michael Dodyk
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DRAFT FINAL
BASEWIDE GROUNDWATER SAMPLING AND ANALYSIS PROGRAM
JULY 2000 QUARTERLY REPORT
NAS FORT WORTH JRB, TEXAS

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October 2000

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13. ABSTRACT (Maximum 200 words)

This document presents the Draft Final Basewide Groundwater Sampling and Analysis Program Quarterly Monitoring Report for the July 2000 quarterly monitoring event conducted at Naval Air Station Fort Worth JRB (NAS Fort Worth JRB) Carswell Field, Texas.

The objectives of the basewide quarterly monitoring program are to 1) identify potential impacts to off-site receptors through perimeter monitoring, 2) delineate the contaminant source and the dissolved and non-aqueous phase plumes, and 3) collect data to demonstrate whether natural attenuation of trichloroethene (TCE) is occurring. This report summarizes the results of field screening and analytical results of samples collected during the July 2000 quarterly event and provides recommendations for adjustments to the basewide program.

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PREFACE

This Groundwater Sampling and Analysis Program July 2000 Quarterly Groundwater Monitoring Report was prepared for the Air Force Center for Environmental Excellence (AFCEE) to describe the basewide quarterly groundwater monitoring event conducted at Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB), Texas during July 2000. The work has been conducted under Contract Number F41624-95-D-8005, Delivery Order 0033, issued to HydroGeoLogic, Inc. (HydroGeoLogic). The AFCEE Contracting Officer's Representative is Mr. Don Ficklen. HydroGeoLogic's Project Manager is Mr. Todd Harrah.

Activities described by the July Quarterly Groundwater Monitoring Report were performed in accordance with HydroGeoLogic's Final 2000 Basewide Groundwater Sampling and Analysis Plan (GSAP) (HydroGeoLogic, 2000a), the Final Basewide Quality Assurance Project Plan (QAPP) (HydroGeoLogic, 2000b), and AFCEE-approved modifications.

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TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1-1
1.1	MONITORING OBJECTIVES	1-1
1.2	GSAP APPROACH	1-3
1.3	THE U.S. AIR FORCE INSTALLATION RESTORATION PROGRAM	1-3
1 4	SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN	1-4
1.5	REPORT ORGANIZATION	1-5
2.0	SITE DESCRIPTION	2-1
2.1	PHYSIOGRAPHY	2-1
2.2	REGIONAL GEOLOGY	2-1
2.3	GROUNDWATER	2-1
2.3.1	Terrace Alluvium Deposits	2-7
2.3.2	Goodland/Walnut Aquitard	2-9
2.3.3	Paluxy Aquifer	2-9
2.3.4	Glen Rose Aquitard	2-9
2.3.5	Twin Mountains Aquifer	2-10
2.4	SURFACE WATER	2-10
2.5	CLIMATE	2-11
3.0	MONITORING ACTIVITIES	3-1
3.1	MONITORING WELL INSPECTION/MAINTENANCE	3-1
3.2	WATER LEVEL MEASUREMENTS	3-1
3.3	MONITORING WELL/CHEMICAL ANALYSIS SELECTION	3-3
3.3.1	Critical Groundwater Exposure Pathways	3-3
3.3.2	Additional Source and Plume Delineation	3-5
3.3.3	Current Regulatory Requirements	3-5
3.4	MONITORING WELL PURGING AND ANALYTICAL SAMPLING	3-5
3.4.1	Purging Procedures	3-5
3.4.2	Sampling Procedures	3-6
3.5	INVESTIGATION-DERIVED WASTE MANAGEMENT	3-6
3.6	LABORATORY AND FIELD ANALYSIS	3-6
4.0	QUALITY ASSURANCE/QUALITY CONTROL PROGRAM	4-1
4.1	FIELD QUALITY CONTROL	4-1
4.1.1	Ambient Blanks	4-1
4.1.2	Equipment Blanks	4-1
4.1.3	Trip Blanks	4-2
4.1.4	Field Duplicates	4-3
4.2	SAMPLE TRACKING PROTOCOL	4-3
4.3	LABORATORY QUALITY CONTROL	4-4

TABLE OF CONTENTS (continued)

Page

4.4 QUALITY CONTROL ELEMENTS 4-5
4.4.1 Precision 4-5
4.4.2 Accuracy 4-5
4.4.3 Representativeness 4-5
4.4 4 Completeness 4-6
4.4 5 Comparability 4-6
4.5 DATA QUALITY EVALUATION 4-9
4.5.1 Volatile Organic Compounds 4-10
4.5.2 Metals 4-10

5.0 FIELD AND ANALYTICAL RESULTS 5-1
5.1 FIELD RESULTS 5-1
5.1.1 Monitoring Well Inspections 5-1
5.1.2 Groundwater Elevations 5-1
5.2 CONTAMINANT EVALUATION 5-13
5.2 1 Background Concentrations 5-13
5.2.2 Detection and Quantitation Limits 5-13
5.2.3 Risk Reduction Standard 2 5-15
5.3 ANALYTICAL RESULTS 5-15
5.3.1 Volatile Organic Compounds 5-15
5.3.2 Metals 5-23
5.3.3 Other Groundwater Investigations 5-23

6 0 CONCLUSIONS AND RECOMMENDATIONS 6-1
6.1 CHANGES IN MONITORING WELLS SELECTED FOR ANALYTICAL SAMPLING 6-1

7.0 REFERENCES 7-1

TABLE OF CONTENTS (continued)

APPENDICES

Appendix A
- Appendix A.1 Monitoring Well Information
- Appendix A.2 Field Notes
- Appendix A.3 Groundwater Field Sampling Data Sheets
- Appendix A.4 Field Sampling Reports
- Appendix A.5 Chains of Custody

Appendix B July 2000 Analytical Results
- Appendix B.1 TCE Plume Monitoring Well Laboratory Results
- Appendix B.2 Detected Volatile Organic Compound Results From Landfill 7 Groundwater Investigation

LIST OF FIGURES

		Page
Figure 1.1	Site Location Map	1-2
Figure 1.2	SWMU/AOC Location Map	1-9
Figure 2.1	NAS Fort Worth JRB Regional Topographic Map	2-2
Figure 2.2	Cross Section Location A-A'-A"	2-3
Figure 2.3	Generalized Geologic Cross Section A-A'-A"	2-4
Figure 2.4	Areal Distribution of Geologic Units	2-5
Figure 2.5	Stratigraphic Column Correlating Hydrogeologic Units and Geologic Units	2-6
Figure 3.1	Summary of Analytical Sampling July 2000	3-2
Figure 5.1	Water Level Elevations, Terrace Alluvium—July 2000	5-12
Figure 5.2	Tetrachloroethene Concentrations, Terrace Alluvium—July 2000	5-19
Figure 5.3	Trichloroethene Concentrations, Terrace Alluvium—July 2000	5-21
Figure 5.4	*cis*-1,2-Dichloroethene Concentrations, Terrace Alluvium—July 2000	5-22

LIST OF TABLES

		Page
Table 1.1	Solid Waste Management Units at NAS Fort Worth JRB, Texas	1-6
Table 1.2	Areas of Concern at NAS Fort Worth JRB, Texas	1-8
Table 2.1	Stratigraphic Units at NAS Fort Worth JRB, Texas	2-8
Table 3.1	TCE Plume Monitoring Wells Selected for July 2000 Basewide Sampling	3-4
Table 4.1	Field Quality Control Samples Collected for July 2000 Basewide Sampling	4-2
Table 4.2	Data Qualifiers	4-7
Table 4.3	Data Quality Evaluation and Result Rejection Summary	4-8
Table 5.1	Groundwater Elevations for July 2000	5-2
Table 5.2	Monitoring Wells Not Gauged in July 2000	5-11
Table 5.3	Background and Risk Reduction Standard 2 Values for Inorganic Constituents in Groundwater	5-14
Table 5.4	Risk Reduction Standard 2 Values for Volatile Organic Compounds in Groundwater	5-16
Table 5.5	Detections of Volatile Organic Compounds Above Practical Quantitation Limit in TCE Plume Monitoring Wells Sampled	5-17
Table 5.6	Detections of Metals Above Background Concentrations in TCE Plume Monitoring Wells Sampled	5-23
Table 6.1	TCE Plume Monitoring Wells Selected for October 2000 Basewide Sampling	6-2
Table 6.2	Monitoring Wells Selected for Current Regulatory Requirements for October 2000 Basewide Sampling	6-3

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFP 4	Air Force Plant No. 4
AOC	Area of Concern
ASTM	American Society for Testing and Materials
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	*cis*-1,2-dichloroethene
cm/s	centimeters per second
COC	chain of custody
%D	percent difference
DO	dissolved oxygen
DQE	data quality evaluation
EC	electrical conductance
EDD	electronic data deliverable
Eh	oxidation-reduction potential
EPA	U.S. Environmental Protection Agency
ERA	Environmental Restoration Account
ERPIMS	Environmental Resources Program Information Management System
ESE	Environmental Science and Engineering, Inc.
F	data qualifier indicating analyte was detected at a concentration less than PQL but greater than MDL. Value may not be accurate or precise (estimated)
°F	degrees Fahrenheit
ft	feet
ft/d	feet per day
gpd/ft	gallons per day per foot
gpd/ft^2	gallons per day per square foot
GSAP	Groundwater Sampling and Analysis Plan
HydroGeoLogic	HydroGeoLogic, Inc.
IDW	investigative-derived waste
IRP	Installation Restoration Program
Jacobs	Jacobs Engineering
LCS	laboratory control sample

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

LNAPL	light non-aqueous phase liquid
µg/L	micrograms per liter
mg/L	milligrams per liter
MDL	method detection limit
MOU	Memorandum of Understanding
MQL	method quantitation limit
MSC	medium specific concentration
msl	mean sea level
MS/MSD	matrix spike/matrix spike duplicate
MTBE	methyl-*tert*-butyl ether
mya	million years ago
NAS Fort Worth JRB	Naval Air Station Fort Worth Joint Reserve Base
NFA	no further action
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
OPR	office of primary responsibility
Parsons	Parsons Engineering Science, Inc.
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PE	performance evaluation
PID	photoionization detector
POL	petroleum, oil, and lubricant
PQL	practical quantitation limit
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
%R	percent recovery
Radian	Radian Corporation
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RRS	Risk Reduction Standard
SWMU	solid waste management unit
TAC	Texas Administrative Code
TCE	trichloroethene
TI	tolerance interval
TNRCC	Texas Natural Resource Conservation Commission
trans-1,2-DCE	*trans*-1,2-dichloroethene

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

TWC	Texas Water Commission
U	data qualifier indicating analyte was not detected at the specified quantitation limit
UJ	data qualifier indicating analyte was not detected and the specified quantitation limit is estimated
USGS	U.S. Geological Survey
UTL	upper tolerance limit
VOC	volatile organic compound
WAA	waste accumulation area

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TAB

SECTION L.O.

DRAFT FINAL
BASEWIDE GROUNDWATER SAMPLING AND ANALYSIS PROGRAM
JULY 2000 QUARTERLY REPORT
NAS FORT WORTH JRB, TEXAS

1.0 INTRODUCTION

Groundwater monitoring at Naval Air Station Fort Worth Joint Reserve Base, Texas (NAS Fort Worth JRB) (Figure 1.1), has been performed to provide a basis for development and implementation of remedial actions under the Air Force Installation Restoration Program (IRP). This report summarizes the second of three scheduled quarterly sampling events for 2000, performed in July 2000, in accordance with the Final 2000 Basewide Groundwater Sampling and Analysis Plan (GSAP) (HydroGeoLogic, Inc. [HydroGeoLogic], 2000a) and the Final 2000 Basewide Quality Assurance Project Plan (QAPP) (HydroGeoLogic, 2000b). Sampling was not conducted in January 2000 due to delays in contracting. No sampling was required by regulatory actions during that quarter. Quarterly groundwater sampling events are conducted to monitor the presence and extent of groundwater contamination and potential surface water contamination.

1.1 MONITORING OBJECTIVES

A basewide groundwater sampling and analysis program was initiated for NAS Fort Worth JRB in April 1995 to address groundwater contamination associated with various Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) identified on the base. Eighteen rounds of quarterly sampling have been implemented to date: April 1995, July 1995, October 1995, January 1996, January 1997, April 1997, July 1997, October 1997, January 1998, April 1998, July 1998, October 1998, January 1999, April 1999, July 1999, October 1999, April 2000, and July 2000. The monitoring objectives for the 2000 program were established to ensure that adequate data are collected for the evaluation of the critical exposure pathways involving groundwater. The objectives also address the monitoring requirements for units which have proposed closure plans, approved remedial plans, or approved closure plans.

The 2000 GSAP monitoring objectives, listed below, are based on the findings of previous investigations, and a current understanding of the remediation/assessment plans anticipated in the coming year. These objectives may require modification to accommodate new data resulting from ongoing and future investigations/remedial actions at NAS Fort Worth JRB. If necessary, the GSAP will be amended to reflect modifications to these objectives.

- Critical Groundwater Exposure Pathways Evaluation - collect data to investigate: (1) potential exposure to groundwater sources used for drinking water; and (2) on-site and off-site exposure to surface water bodies;

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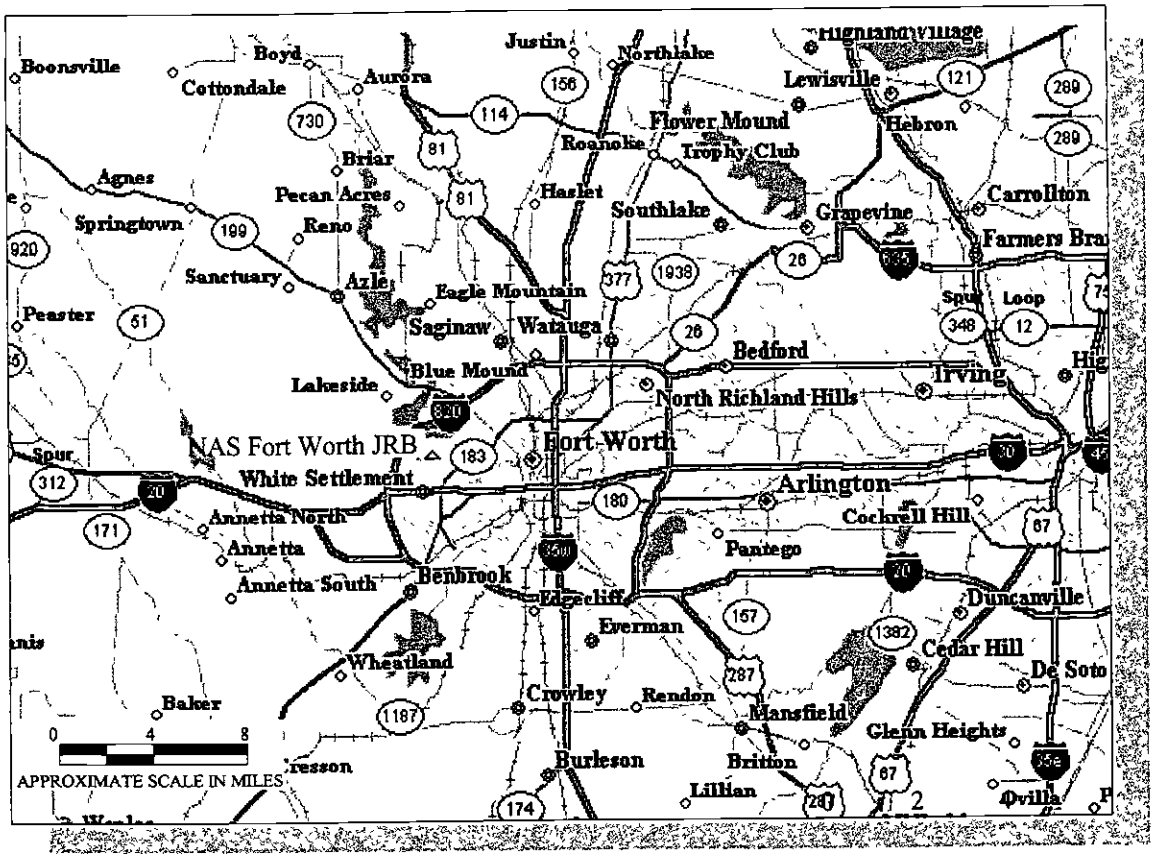

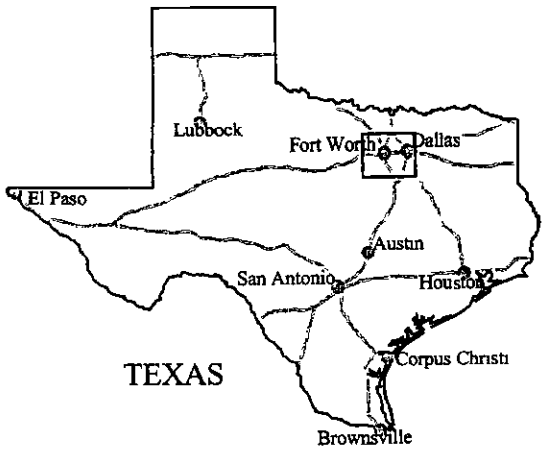

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Figure 1.1

Site Location Map
NAS Fort Worth JRB, Texas

- Additional Source and Plume Delineation - define horizontal or vertical migration of contamination associated with miscellaneous hot spots and potential source areas where data are not currently available; and

- Natural Attenuation Monitoring - collect data to evaluate the extent that natural attenuation of trichloroethene (TCE) is occurring.

1.2 GSAP APPROACH

This GSAP has been developed to provide a framework to achieve the objectives described above and describes, in detail, the approach for the current program. This document includes the approach to the following components:

- Collection of water level measurements
- Removal of light non-aqueous phase liquids (LNAPL), if necessary
- Collection and analysis of groundwater quality samples
- Methods for water quality analyses
- Monitoring well inspection and maintenance
- Procedures for management and transfer oOf data

This framework includes sampling of existing monitoring wells, recommendations for sampling of monitoring wells recently proposed for installation, and recommendations for chemical parameters to be included in the sampling program. The framework is based on a current understanding of the restoration plans for SWMUs and AOCs. Details for subsequent monitoring rounds will be developed based on results of the previous quarter and the overall remediation strategy for NAS Fort Worth JRB.

1.3 THE U.S. AIR FORCE INSTALLATION RESTORATION PROGRAM

The objective of the U.S. Air Force IRP is to assess past hazardous waste disposal and spill sites at U.S. Air Force installations and to develop remedial actions consistent with the National Contingency Plan for sites that pose a threat to human health and welfare or the environment.

Environmental contamination was identified at U.S. Air Force Plant No. 4 (AFP 4) through site investigations conducted during the 1980s. As a result, AFP 4 was placed on the National Priorities List (NPL) in August 1990. A Federal Facilities Agreement was entered into between the Texas Natural Resource Conservation Commission (TNRCC), EPA Region VI, and the U.S. Air Force. Remediation and monitoring information can be located in the following documents: Environmental Science and Engineering, Inc. (ESE), 1994; HydroGeoLogic, 1997; Parsons Engineering Science, Inc. (Parsons), 1997; Jacobs Engineering Group Inc. (Jacobs), 1998; and HydroGeoLogic 2000c.

Although the Air Force developed the IRP in response to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), NAS Fort Worth JRB is not listed on the NPL and as such is not subject to corrective action under CERCLA. The primary regulatory programs that govern the investigation and potential closure of NAS Fort Worth JRB sites are the Resource Conservation and Recovery Act (RCRA) and the TNRCC Risk Reduction Standards (RRS) Program. The TNRCC is the lead regulatory agency for activities to be conducted at the subject sites.

On February 7, 1991 the former Carswell Air Force Base (AFB) was issued a RCRA hazardous waste permit (HW-50289) by the TNRCC. This permit requires a RCRA facility investigation of all SWMUs listed in Permit Provision VIII (as well as those SWMUs subsequently added to the list) in order to determine whether hazardous constituents listed in 40 Code of Federal Regulations Part 264, Appendix IX, have been released into the environment.

A Memorandum of Understanding (MOU) was signed by the acting Secretaries of the Air Force and Navy on June 8 and 9, 1993. The MOU outlined the general terms under which the Air Force would transfer responsibility for portions of the former Carswell AFB to the Navy. The MOU established a final target date of September 20, 1994 for the transfer of host responsibilities from the Air Force to the Navy. On September 23, 1994, the Navy and Air Force executed another MOU to amend the previous MOU. The Navy assumed "host responsibilities" for NAS Fort Worth JRB, on October 1, 1994, but did not assume several key environmental program responsibilities.

In a letter dated February 26, 1996, the Air Force Deputy Assistant Secretary interpreted and amended the original MOU. This amendment confirmed the Air Force's acceptance of funding and management responsibilities for the final remediation of all environmental restoration requirements attributable to Carswell AFB operations that occurred prior to October 1, 1994. In a MOU dated June 19, 1996, the parties reached agreement regarding the cleanup of NAS Fort Worth JRB. The June 19, 1996 Cleanup MOU will control in the event that it conflicts on cleanup issues with this Compliance MOU (Air Force, 1997).

The primary emphasis of all site investigations is to meet the requirements of Permit Provision VIII of the NAS Fort Worth HW-50289 permit. However, as the IRP, TNRCC RRS, and RCRA rely heavily on guidance documents prepared under CERCLA, this GSAP has been prepared using guidance documents from all four programs.

1.4 SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

Since 1942, most hazardous waste generated through operations and activities at the base has been disposed of in landfills, reused on base, or processed through the Defense Property Disposal Office for off-base recycling or disposal. Since 1984, many of these sites (which include landfills, fire training areas, oil/water separators, and evidence of spills at waste accumulation areas) have been investigated. A total of 68 SWMUs have been identified at the base. Many were addressed as part of a RCRA Facility Assessment (RFA) conducted for what was then Carswell AFB (U.S. Environmental Protection Agency [USEPA], 1989a), with

additional SWMUs added later via letters from the TNRCC. Additionally, 16 AOCs were identified in either Permit HW-50289 for Carswell AFB issued by the TNRCC (formerly Texas Water Commission [TWC]) on February 13, 1991 (TWC, 1991) or by individual letters from the TNRCC. A number of the SWMUs and AOCs identified have been determined to require no further action (NFA) and are currently considered closed by the TNRCC (TNRCC, 1995). All SWMUs and AOCs are listed in Table 1.1 and Table 1.2, respectively, and the locations of the active SWMUs and AOCs are shown on Figure 1.2.

Portions of the facility are subject to Air Force Base Realignment and Closure (BRAC) management, while other portions are managed by Air Force Center for Environmental Excellence (AFCEE) under the Environmental Restoration Account (ERA). These management responsibilities are included on Table 1.1 and Table 1.2.

1.5 REPORT ORGANIZATION

Section 2.0 of this report provides a description of the environmental setting, while Section 3.0 includes a description of the monitoring activities performed during July 2000 as part of the basewide groundwater monitoring program. Section 4.0 of this report presents the quality assurance/quality control (QA/QC) program implemented for the project. Section 5.0 presents the analytical results and results of the activities described in Section 3.0. Section 6.0 provides a summary and interpretation of the quarterly sampling results, while Section 7.0 lists references. Appendix A presents field data, field notes, groundwater field sampling data sheets, field sampling reports, and chains of custody (COCs) for the July 2000 sampling event. Appendix B contains a summary of the analytical data for the July 2000 sampling event.

Table 1.1
Solid Waste Management Units at NAS Fort Worth JRB, Texas

SWMU	Description	OPR
1	Pathological Waste Incinerator (NFA)	BRAC
2	Pathological Waste Storage Shed (NFA)	BRAC
3	Metal Cans (NFA)	BRAC
4	Facility Dumpsters (NFA)	BRAC
5	Building 1627 Waste Accumulation Area for Building 1628	ERA
6	Building 1628 Wash Rack and Drain	ERA
7	Building 1628 Oil/Water Separator (NFA)	ERA
8	Building 1628 Sludge Collection Tank (NFA)	ERA
9	Building 1628 Work Station Waste Accumulation Area (NFA)	ERA
10	Building 1617 Work Station Waste Accumulation Area (NFA)	ERA
11	Building 1618 Waste Accumulation Area for Buildings 1617 and 1619	ERA
12	Building 1602 Former Waste Accumulation Area	ERA
13	Building 1710 Visual Information Center Work Station Former Waste Accumulation Areas (NFA)	ERA
14	Building 1060 Bead Blaster Collection Tray (NFA)	ERA
15	Building 1060 Paint Booth Vault (NFA)	ERA
16	Building 1059 Waste Accumulation Area	ERA
17	Landfill No. 7	ERA
18	Fire Training Area No. 1 (NFA)	BRAC
19	Fire Training Area No. 2	ERA
20	Waste Fuel Storage Tank	ERA
21	Waste Oil Tank	ERA
22	Landfill No. 4	BRAC
23	Landfill No. 5	BRAC
24	Waste Burial Area 7	BRAC
25	Landfill No. 8	BRAC
26	Landfill No. 3	ERA
27	Landfill No. 10 (NFA)	ERA
28	Landfill No. 1	ERA
29	Landfill No. 2	ERA
30	Landfill No. 9	ERA
31	Building 1050 Former Waste Accumulation Area	ERA
32	Building 1415 Waste Accumulation Area for Building 1410	ERA
33	Building 1436 Waste Accumulation Area for Building 1420	ERA
34	Building 1194 Former Waste Accumulation Area	ERA
35	Vehicle Refueling Shop (Building 1194) Oil/Water Separation System	ERA
36	Building 1191 Former Waste Accumulation Area	ERA
37	Vehicle Maintenance Shop (Building 1191) Oil/Water Separation System	ERA
38	Building 1269 PCB Transformers Building (NFA)	ERA
39	Building 1643 Former Waste Accumulation Area	ERA
40	Building 1643 Oil/Water Separation System	ERA

Table 1.1 (continued)
Solid Waste Management Units at NAS Fort Worth JRB, Texas

SWMU	Description	OPR
41	Building 1414 Oil/Water Separation System, Field Maintenance Squadron Aerospace Ground Equipment	ERA
42	Building 1414 Former Waste Accumulation Area	ERA
43	Building 1414 Non Destructive Inspection (NDI) Waste Accumulation Point (NFA)	ERA
44	Building 1027 Oil/Water Separation System at the Aircraft Washing Hangar	ERA
45	Building 1027 Waste Oil Tank Vault at the Aircraft Washing Hangar	ERA
46	Building 1027 Waste Accumulation Area (NFA)	ERA
47	Building 1015 Jet Engine Test Cell Oil/Water Separator	ERA
48	Building 1048 Fuel Systems Shop Floor Drains (NFA)	ERA
49	Aircraft Washing Area No. 1	ERA
50	Aircraft Washing Area No. 2	ERA
51	Central Waste Holding Area/Waste Accumulation Areas 1187 and 1189	ERA
52	Building 1190 Oil/Water Separation System	ERA
53	Storm Water Drainage System	ERA
54	Storm Water Interceptors	ERA
55	East Gate Oil/Water Separator	ERA
56	Building 1405 Waste Accumulation Area (NFA)	ERA
57	Buildings 1432/1434 Waste Accumulation Area (NFA)	ERA
58	Pesticide Rinse Area (NFA)	BRAC
59	Building 8503 Weapons Storage Area Waste Accumulation Area	BRAC
60	Building 8503 Radioactive Waste Burial Site	BRAC
61	Building 1319 Waste Accumulation Area for Building 1320	ERA
62	Landfill No. 6	ERA
63	Entomology Dry Well (NFA)	ERA
64	French Underdrain System	ERA
65	Weapons Storage Area Disposal Site (NFA)	BRAC
66	Sanitary Sewer System	BRAC
67	Building 1340 Oil/Water Separator	ERA
68	POL Tank Farm	ERA

Notes:
BRAC - Base Realignment and Closure
ERA - Environmental Restoration Account
NFA - No further action
OPR - Office of Primary Responsibility
PCB - Polychlorinated biphenyl
POL - Petroleum, oil, and lubricant

Table 1.2
Areas of Concern at NAS Fort Worth JRB, Texas

AOC	Description	OPR
1	Former Base Service Station/ former Base Gas Station	ERA
2	Airfield Groundwater Plume	ERA
3	Waste Oil Dump (NFA)	ERA
4	Fuel Hydrant System	ERA
5	Grounds Maintenance Yard	BRAC
6	Recreational Vehicle Storage Area	ERA
7	Former Base Refueling Area	ERA
8	Aerospace Museum	BRAC
9	Golf Course Maintenance Yard (NFA)	BRAC
10	Building 1064 O/W Separator	ERA
11	Building 1060 O/W Separator	ERA
12	Building 4210 O/W Separator	ERA
13	Building 1145 O/W Separator	ERA
14	Unnamed Stream (NFA)	BRAC
15	Storage Shed Building 1190	ERA
16	Family Camp (NFA)	BRAC
17	Suspected Former Landfill	ERA
18	Suspected Former Fire Training Area A	ERA
19	Suspected Former Fire Training Area B	ERA

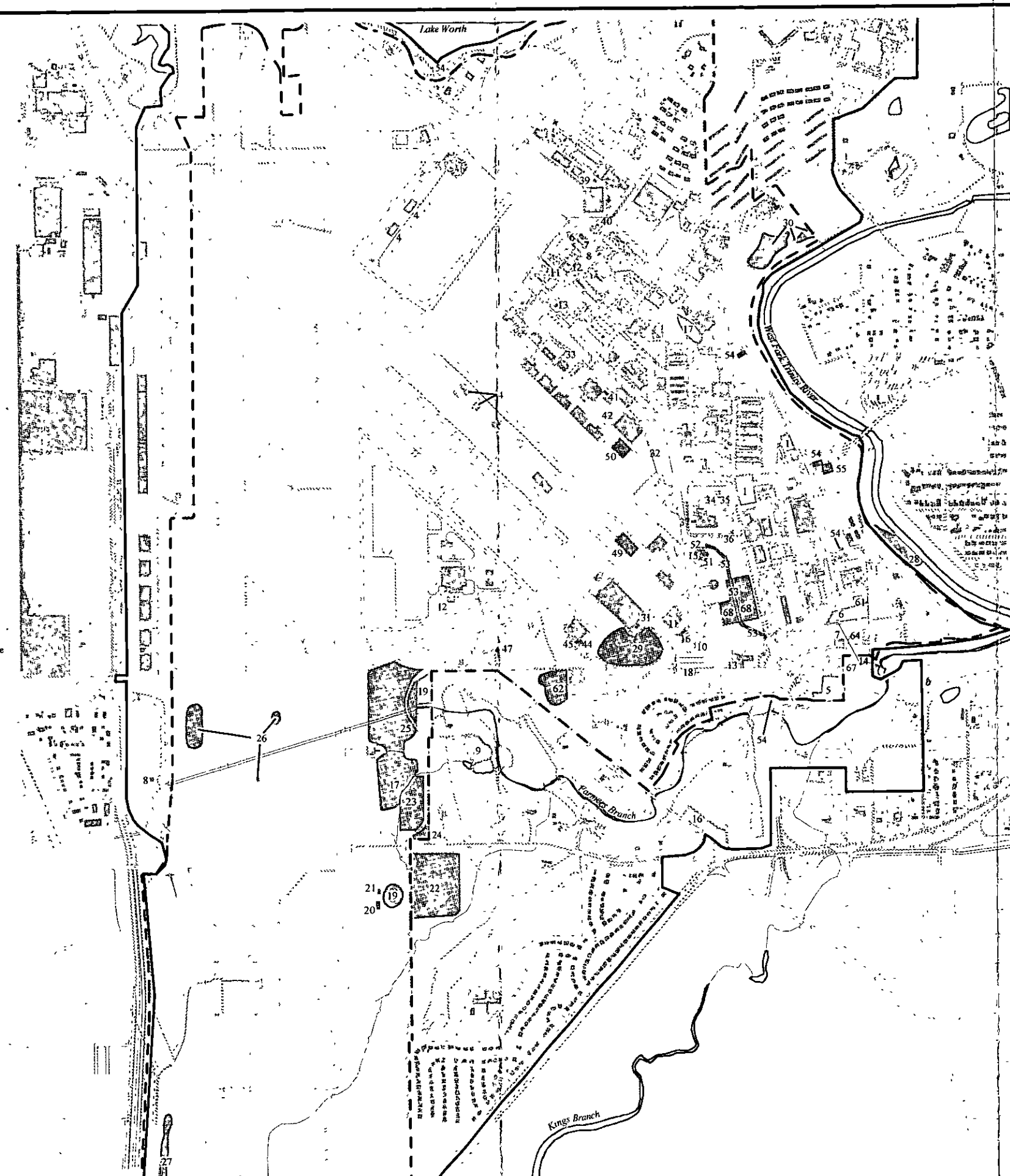
Notes:
BRAC - Base Realignment and Closure
ERA - Environmental Restoration Account
NFA - No further action
OPR - Office of Primary Responsibility
O/W - oil/water

Areas of Concern (AOC)

1 Former Base Service Station/ Former Base Gas Station
2 Airfield Groundwater (Basewide Coverage)
4 Fuel Hydrant System
5 Grounds Maintenance Yard
6 RV Storage Area
7 Former Base Refueling Area
8 Aerospace Museum
9 Golf Course Maintenance Yard
10 O/W Separator
11 O/W Separator
12 O/W Separator
13 O/W Separator
14 Unnamed Stream
15 Storage Shed
16 Family Camp
17 Suspected Former Landfill
18 Suspected Former Fire Training Area A
19 Suspected Former Fire Training Area B

Solid Waste Management Units (SWMU)

5 Building 1626 Waste Accumulation Area
6 Building 1628 Wash Rack and Drain
7 Building 1628 Oil/Water Separator
8 Building 1628 Sludge Collection Tank
11 Building 1617 Waste Accumulation Area
12 Building 1619 Waste Accumulation Area
13 Building 1710 Visual Information Center Work Station Waste Accumulation Areas
16 Building 1060 Waste Accumulation Area
17 Landfill No 7
19 Fire Training Area No 2
20 Waste Fuel Storage Tank
21 Waste Oil Tank
22 Landfill No 4
23 Landfill No 5
24 Waste Burial Area
25 Landfill No 8
26 Landfill No 3
27 Landfill No 10
28 Landfill No 1
29 Landfill No 2
30 Landfill No 9
31 Building 1050 Waste Accumulation Area
32 Building 1410 Waste Accumulation Area
33 Building 1420 Waste Accumulation Area
34 Building 1194 Waste Accumulation Area
35 Vehicle Refueling Shop (Building 1194) Oil/Water Separation System
36 Building 1191 Waste Accumulation Area
37 Vehicle Maintenance Shop (Building 1191) Oil/Water Separation System
39 Building 1643 Waste Accumulation Area
40 Building 1643 Oil/Water Separation System
41 Building 1414 Oil/Water Separation System, Field Maintenance Squadron Aerospace Ground Equipment
42 Building 1414 Waste Accumulation Area
44 Building 1027 Oil/Water Separation System at the Aircraft Washing Hangar
45 Building 1027 Waste Oil Tank Vault at the Aircraft Washing Hangar
47 Building 1015 Jet Engine Test Cell Oil/Water Separator
49 Aircraft Washing Area No 1
50 Aircraft Washing Area No 2
51 Building 1190 Central Waste Holding Area
52 Building 1190 Oil/Water Separation System
53 Storm Water Drainage System
54 Storm Water Interceptors
55 East Gate Oil/Water Separator
61 Building 1320 Power Production Maintenance Facility Waste Accumulation Area
62 Landfill No 6
64 French Underdrain System
66 Sanitary Sewer System (Basewide Coverage)
67 Building 1340 Oil/Water Separator
68 POL Tank Farm



HydroGeoLogic, Inc —July 2000 Quarterly Report
NAS Fort Worth JRB, Texas

Figure 1.2

SWMU/AOC Location Map

U.S. Air Force Center for Environmental Excellence

Legend

- NAS Fort Worth JRB (Carswell Field)
- Property Boundary of Air Force Plant 4
- Former Carswell Air Force Base
- Solid Waste Management Unit (SWMU)
- Area of Concern (AOC)

N

1000 0 1000 2000

SCALE IN FEET

Filename X \AFC001\33DCBA\Report\SWMU_AOC_loc apr
Project AFC001-33DCBA
Revised 10/04/00 jb
Map Source Jacobs, 1996
HydroGeoLogic GIS Database, 2000

HYDRO GeoLogic INC

TAB

SECTION 2.0

2.0 SITE DESCRIPTION

On October 1, 1994, the Air Force transferred the majority of the property that constituted Carswell AFB to the U.S. Navy to become NAS Fort Worth JRB, Carswell Field. NAS Fort Worth JRB is located on 2,264 acres of land in Tarrant County, Texas, 8 miles west of downtown Fort Worth. The base is bordered by Lake Worth to the north; the West Fork Trinity River, River Oaks, and Westworth Village to the east; other urban areas of Fort Worth to the northeast and southeast; White Settlement to the west and southwest; and AFP 4 to the west (Figure 2.1). The area surrounding NAS Fort Worth JRB is mostly suburban. Land use in the immediate vicinity of the base is industrial, commercial, residential, and recreational (A.T. Kearney, 1989).

2.1 PHYSIOGRAPHY

The NAS Fort Worth JRB area is located along the border zone between two physiographic provinces. The southeastern part of the base is situated within the Grand Prairie section of the Central Lowlands Physiographic Province. The Central Lowlands Physiographic Province is characterized by broad, eastward-sloping terrace surfaces that are interrupted by westward-facing escarpments. The land surface is typically grass covered and treeless except for isolated stands of upland timber. The northwestern part of the NAS Fort Worth JRB area is situated within the Western Cross Timbers Physiographic Province, which is characterized by rolling topography and a heavy growth of post and blackjack oaks (Radian Corporation [Radian], 1989). Surface elevations for this region range from about 850 feet above national geodetic vertical datum (NGVD) west of the base, to approximately 550 feet above NGVD, along the eastern side of the base. Figure 2.1 is a portion of the Lake Worth and Benbrook Texas, U.S. Geological Survey (USGS) topographic maps showing the relief of the NAS Fort Worth JRB Area.

2.2 REGIONAL GEOLOGY

The major geologic units of interest for the region, from youngest to oldest, are as follows: (1) the Quaternary Alluvium (including fill material and terrace deposits), (2) the Cretaceous Goodland Limestone, (3) the Cretaceous Walnut Formation, (4) the Cretaceous Paluxy Formation, (5) the Cretaceous Glen Rose Formation, and (6) the Cretaceous Twin Mountains Formation. A generalized cross section of the geology beneath NAS Fort Worth JRB is presented in Figures 2.2 and 2.3 (Radian, 1989). The areal limits of surface exposure of these geologic units at NAS Fort Worth JRB are shown in Figure 2.4. The regional dip of these stratigraphic units beneath NAS Fort Worth JRB is between 35 to 40 feet per mile in an easterly to southeasterly direction. NAS Fort Worth JRB is located on the relatively stable Texas Craton, west of the faults that lie along the Ouachita Structural Belt. No major faults or fracture zones have been mapped near the base.

2.3 GROUNDWATER

The following five hydrogeologic units, listed from the shallowest to the deepest, located in the NAS Fort Worth JRB area include (Figure 2.5): (1) an upper perched-water zone occurring in

647 :32

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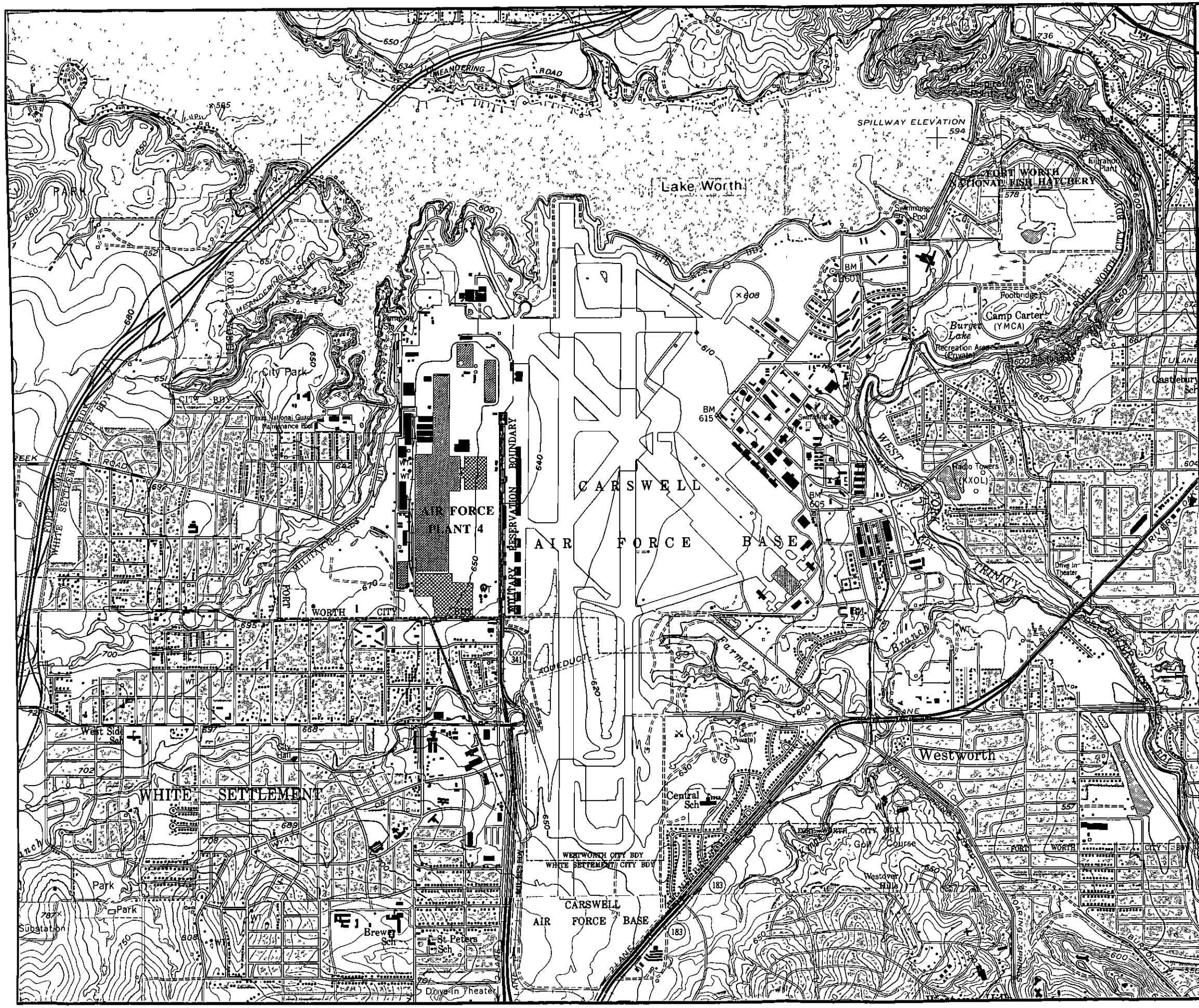


HydroGeoLogic, Inc —July 2000 Quarterly Report
NAS Fort Worth JRB, Texas

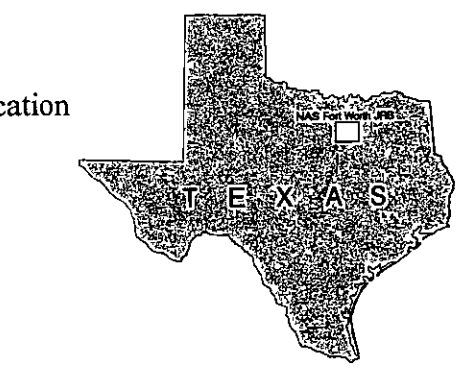
Figure 2.1

NAS Fort Worth JRB
Regional Topographic Map

Air Force Center for
Environmental Excellence
Brooks AFB, Texas

Legend

Site Location



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0 5 1
SCALE IN MILES

Scale 1:24,000

Filename X \AFC001\33DCBA\Report\topo cdr
Project AFC001-33DCBA
Created by cfarmer 05/27/99
Revised 08/22/00 ap
Map Source USGS
Maps Lake Worth and Benbrook, TX
Dates Photorevised 1981, 1982

HYDRO GeoLogic INC

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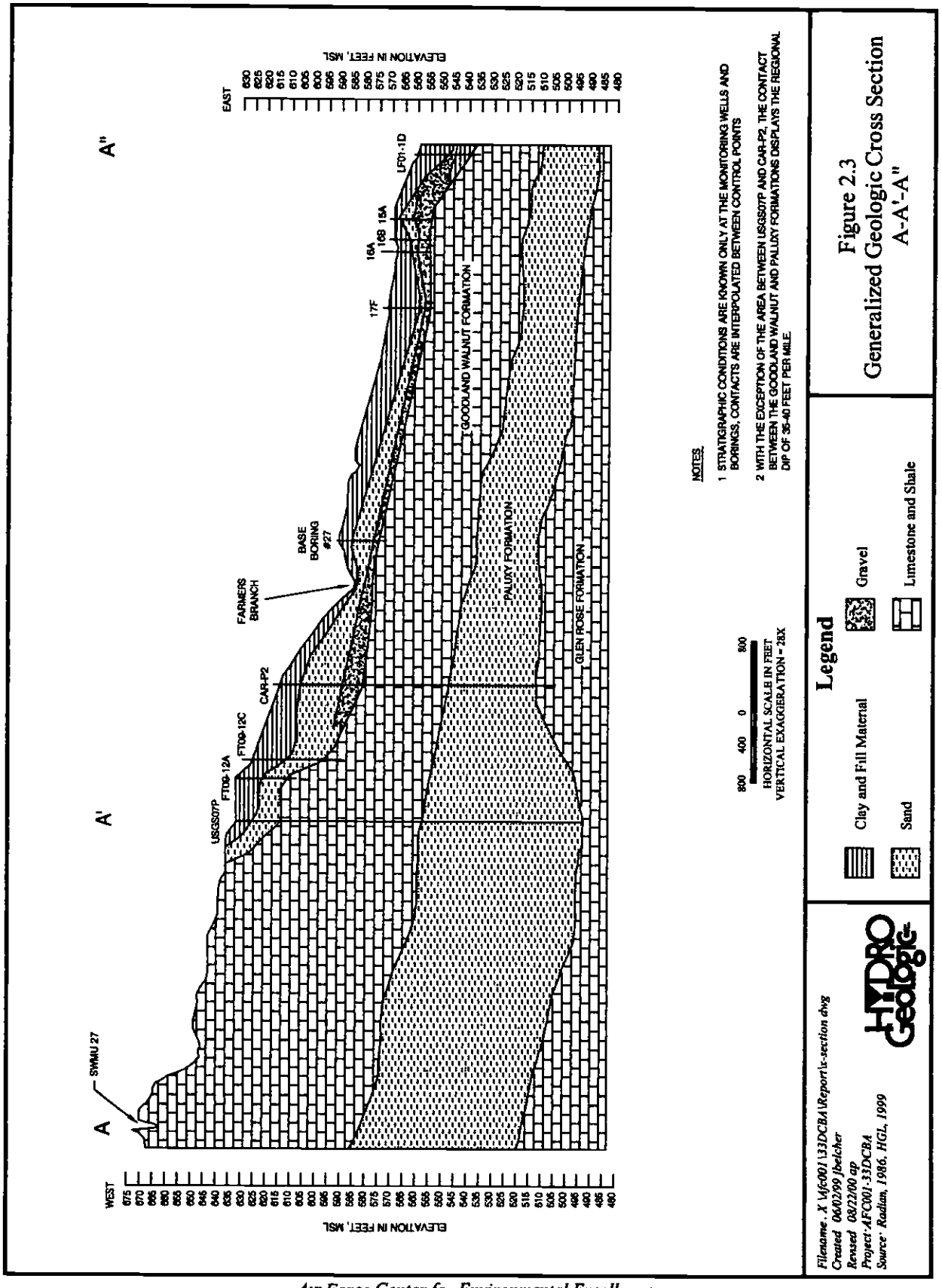
Project AFC001-33DCBA
Created 03/11/99 jbelcher
Revised 08/22/00 ap
Source HydroGeoLogic, Inc—GIS Database

HYDRO GeoLogic

Legend

- NAS Fort Worth JRB Boundary
- Former Carswell AFB Boundary
- SWMU 27 Location
- —660— Topographic Contour

Figure 2.2
Cross Section Location
A-A'-A''


A
A'
A"
SWMU 27
USGS07P
FT09-12A
FT09-12C
CAR-P2
FARMERS BRANCH
BASE BORING #27
17F
16A
16B
15A
LF01-1D
GOODLAND WALNUT FORMATION
PALUXY FORMATION
GLEN ROSE FORMATION
WEST
EAST
ELEVATION IN FEET, MSL
NOTES
1 STRATIGRAPHIC CONDITIONS ARE KNOWN ONLY AT THE MONITORING WELLS AND BORINGS, CONTACTS ARE INTERPOLATED BETWEEN CONTROL POINTS
2 WITH THE EXCEPTION OF THE AREA BETWEEN USGS07P AND CAR-P2, THE CONTACT BETWEEN THE GOODLAND WALNUT AND PALUXY FORMATIONS DISPLAYS THE REGIONAL DIP OF 35-40 FEET PER MILE
800 400 0 800
HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 28X
Legend
Clay and Fill Material
Gravel
Sand
Limestone and Shale
Figure 2.3
Generalized Geologic Cross Section
A-A'-A"
Filename: X:\Afc001\33DCBA\Report\x-section.dwg
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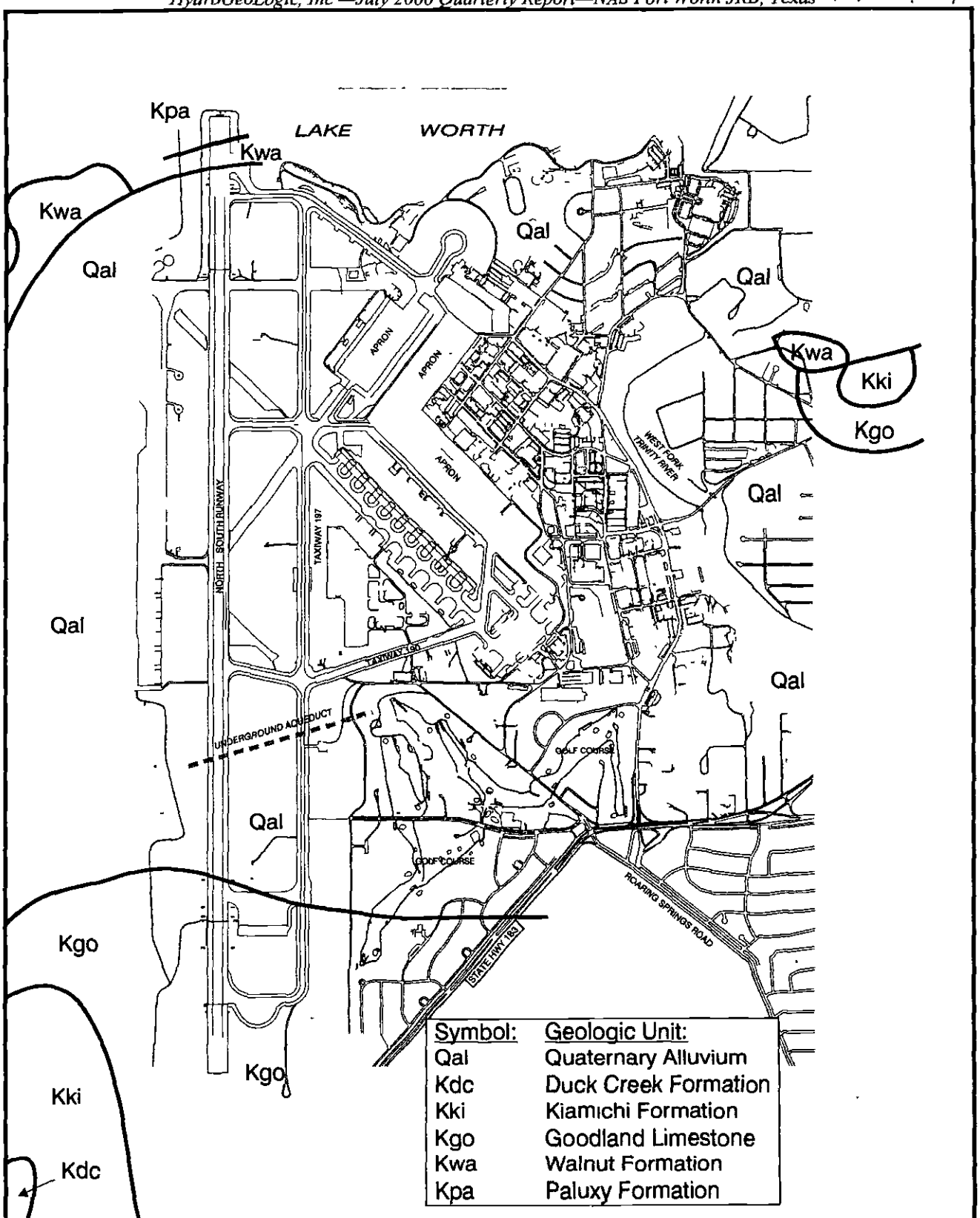
Revised 08/22/00 ap
Project: AFC001-33DCBA
Source: Radian, 1986, HGL, 1999
HYDRO Geologic



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Revised 08/22/00 ap
Project AFC001-33DCBA
Map Source Radian, 1989

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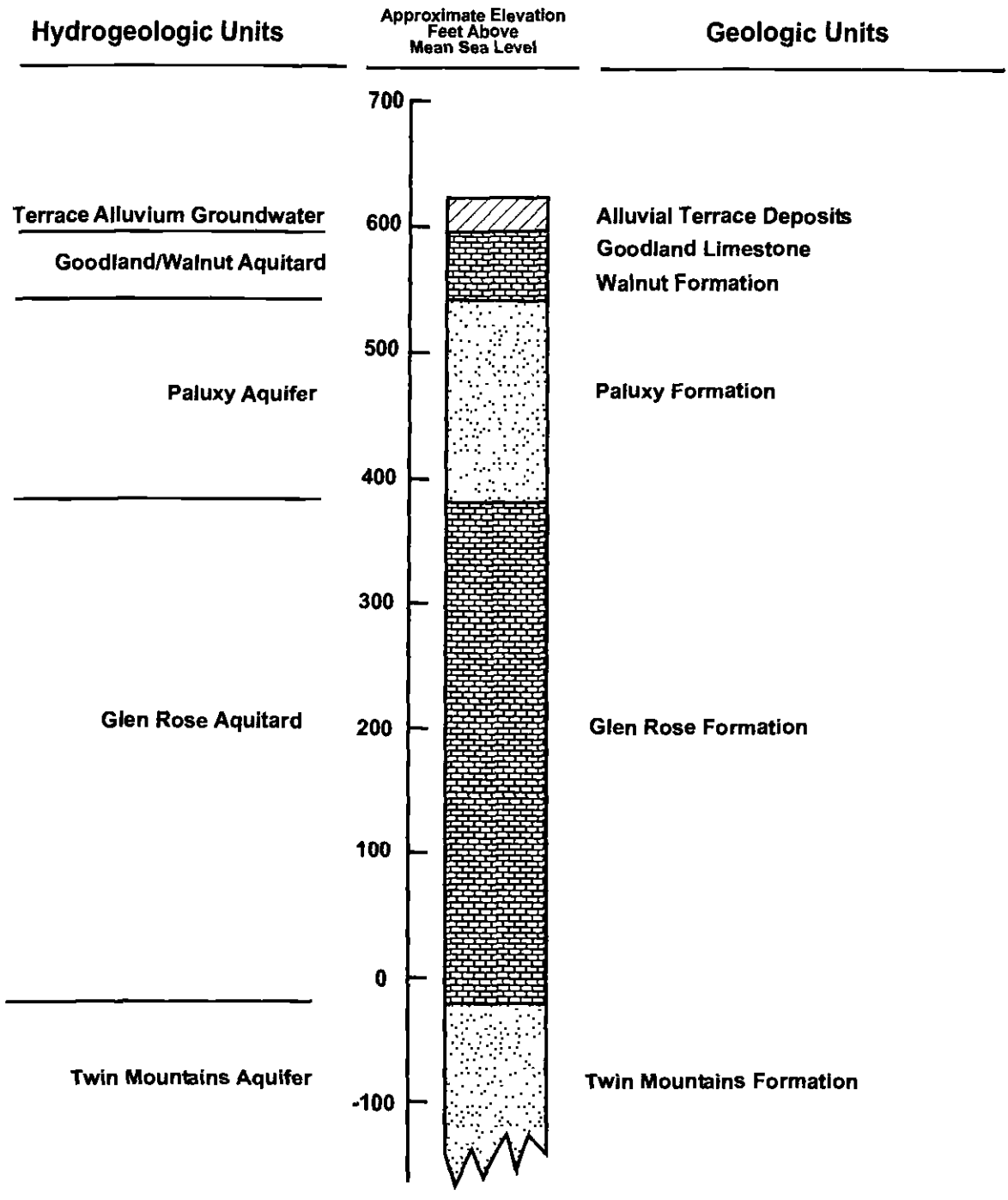
Figure 2.4
Areal Distribution of Geologic Units



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Revised 08/22/00 ap
Project AFC001-33DCBA
Map Source Radian, 1989

Legend

- Alluvium
- Limestone
- Sandstone

Figure 2.5
Stratigraphic Column Correlating Hydrogeologic Units and Geologic Units

the alluvial terrace deposits associated with the Trinity River (Terrace Alluvium), (2) an aquitard of predominantly dry limestone with interbedded fine-grained clay and shale layers of the Goodland and Walnut Formations, (3) an aquifer in the sandstone of the Paluxy Formation, (4) an aquitard of relatively impermeable limestone in the Glen Rose Formation, and (5) a major aquifer in the sandstone of the Twin Mountains Formation. Table 2.1 presents additional information on the stratigraphic units found beneath NAS Fort Worth JRB. Each of the major lithologic units beneath NAS Fort Worth JRB is examined in more detail in the following paragraphs.

2.3.1 Terrace Alluvium Deposits

The uppermost groundwater in the area occurs within the pore space of the grains of silt, clay, sand, and gravels deposited by the Trinity River. In some parts of Tarrant County, primarily in those areas adjacent to the Trinity River, groundwater from the terrace deposits is used for irrigation and residential use. However, groundwater from the terrace deposits is not often used as a source of potable water due to its limited distribution, poor yield, and susceptibility to surface/storm-water pollution (USGS, 1996). No potable water supply wells are completed in the Terrace Alluvium within 0.5 miles of NAS Fort Worth JRB.

Recharge to the water-bearing deposits occurs through infiltration from precipitation and from surface water bodies. Extensive on-site pavement and construction restricts this recharge. Additional recharge, however, comes from leakage in water lines, sewer systems, storm drains, and cooling water systems. This inflow of water to the shallow aquifer locally affects groundwater flow patterns and contamination transport. The estimated hydraulic conductivity of the Terrace Alluvium groundwater is 4.57 gallons per day per square foot (gpd/ft^2) (Radian, 1989).

Flow between aquifers is restricted by the Goodland/Walnut Formations; therefore, the Terrace Alluvium groundwater has no significant hydraulic connection to the underlying aquifers at NAS Fort Worth JRB. No evidence of contamination of the Paluxy aquifer has been found beneath NAS Fort Worth JRB.

The primary flow direction of water in the Terrace Alluvium is generally eastward toward the West Fork Trinity River, although localized variations exist across the base. The hydraulic gradient across the base is variable, reflecting variations in the flow direction and localized recharge. Groundwater discharge occurs into surface water on-site, specifically Farmers Branch Creek. Potentiometric maps of NAS Fort Worth JRB Terrace Alluvium groundwater developed from data obtained in previous gauging events show an easterly trend in groundwater flow across the base toward the West Fork Trinity River.

Table 2.1
Stratigraphic Units at NAS Fort Worth JRB, Texas[1]

Era	System	Series/Group	Strati-Graphic Unit	Thick-Ness (Feet)[2]	Lithologic Characteristics[3]	Water-Yielding Characteristics
Cenozoic	Quaternary (1 8 mya to present)	Holocene	Fill material	0	Construction debris	Permeability varies, gravels and sands permeable
			Recent alluvial deposits	0-50	Gravel, sand, silt, clay	Permeability varies; gravels and sands permeable
		Pleistocene	Terrace alluvial deposits	0-60	Gravel, sand, silt, clay	Permeability varies, gravels and sands permeable
Mesozoic	Cretaceous (65 to 140 mya)	Comanchean/ Fredericksburg	Goodland limestone	0-40	White fossiliferous limestone, coarsely nodular, resistant, and dense; contains some marl	Impermeable where not weathered; considered confining unit
			Walnut Formation	0.5-30	Medium to dark grey clay and limestone with shell conglomerates, fossiliferous, Gryphaea beds	Very low permeability; considered confining unit
		Comanchean/ Trinity	Paluxy Formation	130-175	Light grey to greenish-grey sandstone and mudstone, fine-grained to coarse-grained sandstone	Considered an aquifer, yields small to moderate quantities of water
			Glen Rose Formation	150, range unknown at AFP 4	Brownish-yellow and gray alternating limestone, marl, shale, and sand	Low permeability, considered confining unit in area of AFP 4
			Twin Mountains Formation4	200, range unknown at AFP 4	Fine- to coarse-grained sandstone shale and claystone, basal gravel conglomerate	Coarse sandstones and parts of formation considered aquifer; yields moderate to large quantities of water

Notes:
1 Table adapted from USGS, 1996
2 Thickness determined from site logs, except for Glen Rose Limestone and Twin Mountains Formation (Baker et al , 1990, Figure 4, as cited in USGS 1996)
3 Lithologic characteristics determined from field observations and from Winton and Adkins, 1919, University of Texas, Bureau of Economic Geology, 1972, U.S Army Corps of Engineers, 1986; Baker et al., 1990; Environmental Science and Engineering, Inc., 1994, all as cited in USGS 1996.
4 This stratigraphic name does not conform to the usage of the USGS.
mya - Million years ago

2.3.2 Goodland/Walnut Aquitard

The groundwater within the terrace deposits is isolated from groundwater within the lower aquifers by the low permeability rocks of the Goodland Limestone and Walnut Formations. The primary inhibitors to vertical groundwater movement within these units are the fine-grained clay and shale layers that are interbedded with layers of limestone. Some groundwater movement does occur between the individual bedding planes of both of these units, but the vertical hydraulic conductivity has been calculated to range between 1.2×10^{-09} centimeters per second (cm/s) to 7.3×10^{-11} cm/s for the NAS Fort Worth JRB and AFP 4 area. This corresponds to a vertical advective velocity rate that ranges between 1.16×10^{-03} feet per day (ft/d) to 5.22×10^{-03} ft/d (ESE, 1994). At the AFP 4 "window area," the Goodland/Walnut Aquitard is breached, and the Alluvial Terrace groundwater is in direct communication with the groundwater in the Paluxy aquifer. A significant number of monitoring wells and borings have been advanced on NAS Fort Worth JRB, and no evidence has been found indicating that a similar window exists on the base property.

2.3.3 Paluxy Aquifer

The Paluxy aquifer is an important source of potable groundwater for the Fort Worth area. Many of the surrounding communities, particularly White Settlement, obtain their municipal water supplies from the Paluxy aquifer Groundwater from the Paluxy aquifer is also used in some of the surrounding farms and ranches for agricultural purposes. Due to the extensive use of the Paluxy aquifer, water levels have declined significantly over the years. Water levels in the NAS Fort Worth JRB vicinity have not decreased as much as in the Fort Worth area due to its proximity to the Lake Worth recharge area and the fact that the base does not use water from the Paluxy aquifer. Drinking water at the base is supplied by the city of Fort Worth, which uses Lake Worth as its water source. The groundwater of the Paluxy aquifer is contained within the openings created by gaps between bedding planes and cracks and fissures in the sandstones of the Paluxy Formation. Just as the Paluxy Formation is divided into upper and lower sand members, the aquifer is likewise divided into upper and lower aquifers. The upper sand is finer grained and contains a higher percentage of shale than the lower sand. Radian (1989) estimated the hydraulic conductivity and transmissivity to be 130 to 140 gpd/ft^2 and 1,263 to 13,808 gallons per day per foot (gpd/ft), respectively. No evidence of contamination of the Paluxy Aquifer has been found beneath NAS Fort Worth JRB.

2.3.4 Glen Rose Aquitard

Below the Paluxy aquifer are the fine-grained limestone, shale, marl, and sandstone beds of the Glen Rose Formation. The thickness of the formation ranges from 250 to 450 feet. Although the sands in the Glen Rose Formation yield small quantities of groundwater in the area, the relatively impermeable limestone acts as an aquitard restricting water movement between the Paluxy aquifer above and the Twin Mountains aquifer below.

2.3.5 Twin Mountains Aquifer

The Twin Mountains Formation is the oldest and deepest water supply source used in the NAS Fort Worth JRB area. The Twin Mountains Formation occurs approximately 600 feet below NAS Fort Worth JRB with a thickness of between 250 to 430 feet. Recharge to the Twin Mountains aquifer occurs west of NAS Fort Worth JRB where the formation crops out. Groundwater movement follows the regional eastward slope of the bedrock. Like the groundwater in the Paluxy aquifer, the Twin Mountains groundwater occurs under unconfined conditions in the recharge area and becomes confined as it moves downdip. Transmissivities in the Twin Mountain aquifer range from 1,950 to 29,700 gpd/ft and average 8,450 gpd/ft in Tarrant County. Permeabilities range from 8 to 165 gpd/ft^2 and average 68 gpd/ft^2 in Tarrant County (CH2M HILL, 1984).

2.4 SURFACE WATER

NAS Fort Worth JRB is located within the Trinity River Basin adjacent to Lake Worth. The main surface water features of interest are Lake Worth, the West Fork Trinity River, and Farmers Branch Creek. Lake Worth, which was constructed in 1941 as a source of municipal water for the city of Fort Worth, borders the base to the north of NAS Fort Worth JRB. The surface area of the lake is approximately 2,500 acres. The Paluxy aquifer discharges to Lake Worth near its western extent. However, in the portion of the lake near Bomber Road, the top of the Paluxy aquifer is recharged by Lake Worth. There does not appear to be a hydraulic connection between the Paluxy aquifer and the lake in the eastern portion where the Walnut Formation separates the Paluxy aquifer and Lake Worth. The elevation of the lake is fairly constant at approximately 594 feet above NGVD, the fixed elevation of the dam spillway (USGS, 1996).

The West Fork Trinity River, a major river in north central Texas, defines the eastern boundary of the base. The Trinity River flows southeast towards the Gulf of Mexico. Because the river has been dammed, the 100- and 500-year flood plains downstream of the dam do not extend more than 400 feet from the center of the river or any of its tributaries.

Storm water, which enters the NAS Fort Worth storm water drainage system, is discharged directly into Lake Worth. The outfall is permitted under the National Pollutant Discharge Elimination System, and monitoring results document compliance with permit discharge limitations (IT Corporation, 1997).

Storm water which does not enter the drainage system, drains east towards the West Fork Trinity River. A portion of the base is drained by Farmers Branch Creek, a tributary to the West Fork Trinity River. Farmers Branch Creek begins within the community of White Settlement and flows eastward. Most of the flow in the creek is due to surface runoff, with some groundwater recharge from the Terrace Alluvium groundwater. Just south of AFP 4, Farmers Branch flows under the runway within two large culverts identified as an aqueduct. Two unnamed tributaries flow across the Flightline Area and discharge into Farmers Branch Creek. Another unnamed stream (approximately 200 feet long) is located in the SD13 area and

discharges to Farmers Branch Creek as well. An oil/water separator located on the upgradient end of the stream near monitoring well SD13-06 empties into the unnamed stream. Most of the base drainage is intercepted by a series of storm drains and culverts, directed to oil/water separators, and discharged to the West Fork Trinity River downstream of Lake Worth. A small portion of the north end of the base drains directly into Lake Worth.

2.5 CLIMATE

The climate in the Fort Worth area is classified as sub-humid with long, hot summers and short, dry winters. Tropical maritime air masses control the weather during much of the year, but the passage of polar cold fronts and continental air masses can create large variations in winter temperatures. The average annual temperature in the area is 68.6 degrees Fahrenheit (°F), and monthly mean temperatures vary from 48.6°F in January to 86.1°F in July. The average daily minimum temperature in January is 35°F, and the lowest recorded temperature is 17°F. The average daily maximum temperature in July and August is 96.4°F, and the highest temperature ever recorded in the Dallas/Fort Worth area was 111°F in the month of September 2000. Freezing temperatures occur at NAS Fort Worth JRB an average of 33 days per year (National Weather Service, 2000).

Mean annual precipitation recorded at the base is approximately 32 inches. The wettest months are April and May, with a secondary maximum in September. The period from November to March is generally dry, with a secondary minimum in August. Snowfall accounts for a small percentage of the total precipitation between November and March Thunderstorm activity occurs at the base an average of 45 days per year, with the majority of the activity between April and June. Hail may fall 2 to 3 days per year. The maximum precipitation recorded in a 24-hour period is 1.49 inches. On the average, measurable snowfall occurs 2 days per year.

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TAB

SECTION 3.0

3.0 MONITORING ACTIVITIES

This section describes the procedures performed during the July 2000 quarterly groundwater sampling event at NAS Fort Worth JRB. All work was performed in accordance with the Final GSAP (HydroGeoLogic, 2000a) and Final Basewide QAPP (HydroGeoLogic, 2000b).

Monitoring activities included:

- Monitoring well inspection/maintenance
- Water level measurements
- Monitoring well purging and analytical sampling
- Investigative-derived waste (IDW) management
- Laboratory and field analysis

3.1 MONITORING WELL INSPECTION/MAINTENANCE

A full well inspection and maintenance was performed at all 273 monitoring wells following the July 2000 sampling event. A visual inspection of each monitoring well proposed for sampling was conducted to determine the monitoring well's condition and integrity. As part of the monitoring well inspection procedure, the integrity of the surface features, such as, the concrete pad, security posts, and the manhole cover, were thoroughly examined and the maintenance needs were recorded. The monitoring well casing, cap, and any security features such as locks, monitoring well identification and bolts, were repaired or replaced as appropriate, or noted for future maintenance. Following the visual inspection of each monitoring well, a photoionization detector (PID) was used to measure the levels of organic vapors in the background area, breathing zone, and at the top of each well casing immediately after the well cap had been removed. All well inspection and measurement data were recorded on the monitoring well maintenance forms provided in Appendix A.1 and in the field notes provided in Appendix A.2.

3.2 WATER LEVEL MEASUREMENTS

In order to evaluate existing groundwater flow patterns, 273 monitoring wells located east of AFP 4 were used for water level measurements during the July sampling event. The locations of these wells are provided in Figure 3.1. The monitoring wells were inspected, and both depth to water and total depth of the monitoring well were measured. For wells containing dedicated sampling equipment, the pumps were temporarily removed. The water level measurements and total depths were taken several days after purging and sampling the monitoring wells, or after the dedicated sampling equipment was removed, to ensure equilibrium conditions. After water level measurements were recorded, dedicated sampling equipment was replaced.

Each monitoring well was checked for total depth to determine whether fine materials have accumulated inside the monitoring well casing. For monitoring wells that contain an

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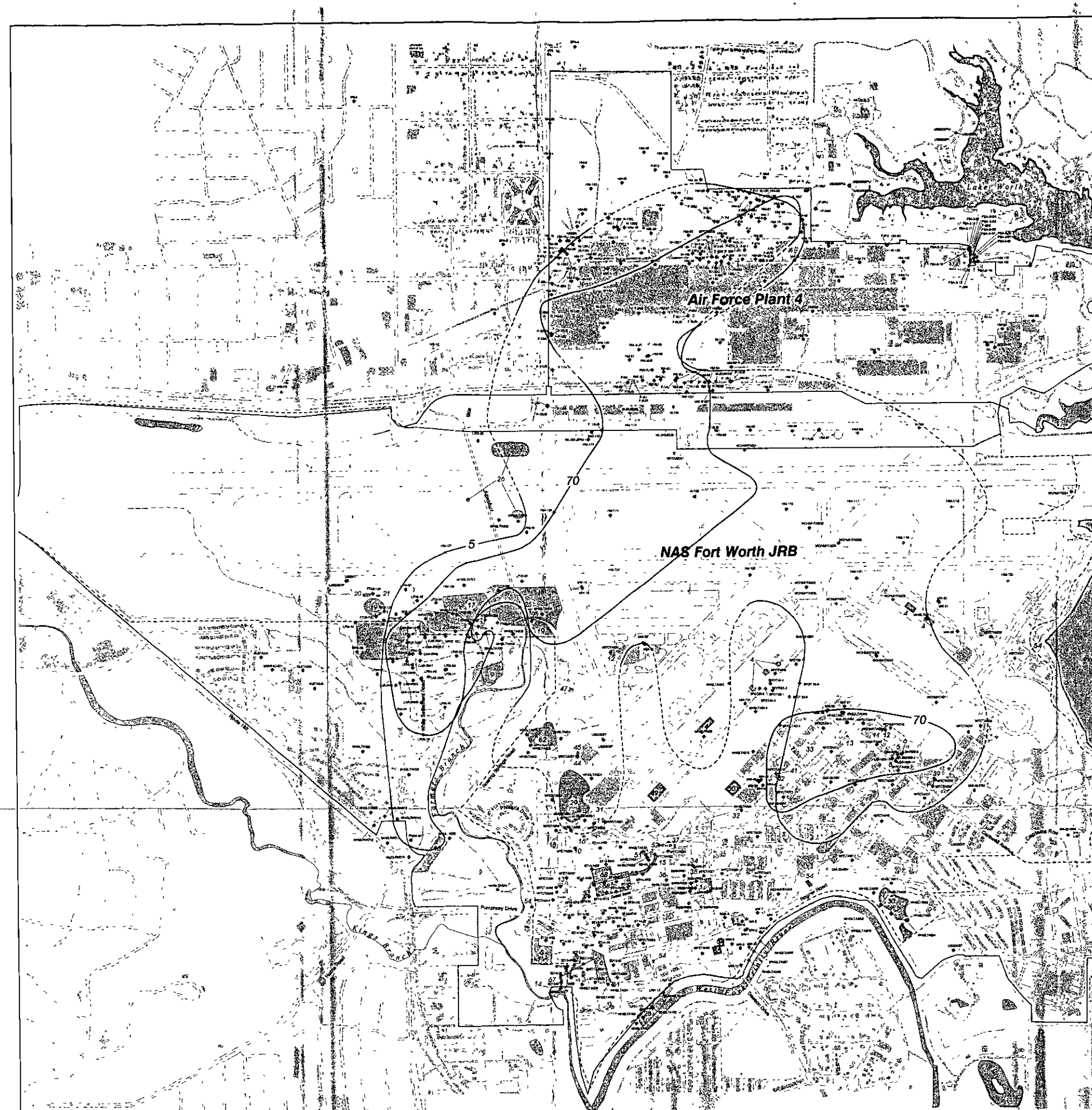

Figure 3.1

Summary of Analytical Sampling July 2000

U S Air Force Center For Environmental Excellence

Legend

- NAS Fort Worth JRB (Carswell Field)
- Former Carswell Air Force Base
- Trichloroethene Plume Boundary set at MCL (5 µg/L) (AFP 4 contours based on April 2000 data)
- *cis*-1,2-Dichloroethene Plume Boundary set at MCL (70 µg/L) (AFP 4 contours based on April 2000 data)
- USGS04T — Semi-Annual Plume Monitoring Wells (January & July)
- USGS04T — Semi-Annual Plume Monitoring Wells (April & October)
- USGS04T — Quarterly Plume Monitoring Wells
- MW 10 — AOC 1 Monitoring Wells
- WHGLTA010 — AOC 4 Monitoring Wells
- HM-120 — AFP 4 Semi-Annual Monitoring Wells
- S114-28 — Remedial Action Plan Monitoring Wells
- WRGTA011 — Other Wells

Note Dashed contour indicates interpreted plume boundary

Area of Concern (AOC)

1 Former Base Service Station/Former Base Gas Station
2 Airfield Groundwater (Basewide Coverage)
4 Fuel Hydrant System
5 Grounds Maintenance Yard
6 RV Storage Area
7 Former Base Refueling Area
8 Aerospace Museum
9 Golf Course Maintenance Yard
10 O/W Separator
11 O/W Separator
12 O/W Separator
13 O/W Separator
14 Unnamed Stream
15 Storage Shed
16 Family Camp
17 Former Landfill
18 Suspected Former Fire Training Area A
19 Suspected Former Fire Training Area B

Solid Waste Management Unit (SWMU)

5 Building 1625 Waste Accumulation Area
6 Building 1628 Wash Rack and Drain
7 Building 1626 Oil/Water Separator
8 Building 1626 Sludge Collection Tank
11 Building 1617 Waste Accumulation Area
12 Building 1619 Waste Accumulation Area
13 Building 1710 Visual Information Center Work Station Waste Accumulation Areas
16 Building 1080 Waste Accumulation Area
17 Landfill No.7
19 Fire Training Area No.2
20 Waste Fuel Storage Tank
21 Waste Oil Tank
22 Landfill No. 4
23 Landfill No.5
24 Waste Burial Area
25 Landfill No.6
26 Landfill No.3
27 Landfill No.10
28 Landfill No.1
29 Landfill No.2
30 Landfill No.9
31 Building 1050 Waste Accumulation Area
32 Building 1410 Waste Accumulation Area
33 Building 1420 Waste Accumulation Area
34 Building 1184 Waste Accumulation Area
35 Vehicle Refueling Shop (Building 1184) Oil/Water Separation System
36 Building 1191 Waste Accumulation Area
37 Vehicle Maintenance Shop (Building 1191) Oil/Water Separation System
38 Building 1643 Waste Accumulation Area
40 Building 1643 Oil/Water Separation System
41 Building 1414 Oil/Water Separation System, Field Maintenance Squadron Aerospace Ground Equipment
42 Building 1414 Waste Accumulation Area
44 Building 1027 Oil/Water Separation System at the Aircraft Washing Hangar
46 Building 1027 Waste Oil Tank Vault at the Aircraft Washing Hangar
47 Building 1015 Jet Engine Test Cell Oil/Water Separator
49 Aircraft Washing Area No.1
50 Aircraft Washing Area No.2
51 Building 1180 Central Waste Holding Area
52 Building 1180 Oil/Water Separation System
53 Storm Water Drainage System
54 Storm Water Interceptors
55 East Gate Oil/Water Separator
61 Building 1320 Power Production Maintenance Facility Waste Accumulation Area
62 Landfill No. 8
64 French Underdrain System
66 Sanitary Sewer System (Basewide Coverage)
67 Building 1340 Oil/Water Separator
68 POL Tank Farm

N

500 0 500 1000
SCALE IN FEET

HYDRO GeoLogic INC

Filename X:\Afc001\33dcba\Reports\analytical sampling.apr
Created by lbelcher 06.26.99
Revised 10.03.00 jb
Project AFC001-33DCBA
Map Source HydroGeoLogic GIS Database, 1999
Jacobs Engineering, 1996

accumulation of fine material greater than 20 percent of the screened interval, the monitoring well will be considered for redevelopment. During the July 2000 sampling event, no monitoring wells contained an accumulation of fine material greater than 20 percent. The total depth of monitoring wells with dedicated sampling equipment is measured on an annual basis, generally during the January sampling events. However, since a sampling event was not conducted in January 2000, the total depth of monitoring wells with dedicated sampling equipment was measured during the July 2000 sampling event.

For monitoring wells which recorded PID readings over 100 parts per million or contained free product in the past, an interface probe was used, in accordance with Appendix C of the GSAP (HydroGeoLogic, 2000a), in order to check for free-product (i.e , LNAPL). Field notes documented whether an odor, sheen, or measurable free product (>0.01 feet thickness) was present. If greater than 0.01 feet of free-product was present, it was removed via absorbent pads until no measurable product remained. Free product recovery was not required at any of the monitoring wells sampled during the July 2000 sampling event.

3.3 MONITORING WELL/CHEMICAL ANALYSIS SELECTION

Nineteen monitoring wells were scheduled for analytical sampling in July 2000 as described in the GSAP (HydroGeoLogic, 2000a). Two additional monitoring wells, HM-126 and WHGLRW017, were also sampled to provide additional plume delineation. The monitoring wells selected for analytical sampling were further divided based on whether the monitoring wells were selected primarily to evaluate plume characteristics, the potential for off-site migration, or to collect natural attenuation data. The reason for selection of the monitoring well dictated the chemical parameters selected for analysis at each monitoring well. Table 3.1 includes a list of the TCE plume monitoring wells sampled during the July 2000 sampling event and the chemical parameters selected for analysis at each monitoring well.

Components considered in developing the sampling approach included monitoring well location relative to an area/source of contamination, type of contamination suspected and/or detected, and specified monitoring requirements resulting from ongoing or previous investigations. The analysis proposed for a selected monitoring well reflects the monitoring objective(s) that it supports. For example, when a selected monitoring well supports both the plume delineation objective as well as the natural attenuation objective, the list of analytical tests reflects the analysis needed to fulfill both objectives (i.e., volatile organic compounds [VOCs] and natural attenuation parameters). There was no sampling for natural attenuation parameters conducted during the July 2000 sampling event. Natural attenuation parameters are sampled on a semi-annual basis in April and October 2000.

3.3.1 Critical Groundwater Exposure Pathways

Several monitoring wells located near the base boundaries, and/or immediately upgradient of surface water bodies where groundwater discharges to surface water, were selected to monitor potential for off-site migration. The selected monitoring wells are ITMW-01T, USGS07T,

Table 3.1
TCE Plume Monitoring Wells Selected for
July 2000 Basewide Sampling

Well	Sample Parameters[1]	
	VOCs	Metals
GMI-22-06M	X	
GMI-22-07M	X	
HM-123	X	
HM-126	X	
ITMW-01T	X	X
LF03-3D	X	
LF05-01	X	
LF05-5G	X	
MW-53	X	
SPOT35-5	X	
USGS07T	X	X
W-153	X	
WHGLTA011	X	
WHGLRW015	X	
WHGLRW017	X	
WHGLTA025	X	
WITCTA004	X	
WITCTA010	X	
WITCTA017	X	X
WITCTA024	X	
WJETA535	X	X

[1] Samples from all wells were also tested for the following standard field parameters: temperature, pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (Eh), and turbidity.

Notes:
VOCs - Volatile organic compounds (EPA Method SW8260B)
Metals - Total metals plus mercury (EPA Methods SW6010B/SW7471A)

WITCTA017, and WJETA535. These perimeter monitoring wells are sampled for VOCs by EPA Method SW8260B and total metals plus mercury by EPA Methods SW6010B/SW7470A.

3.3.2 Additional Source and Plume Delineation

A total of 21 existing monitoring wells located within and around the TCE plume were selected to provide additional source and plume delineation. These monitoring wells were selected to provide continued plume detail in areas which have been evaluated in the past. Monitoring wells selected for plume delineation were analyzed for VOCs using EPA Method SW8260B.

3.3.3 Current Regulatory Requirements

Three additional monitoring wells were sampled as part of an ongoing RCRA Facility Investigation (RFI) for Landfill 7 The three monitoring wells sampled for Landfill 7 were WHGLTA704, WHGLTA705, and WHGLTA706. These monitoring wells were sampled for VOCs by EPA Method SW8260B. The analytical results from the Landfill 7 Investigation will be discussed in a separate RFI report.

3.4 MONITORING WELL PURGING AND ANALYTICAL SAMPLING

The 21 monitoring wells were sampled utilizing a low-flow purge technique, the procedure recommended for AFCEE projects (AFCEE, 1996). Detailed sampling protocol is included in Appendix C of the GSAP (HydroGeoLogic, 2000a).

3.4.1 Purging Procedures

Dedicated MicroPurge® Well Wizard® bladder pumps were used to purge and sample 19 of the 21 monitoring wells designated as TCE plume monitoring wells on Table 3.1. A non-dedicated stainless steel bladder pump was used on the remaining two monitoring wells, HM-126 and WHGLRW017. The bladder pump is ideal for low-flow purging and can sustain pumping rates between 0.1 to 0.5 liter/minute minimizing turbidity, oxygenation, mixing of chemically distinct zones, and potential loss of VOCs. Continuity of the groundwater sampling is achieved in the majority of the sampling through using the same dedicated equipment each event and minimizing the disturbance to the water column. With non-dedicated equipment, pumps that are lowered into the monitoring well will cause some mixing of the stagnant and dynamic water zones, and resuspension of solids that have settled in the monitoring well. The dedicated pump system requires no equipment blanks or equipment decontamination.

During all purging, water quality stabilization criteria (pH, temperature, dissolved oxygen [DO], oxidation-reduction potential [Eh], turbidity, and electrical conductance [EC]) were continuously monitored using a flow-thru cell. The measurements were recorded on the groundwater field sampling data sheets (Appendix A.3). The criteria for sample collection was the stabilization of water quality parameters as follows:

- Temperature: +/- 1°C
- pH: +/- 0.1 units
- EC: +/- 3% full scale range
- DO: +/- 0.10 milligrams per liter or 10% of value (whichever is greater)
- Eh: +/- 10 mV
- Turbidity: +/- 10% and less than 10 Nephelometric turbidity units whenever possible

3.4.2 Sampling Procedures

A monitoring well was sampled when the water quality stabilization criteria were met. If the parameters did not stabilize, the sample was collected when a minimum subset of the above parameters stabilized as described in Appendix C of the GSAP (HydroGeoLogic, 2000a)

Samples for VOC analysis were collected first at each monitoring well, followed by the samples for metals analysis, when applicable Required sample containers, preservation methods, volumes, and holding times are provided in Section 5.0 of the QAPP (HydroGeoLogic, 2000b).

3.5 INVESTIGATION-DERIVED WASTE MANAGEMENT

IDW management procedures were followed as outlined in Section C.9.2 of the Final GSAP (HydroGeoLogic, 2000a). All purge and decontamination water was stored in the poly farm tank at the recreational vehicle storage area. Disposal of the purge water and decontamination water was conducted in September following the receipt of analytical results.

3.6 LABORATORY AND FIELD ANALYSIS

The methods selected for the chemical analyses for the July 2000 sampling event are listed on Table 3.1. All samples were delivered by overnight courier to Severn Trent Laboratory in Chicago, Illinois. Each sample was submitted for analysis of the constituents outlined in Table 3.1, and analyzed according to the specifications in the QAPP (HydroGeoLogic, 2000b).

TAB

SECTION 4.0

4.0 QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

This section describes the analytical methods and QC program utilized for the basewide quarterly monitoring events at NAS Fort Worth JRB and provides a data quality evaluation (DQE) of the July 2000 quarterly groundwater sampling event. The analytical methods used for the collection of data are described in the QAPP (HydroGeoLogic, 2000b).

4.1 FIELD QUALITY CONTROL

The field QC program for the collection of samples at NAS Fort Worth JRB included specific procedures for the collection of groundwater samples as described in the Final Basewide GSAP (HydroGeoLogic, 2000a). Sample bottles met U.S. Environmental Protection Agency (EPA) requirements for environmentally clean containers. Sample labels were pre-printed to facilitate sample tracking from the field through the laboratory to the final report. Documentation of sample collection is performed in the field to ensure that sample labeling, COC, and field sampling reports are in agreement and traceable back to the correct field sample. Custody seals were placed on each cooler before shipment by a common carrier.

Field QC samples were collected to evaluate sampling technique and decontamination procedures. The samples including ambient blanks, equipment blanks, trip blanks, and field duplicates are described below. A summary of the QC samples, including the number of each type collected as part of the July 2000 sampling event, are included in Table 4.1.

4.1.1 Ambient Blanks

Ambient blanks consist of American Society for Testing and Materials (ASTM) Type II reagent grade water poured into a VOC sample vial at a sampling site (in the same vicinity as the associated samples). Ambient blanks are used to assess the potential introduction of contaminants from ambient sources (e.g., active runways, engine test cells, gasoline motors in operation) to the samples during sample collection. Project ambient blanks were handled like environmental samples and transported to the laboratory for analysis.

One ambient blank was collected during the July 2000 quarterly sampling event to account for potential interferences due to gasoline motors in operation in a high traffic area. No ambient contaminants were detected in the sample.

4.1.2 Equipment Blanks

An equipment blank is a sample of ASTM Type II reagent grade water poured into, poured over, or pumped through a sampling device, collected in a sample container, and transported to the laboratory for analysis. Equipment blanks are used to assess the effectiveness of equipment decontamination procedures. On days where only dedicated or disposable equipment is used, equipment blanks are not required as there is no potential for cross-contamination between sampling locations. During the July 2000 sampling event, two equipment blanks were

Table 4.1
Field Quality Control Samples
Collected for July 2000 Basewide Sampling

Type of Sample	Purpose	Frequency	Total Number	Time	Analysis
Ambient Blank	Used to assess the impact of ambient conditions	1 ambient blank/sampling event	1	During normal sample collection conditions	VOCs
Equipment Blank	Used to assess the effectiveness of equipment decontamination procedures	1 equipment blank/day that equipment is decontaminated	2	Immediately after equipment had been decontaminated	All laboratory analyses consistent with daily sampling
Trip Blank	Used to assess the potential contaminants from sample containers or other foreign sources during sample transportation and storage.	1 trip blank/ sample cooler	6	When VOC samples were collected	VOCs
Field Duplicate (blind)	Used to assess sample collection procedures, sample preparation, and improper analytical instrument use.	1 duplicate/10 environmental samples	2	Collected at the same time and location of original sample	Same as original sample

Notes.
VOCs - Volatile organic compounds (EPA Method SW8260B)

collected. One equipment blank was collected for each type of sample equipment used on each day that equipment decontamination activities occurred. Equipment blanks were collected immediately after the equipment was decontaminated. Each equipment blank was analyzed for all laboratory analyses requested for the environmental samples collected at any associated site on that day. Equipment blanks are only associated with samples HM-126 and WHGLRW017, as dedicated equipment was not used at those monitoring wells. No analyte detections were qualified as artifacts due to equipment blank contamination.

4.1.3 Trip Blanks

Trip blanks consist of VOC sample vials filled in the laboratory with ASTM Type II reagent grade water, transported to the sampling site, handled as environmental samples, and returned to the laboratory for analysis. Trip blanks are not opened in the field and are submitted only

when VOC, benzene, toluene, ethylbenzene, and xylenes, or dissolved gases samples are collected for analysis. Trip blanks are used to assess the potential introduction of contaminants from sample containers, and during sample transportation and storage. For the July 2000 sampling event, a set of trip blanks was included in each sample cooler containing samples requiring VOCs or dissolved gases analysis.

A total of six trip blanks are associated with the July 2000 sampling event. Two methylene chloride detections were qualified "U" as artifacts due to trip blank contamination.

4.1.4 Field Duplicates

A field duplicate is a second sample collected in the same location as a field sample ("parent" sample). Duplicate samples are collected simultaneously, or in immediate succession, to collection of parent sample, using identical recovery techniques. The parent and duplicate are treated in an identical manner during transportation, storage, preparation, and analysis. Two field duplicates are associated with the July 2000 sampling event. Any data qualification required by duplicates not meeting the precision criteria for the July 2000 event are discussed in Section 4.5 of this report.

4.2 SAMPLE TRACKING PROTOCOL

Each field sample was assigned a unique identification number that described where the sample was collected. The number consists of a maximum 12-digit alphanumeric code as follows:

xxxxxxxxxzzaa

where:

xxxxxxxxx	represents the well identification or well name (e.g., LF03-3D, WHGLTA025), also referred to as the LOCID
zz	represents the medium (WG for water-ground)
aa	indicates the sampling event number for groundwater, surface water, and soil (e.g., 01, 02, 03, etc.)

For example, the groundwater sample collected during the twelfth sampling event from LF03-3D would be identified as "LF03-3DWG12."

In order to ensure that field duplicates were analyzed 'blind' by the laboratory, each field duplicate sample was assigned a unique sample identification number that did not associate the duplicate with its parent sample. The locations from which field duplicate samples were to be collected were determined prior to mobilization. Documentation was maintained in the field sampling log book, and on the sample collection log, to track these field duplicate samples. For example, a blind duplicate sample would be identified as "DUP01."

QC samples were identified by use of a similar system of identifiers with a maximum of 10 characters. The QC sampling number system is summarized below:

xxyyyyyy

where:

xx represents the medium (EB for equipment blank, TB for trip blank, AB for ambient blank)

yyyyyy represents the date (month, day, year)

For example, an equipment blank obtained on July 12, 2000, would be identified as EB071200.

The Project Geologist/Field Coordinator maintained a list detailing the connection between each QC sample and specific environmental samples. For instance, each trip blank was correlated with a particular set of volatile samples shipped to the laboratory in the same cooler, and each equipment blank was correlated to those samples collected on a specific date using nondedicated sampling equipment.

After the laboratory data were received and validated, data entry and QC operations were performed on the laboratory's electronic data deliverables (EDDs) to ensure that each EDD was complete, correct, and compliant with the Environmental Resources Program Information Management System (ERPIMS) format. An EDD report in the ERPIMS format will be provided.

For the purpose of this report, samples will be referred to by their LOCIDs and will not contain the suffix "WG12". The suffix of "DL" is applied to indicate a sample result reported from a diluted analysis, and the suffix "RE" indicates a sample result reported from a reanalysis.

4.3 LABORATORY QUALITY CONTROL

The laboratory QC program, including sample handling, laboratory QC elements, and data reporting, is fully documented in the QAPP (HydroGeoLogic, 2000b). Sample handling includes documentation of sample receipt, placement in storage, controlled sample access, and disposal. Laboratory QC elements consist of instrument calibration and maintenance, laboratory control samples (LCSs), method blanks, matrix spike/matrix spike duplicate (MS/MSD) samples, and method-specific QC checks. Reporting of the laboratory control data was planned prior to the collection of the data, allowing the laboratory to place the appropriate information into each data package so that the DQE could be performed in a timely manner.

4.4 QUALITY CONTROL ELEMENTS

The basis for assessing each element of data quality (precision, accuracy, representativeness, completeness, and comparability) is discussed in the following subsections.

4.4.1 Precision

Precision measures the reproducibility of measurements. It is strictly defined as the degree of mutual agreement among independent measurements as the result of repeated application of the same process under similar conditions. Analytical precision is the measurement of the variability associated with duplicate (two) or replicate (more than two) analyses. Total precision is the measurement of the variability associated with the entire sampling and analysis process, and is determined by analysis of duplicate or replicate field samples and measures variability introduced by both the laboratory and field operations. Field duplicate samples and MSD samples were analyzed to assess field and analytical precision, and the precision measurement was determined using the relative percent difference between the duplicate sample results. For replicate analyses, the relative standard deviation was determined. Acceptable values for precision for each analyte are listed by analysis method in the QAPP (HydroGeoLogic, 2000b).

4.4.2 Accuracy

Accuracy is a statistical measurement of correctness and includes components of random error (variability due to imprecision) and system error. It therefore reflects the total error associated with a measurement. A measurement was accurate when the value reported did not differ from the true value or known concentration of the spike or standard. Analytical accuracy was measured by comparing the percent recovery (%R) of analytes spiked into an LCS to a control limit. For most organic analytical methods, surrogate compound recoveries were also used to assess accuracy and method performance for each sample analyzed. Analysis of performance evaluation (PE) samples were also used to provide additional information for assessing the accuracy of the analytical data being produced.

Both accuracy and precision were calculated for each AFCEE analytical batch, and the associated sample results were interpreted by considering these specific measurements. The formula for calculation of accuracy is %R from pure and sample matrices. Acceptable values for %R for each analyte are listed by analytical method in the QAPP (HydroGeoLogic, 2000b). Accuracy and precision for the July 2000 sampling event are discussed in Section 4.5 of this report.

4.4.3 Representativeness

Objectives for representativeness were defined for each sampling and analysis task and were a function of the investigative objectives. Representativeness was achieved through use of the standard field, sampling, and analytical procedures. Representativeness was also determined

by appropriate program design with consideration of elements such as proper sampling locations.

The same analytical methods are maintained from quarter to quarter (with the two exceptions cited in Section 4.4.5 below). The dedicated bladder pumps help to ensure representative samples are collected each sampling round.

4.4.4 Completeness

Completeness was calculated for the aggregation of data for each analyte measured for any particular sampling event or other defined set of samples. The number of valid results divided by the number of possible individual analyte results, expressed as a percentage, determines the completeness of the data set. In evaluating sampling event completeness, valid results were all results not qualified with an "R" qualifier (see Table 4.2 for an explanation of qualifiers used). The project requirement for completeness is 95 percent for aqueous samples. For any instances of samples that could not be analyzed for any reason (holding time violations in which resampling and analysis were not possible, samples spilled or broken, etc.), the numerator of this calculation becomes the number of valid results minus the number of possible results not reported.

The formula for calculation of completeness follows:

$$\%\ \text{completeness} = \frac{\text{number of valid (i.e., non} - \text{R qualified) results}}{\text{number of possible results}} \times 100$$

The July 2000 sampling event generated a total of 1,522 data points (from environmental samples and field duplicates); 1,492 of these data points were considered usable. Note: two samples had original results rejected. In both cases, the sample was reanalyzed under a secondary dilution and the original result has been replaced with a non-rejected, non-detection result with an elevated reporting limit. Overall project completeness was calculated to be 98.0%, which meets project completeness requirements. Completeness calculated on a per-analyte basis is evaluated in the discussion of individual analytical method subsections in Section 4.5. All rejected and missing data points are summarized in Table 4.3.

4.4.5 Comparability

Comparability is the confidence with which one data set can be compared to another data set. The objective for this QC program is to produce data with the greatest possible degree of comparability. The number of matrices that are sampled and the range of field conditions encountered are considered in determining comparability. Comparability is achieved by using standard methods for sampling and analysis, reporting data in standard units, normalizing results to standard conditions and using standard and comprehensive reporting formats. Complete field documentation using standardized data collection forms supports the assessment of comparability.

Table 4.2
Data Qualifiers

Qualifiers[1]	Positive Results	Negative Results
Qualifiers for Data Within Acceptance Limits (Usable as Reported)		
(no qualifier)	The result is a detection with the indicated value and units. (Use datum without qualification)	(Not applicable)
U	(Not applicable)	The analyte was analyzed for, but not detected. The associated numerical value is at the PQL. (Use datum without qualification.)
Qualifier for Data Within Action Limits (Usable with Qualification)		
F	The analyte was positively identified, but the associated numerical value is below the PQL.	(Not applicable)
J	The analyte was positively identified, the quantitation is an estimation.	(Not applicable)
UJ	(Not applicable)	The analyte was not detected; the associated numerical value is a PQL which is estimated due to deficiencies in the QC data.
Qualifiers for Data Outside of Action Limits (Unusable)		
R	The datum is unusable due to serious deficiencies in the ability to meet QC criteria.	The datum is unusable due to serious deficiencies in the ability to meet QC criteria

Notes:
1 If a combination of QC results suggest contradictory qualifiers, the following hierarchy is used to select the appropriate qualifier to assign:

R > UJ > U > F > J > (no qualifier)

PQL - Practical quantitation limit
QC - Quality control

Table 4.3
Data Quality Evaluation and Result Rejection Summary

Monitoring Well	Bromomethane	Carbon Tetrachloride	1-Chlorohexane	Dichlorodi-fluoromethane	1,1-Dichloroethene	trans-1,2-Dichloroethene	2,2-Dichloropropane	Hexachloro-butadiene	Methyl tert-Butyl Ether	Methylene	Naphthalene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	Trichlorofluoro-methane	1,3,5-Trimethylbenzene
DUP01			CC	LCS										CC		
DUP02																LCS*
GMI-22-06M	CC	CC		CC											CC	
GMI-22-07M								CC								CC
LF05-5G																LCS*
SPOT35-5					LCS	LCS				LCS						
W-153	CC			LCS			CC		CC							
WHGLRW015								CC								CC
WHGLRW017			CC	LCS										CC		
WHGLTA025								CC								CC
WITCTA004										LCS						
WITCTA010					LCS			CC			CC	CC	CC			
WJETA535																LCS
Total Analyses	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Rejected Analyses	2	1	2	4	2	1	1	4	1	2	1	1	1	2	1	4 (+2)
Percent Complete	91.3	95 7	91 3	82 6	91 3	95 7	95 7	82 6	95 7	91 3	95 7	95.7	95 7	91 3	95.7	82 6

Notes
LCS The designated sample result was rejected because of a low laboratory control sample recovery (%R)
CC The designated sample result was rejected because of high continuing-calibration verification values (%D)
* The designated sample result was rejected in the original analysis The sample was reanalyzed under a secondary dilution and the original result has been replaced with a non-rejected non-detection with an elevated RL

Analyses of PE samples and reports from audits are used to provide additional information for assessing the comparability of analytical data produced among subcontracting laboratories. Historical comparability is achieved through consistent use of methods and documentation procedures throughout the project. Analytical methods have remained the same since the beginning of the Groundwater Sampling Program, with the exceptions of dissolved gases and petroleum hydrocarbons.

4.5 DATA QUALITY EVALUATION

This section describes the analytical methods and quality control program utilized for the July 2000 basewide groundwater sampling event at NAS Fort Worth JRB The analytical methods used for the analysis of the field samples are described in the QAPP (HydroGeoLogic, 2000b).

The objective of the DQE is to provide a professional review of the analytical data packages submitted by the laboratory. The DQE consists of laboratory QC data and field QC data review, to indicate which data are usable, usable with qualification, or unusable. The analytical procedures used to generate field sample data are evaluated in accordance with the general and method specific QC criteria listed in Sections 5.0, 6.0, 7.0, and 8.0 of the QAPP (HydroGeoLogic, 2000b). The DQE for each analytical procedure (or set of procedures) is presented in the subsections below. Each subsection summarizes those results which have been found to be unusable, and those results which are usable with qualification.

Some analytes will have more than one qualifier assigned due to multiple QC issues with that result. In such cases, the qualifier with the highest priority is assigned; the other qualifiers are considered to be overridden and are not discussed in the method DQE. The exceptions to this are those detections that are considered field or laboratory artifacts. These results have a "U" qualifier applied prior to any other qualification; subsequent qualification is applied to the affected results as if they were non-detections.

Note that some samples have more than one analysis, due to reanalysis for dilution or QC issues. Where multiple analyses are available for a sample, the DQE discusses only QC issues affecting the definitive result for each analyte in that sample. The definitive result is determined by evaluating the hierarchy of data qualifiers (with the lower priority qualifier indicating a "better" result), practical quantitation limits (PQLs), and calibrated range.

The following items of laboratory QC data are reviewed:

- Sample integrity
- Sample completeness
- Preparation and analysis holding times
- Laboratory preparation and analysis methods
- Method accuracy and precision (e.g., MS/MSDs, dilution tests)

- Laboratory performance criteria (e.g , blanks, LCS recoveries, surrogates, internal standards)
- Instrument initial and continuing calibration checks

Field QC performance is evaluated through evaluating field duplicates, field blanks, field documentation, and shipping criteria.

4.5.1 Volatile Organic Compounds

A total of 21 groundwater samples, 2 duplicate samples, and 9 field QC samples were analyzed for VOCs by method SW8260B. Of the 1,426 VOC results generated by environmental samples and duplicate samples, 30 were rejected. Overall completeness of the VOC results was calculated to be 97.9%; however, rejected data caused eight individual analytes, bromomethane (91.3%), 1-chlorohexane (91.3%), dichlorodifluoromethane (82.6%), 1,1-dichloroethene (91.3%), hexachlorobutadiene (82 6%), methylene chloride (91.3%), 1,3,5-trimethylbenzene (82.6%), and 1,2,4-trimethylbenzene (91.3%), to fail to meet the 95% completeness goal. The results for carbon tetrachloride, *trans*-1,2-dichloroethene (*trans*-1,2-DCE), 2,2-dichloropropane, methyl *tert*-butyl ether (MTBE), naphthalene, 1,2,4-trichlorobenzene, trichlorofluoromethane, and 1,2,3-trichlorobenzene each had a completeness of 95.7%, and the results for the other 46 SW8260B VOC compounds had a completeness of 100%. All data rejections in VOC results were either due to unacceptably high percent difference (%D) values associated with the continuing calibration verifications or were due to low %R in associated LCS samples. Those rejected data are presented for each sample and each affected analyte in Table 4.3.

The remaining data results are usable with qualification as described below.

The following detections have been qualified "J" due to a high %R in the associated LCSs: vinyl chloride in samples LF05-5G and DUP02; 1,1-dichloroethene in sample W-153; and 1,1-dichloroethene and *trans*-1,2-DCE in sample WITCTA004.

1,1-Dichloroethene detections have been qualified "J" in samples LF05-5G and DUP02 due to poor precision in this field duplicate pair.

Due to contamination in the associated trip blanks, methylene chloride detections have been qualified "U" in samples GMI-22-06M and HM-126.

Detected values for specific analytes have been qualified "F" in several samples due to results between the method detection limit (MDL) and PQL.

4.5.2 Metals

A total of four groundwater samples were analyzed for metals. The analyses were performed by a combination of method SW6010B and the analyte-specific methods of the SW7000A

series. All 96 metals results were found to be usable and overall completeness of the metals results is 100%, as is the completeness for each of the 24 individual analytes.

The following data results are usable with qualification as described below.

Preparation blanks, initial calibration blanks, and continuing calibration blanks exhibited occasional metals contamination. This blank contamination resulted in the following qualifications of detections as laboratory artifacts:

> Aluminum, molybdenum, and vanadium have been qualified "U" in sample WJETA535.
>
> Aluminum, manganese, and selenium have been qualified "U" in sample WITCTA017.
>
> Vanadium has been qualified "U" in sample USGS07T.

Preparation blanks, initial calibration blanks, and continuing calibration blanks exhibited occasional negative baseline drift for specific metals. This baseline drift resulted in the following qualifications of non-detections:

> Aluminum, arsenic, beryllium, cadmium, lead, and nickel have been qualified "UJ" in sample WJETA535.
>
> Aluminum, arsenic, beryllium, cadmium, and nickel have been qualified "UJ" in samples WITCTA017 and ITMW-01T.
>
> Arsenic, beryllium, cadmium, and nickel have been qualified "UJ" in sample USGS07T.

The ICP serial dilution test performed on sample USGS07T had an unacceptable result for aluminum. The aluminum detection in sample USGS07T has been qualified "J"; the aluminum non-detections in samples WITCTA017 and ITMW-01T have been qualified "UJ."

Graphite furnace atomic absorption spike recovery results were out of control for specific elements in several samples. This caused the following results to be qualified as described below:

> Antimony, chromium, and thallium non-detections were qualified "UJ" in sample WJETA535.
>
> Selenium and thallium non-detections were qualified "UJ" in sample WITCTA017.
>
> Antimony, lead, and thallium non-detections were qualified "UJ" in sample USGS07T.

Antimony, selenium, and thallium non-detections have been qualified "UJ" in sample ITMW-01T

Detected values for specific analytes have been qualified "F" in several samples due to results between the MDL and PQL.

TAB

SECTION 5.0

5.0 FIELD AND ANALYTICAL RESULTS

Monitoring well inspection observations, water level measurements, and field and laboratory analytical results for the July 2000 basewide quarterly sampling event are presented in this section.

5.1 FIELD RESULTS

5.1.1 Monitoring Well Inspections

Of the 285 monitoring wells scheduled for inspection, only 279 were actually inspected during the July 2000 quarterly sampling event. The locations of these monitoring wells are provided in Figure 5.1. Of the six monitoring wells that were not inspected, one monitoring well, WITCTA001, was paved over with asphalt; four of the monitoring wells (MW-13, MW-18, MW-58, and MW-59) have been covered over with a concrete pad and an above-ground diesel fuel tank; and one monitoring well, LF04-04, could not be located in the debris of a demolished house and is assumed to be destroyed.

5.1.2 Groundwater Elevations

Groundwater elevations were obtained during the July 2000 sampling event for 273 monitoring wells selected for water level measurements and are included in Table 5.1. The groundwater elevations could not be determined for 6 of the 279 monitoring wells for the following reasons: two monitoring wells could not be located; three did not contain any water at the time of gauging; and one monitoring well contained a dedicated bladder pump installed by Jacob's Engineering. These six monitoring wells are listed on Table 5.2, along with the monitoring wells that were not able to be inspected and the monitoring wells that have been abandoned.

Groundwater elevations measured during the July 2000 sampling events from 273 monitoring wells screened in the Terrace Alluvium were used to construct the potentiometric maps presented in Figure 5.1. In general, the regional groundwater flow direction is from west to east. Groundwater elevation varied from 620 feet above NGVD in the southwestern portion of the site to 529 feet NGVD in the eastern portion of the site during July 2000. The head gradients toward the eastern end of the site are considerably higher than those on the western portion. The groundwater gradient ranges from approximately 0.009 to 0.015 feet.

Some local variations in groundwater flow direction are reflected on the potentiometric maps. The groundwater flow direction in the Terrace Aquifer is primarily eastward towards the basin formed by the West Fork Trinity River, however, in the Landfill Area and the southern portion of the East area, groundwater flow is towards Farmers Branch Creek.

Table 5.1
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
15B	2301032.08	6963338 74	567.59	558.57
17I	2299626.67	6963642 66	578.13	565.32
17J	2299584.43	6963780.05	579 94	566.71
17K	2299799.21	6963578.34	575.47	564 21
17L	2299741 17	6963812.74	577.32	564.97
17M	2300037.62	6963761.95	574.28	563 59
BGSMW01	2299511	6964916.44	578.64	570.45
BGSMW02	2299618.19	6965006.79	577 57	565.21
BGSMW03	2299690.06	6965067 5	576 72	565 14
BGSMW04	2299589.5	6965084.53	578.49	565.55
BGSMW05	2299961 23	6965150.67	571.66	564 81
BGSMW06	2299910 09	6964981 31	576.51	565.12
BGSMW07	2299737.83	6964990.68	574.88	565 69
BSS-A	2300115.43	6965491.1	566.49	561.20
BLDG1040-1	2298699 62	6963528 01	604 27	585 40
CAR-RW7	2296407.22	6961213.98	618.96	591.26
FT08-11A	2295876.4	6962318.1	608 15	595 54
FT08-11B	2295928.5	6962030.9	608.05	595.93
FT09-12A	2295439.2	6960549.8	635.38	617 34
FT09-12B	2295697.4	6960709.3	627.36	593.60
FT09-12C	2295771.5	6960590.3	627.86	593.12
FT09-12D	2295743.4	6960887.6	627.26	593.82
FT09-12E	2295821.2	6960701.1	627.34	593.27
GMI-04-01M	2296724.6	6960930.7	613.79	--[1]
GMI-22-02M	2296187.4	6966632 9	619 13	607.92
GMI-22-03M	2298539.4	6966219.9	608.03	586.98
GMI-22-04M	2297340.5	6967250 5	610.70	590.23
GMI-22-05M	2299432.1	6966940.3	584.28	572 62
GMI-22-06M	2298186.6	6967004.5	606.84	587.89
GMI-22-07M	2298322 5	6969018.7	605.66	588 80
GMI-22-08M	2298971.5	6970323 6	606.94	589.12
HM-110	2293163.2	6963667.5	637.33	609.41
HM-111	2293265.66	6963623.55	636.49	606.70
HM-112	2293141.65	6964217.56	638.06	607.45
HM-114	2294352	6963912.1	627.77	607.80

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
HM-116	2294283.7	6966411 4	634.06	609 53
HM-117	2294274.3	6967355.4	633.32	609 83
HM-118	2294780.5	6968035.2	626 23	609 26
HM-119	2294271.8	6968726	625.04	609.97
HM-120	2295343 2	6969489	616.84	610.00
HM-121	2295279.2	6967390 2	627.66	608.31
HM-123	2295272.6	6961638.5	624.85	595.95
HM-124	2295223.3	6963957.8	623.26	607 28
HM-125	2295220.29	6965893 46	629.37	609.22
HM-126	2294300.2	6963121	622.99	606.43
HM-127	2294853 3	6961588.5	624.04	596.97
ITMW-01T	2298967.14	6961062.05	602 77	588.34
LF01-1B	2301057 01	6964700.81	560.18	545.02
LF01-1D	2301412.72	6964288.18	563 91	544.12
LF01-1E	2301174.3	6964606.03	562 11	543.97
LF01-1F	2301376 05	6964438 04	562.26	543.67
LF03-3D	2293269.12	6962056.65	625 25	612.42
LF04-01	2295382.89	6961027.72	629.16	595.16
LF04-02	2296309.1	6961113.1	623.44	591.50
LF04-04	2297165.6	6960941.6	611.95	--[2]
LF04-10	2297078.9	6960411 8	626.47	591.12
LF04-4A	2295852 98	6960300.48	625.84	611.08
LF04-4B	2296274.34	6960323.91	619 95	599.75
LF04-4C	2296593.5	6960604	612.96	591.41
LF04-4D	2296416.39	6960831.59	615 13	591.72
LF04-4E	2296411	6961036.04	618.49	591.60
LF04-4F	2296058.77	6961061.85	625.28	592.78
LF04-4G	2296658.93	6961224.13	619.75	590.75
LF05-01	2294577.8	6962728.3	621 88	601.18
LF05-02	2295278 9	6962653.1	622.61	596.32
LF05-18	2297075.4	6961555.6	611.71	590.85
LF05-19	2297461.4	6961239.9	606 05	589.38
LF05-5A	2295580.9	6961438.56	623.00	595.19
LF05-5B	2296078.25	6961901.56	597.17	590.17
LF05-5C	2295993 73	6961720.05	608.56	594.36

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
LF05-5D	2295757.04	6961740 47	611.40	595.82
LF05-5E	2295550 36	6961177 87	626.70	595 11
LF05-5G	2296536.32	6961581 32	615.28	591 51
LF05-5H	2296343 8	6961735 96	610.61	--[1]
LSA1628-1	2297802.1	6967936.2	601.67	590.81
LSA1628-2	2297846.5	6967943.3	601.93	590.64
LSA1628-3	2297791.26	6967993.08	601.73	590 71
LSA1628-14	2297896.92	6967908.3	601.60	590.22
LSA1628-15	2297860 79	6967862 87	601 35	590.24
MW-10	2300541 58	6965836 2	558.85	544 02
MW-11	2300791.96	6965706.66	558.17	530.96
MW-11A	2297057 28	6965810.34	612.17	588 85
MW-12	2300142.02	6966149.32	559.62	549.36
MW-13	2295736.39	6961035 09	620.83	--[2]
MW-18	2295389 85	6963519.14	621.19	--[2]
MW-19	2295368 85	6963512.61	611.28	592 75
MW-2	2300555 92	6965704.96	557.55	545 51
MW-3	2299750.34	6965242 67	576 48	564.45
MW-36	2299356.66	6965034.8	604.11	599.06
MW-37	2299384 99	6965061.35	590.53	581 49
MW-38	2298153 08	6965981 09	604.11	587.60
MW-39	2298171.12	6965999.01	604.12	587.74
MW-40	2298224.98	6966053.1	604 16	587.44
MW-41	2298204.57	6966088.85	604.66	587.71
MW-42	2298144.9	6966031.04	604 60	587.82
MW-5	2300138.61	6965803.45	563.69	558.77
MW-50	2295621 7	6968528 65	619.27	608.23
MW-51	2295639.96	6968536.47	619.36	608 25
MW-52	2296182.56	6964355.17	616.29	596.91
MW-53	2296200 24	6964378.18	616.75	599.97
MW-56	2296055.93	6968789 53	614.32	606.23
MW-57	2297112.98	6967217.16	613.37	601.01
MW-58	2297175.22	6966950.88	612.94	--[2]
MW-59	2297160.82	6966970.47	613.37	--[2]
MW-6	2300173.7	6965734.92	562.87	560.43

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
MW-7	2300055.24	6965967.11	567 37	558.63
MW-8	2300491 79	6965584 18	557.04	548.78
MW-9	2300329.17	6966001.96	559.54	548 56
MWMTAC-001	2296520 35	6959115.8	645 04	609.84
OT-15C	2300947.51	6963316.34	564.25	555.37
SAV-1	2300298.89	6965776 36	560 15	547 70
SAV-2	2300280 42	6965807 58	560.07	547.97
SD13-01	2300621.42	6963391.74	573 09	560 36
SD13-02	2300753.03	6963487.7	573.28	559.91
SD13-03	2300699 63	6963362 92	571 41	560 26
SD13-04	2300770.96	6963361.52	569.08	559.16
SD13-05	2300775.29	6963904.28	571.54	562 09
SD13-06	2300907.83	6963164.35	557.68	545.91
SD13-07	2301009 34	6963167.04	560 44	541 75
SPOT35-1	2296878 53	6966202.4	613.59	590.30
SPOT35-3	2296850.62	6966108.75	612.02	591.06
SPOT35-4	2296777.88	6966174.92	612.74	591.19
SPOT35-5	2296846.73	6966020.04	614 09	591.16
SPOT35-6	2296634.63	6966234.61	615.68	591.62
SPOT35-7	2296508.59	6966534.79	616 41	607.94
SPOT35-8	2296970 16	6966428.55	613 50	590.11
SPOT35-9	2296780 62	6966581.53	615.04	591.96
ST14-01	2300090.8	6963295.3	575.95	561.92
ST14-02	2300091.7	6963511.6	575 51	562.76
ST14-03	2299891.6	6964080	576.68	565.81
ST14-04	2300345.3	6963642.7	575.61	562.58
ST14-24	2299084.2	6964017.89	594 14	582.81
ST14-25	2299065 36	6964563.76	592 94	586.46
ST14-27	2300212.35	6964257.94	573.85	564.43
ST14-28	2300495.99	6963728.32	574.45	562 40
ST14-29	2300512 78	6963527.79	571.45	561.48
ST14-30	2300466.18	6963211.53	566.87	560.51
ST14-W05	2299093.85	6963726 06	593.63	584 61
ST14-W06	2299330 79	6963806.56	581.42	568.91
ST14-W07	2299393.81	6963614.61	579.96	566 18

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
ST14-W08	2299479.59	6964323.98	580 54	568.75
ST14-W09	2299550 1	6963471.69	575.54	565.67
ST14-W10	2299730.13	6963949.34	573.99	565 78
ST14-W11	2299657.97	6964128.6	576.31	567 30
ST14-W12	2299581 06	6963953.27	575.52	567.91
ST14-W13	2299776.44	6963695.16	574.49	564 31
ST14-W15	2299923 11	6963315.79	573 47	562 41
ST14-W16	2300128.3	6964064 61	573.62	564.76
ST14-W18	2300162 47	6963906.73	573 79	564.33
ST14-W19	2300203.61	6963699.8	573.31	563 08
ST14-W20	2300275.36	6964009 08	573.48	563 77
ST14-W21	2300242.02	6963417.82	572.88	562.06
ST14-W22	2301016.39	6963649.64	571.30	560.79
ST14-W23	2300410.37	6962949 06	565.60	558.14
ST14-W31	2300830.86	6963549.67	571 23	560.38
ST14-W32	2300815.07	6963239.02	564 15	559.12
USGS03T	2300610	6968704.7	575.02	570 40
USGS04T	2299178.7	6968773	604.92	--[2]
USGS06T	2297542.1	6963777 9	606 67	--[3]
USGS07T	2295246.5	6960182.5	632.43	620.54
W-153	2294096 2	6965106.3	631.57	609.14
WCHMHTA001	2293437.6	696528.17	639.08	609.20
WCHMHTA002	2294553.41	6966740 53	631.32	608 87
WCHMHTA003	2294774.14	6967153.88	631.00	608 57
WCHMHTA004	2294776.1	6967144.61	631.25	608.61
WCHMHTA005	2295397.82	6966691.19	626.95	608.04
WCHMHTA006	2295406.97	6966690.11	626.73	607 98
WCHMHTA007	2295645 39	6967105 89	623.93	607 74
WCHMHTA008	2295597.48	6967889.89	622.85	607 45
WCHMHTA009	2296395.01	6967635.29	615.55	607.37
WCHMHTA010	2296398.8	6967640.08	615 35	608.18
WCHMHTA011	2297063.01	6968490.51	605.80	592.36
WCHMHTA012	2297425.82	6967840.86	605.85	591.18
WCHMHTA013	2299786.18	6966251.26	578.26	561 01
WCHMHTA014	2294072.81	6970403.9	619.11	610.66

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
WHGLRW015	2298662.64	6960871.43	604 64	588.94
WHGLRW016	2299201 47	6961034 95	602 35	587.87
WHGLRW017	2299000.59	6960727.11	604 66	588.06
WHGLRW018	2298744.63	6960532 93	608 05	589.34
WHGLRW019	2298620.19	6960684.23	605.39	589.52
WHGLTA002	2296111.39	6962377.91	608.52	593 85
WHGLTA003	2298029.84	6961043.88	614.22	590.58
WHGLTA004	2295760.62	6962943 38	614.35	595.62
WHGLTA005	2301043.78	6963469.85	570 56	558.59
WHGLTA007	2301093.17	6963162.46	552 88	537 35
WHGLTA008	2300016 84	6963955 17	572.37	564.99
WHGLTA009	2297528.7	6965211.65	612 09	588.22
WHGLTA010	2296770.93	6965580 03	618 13	591.44
WHGLTA011	2295873.87	6968356.67	619.71	607.65
WHGLTA012	2297740	6965920 84	606.64	587.89
WHGLTA013	2297177.07	6965957.77	611.13	588 33
WHGLTA014	2297373.92	6966295.34	610.26	588.94
WHGLTA020	2299684.95	6962285.83	568 80	556.70
WHGLTA022	2297691.54	6960401.65	614.94	591.04
WHGLTA023	2298565 43	6960492.16	608 52	590.14
WHGLTA025	2298942.63	6961608.26	601.46	584.73
WHGLTA026	2297200 73	6967204 01	612 10	591.04
WHGLTA027	2297196 85	6967173.21	612.33	591.38
WHGLTA028	2297450 94	6967760.51	605.76	591.47
WHGLTA029	2298574.35	6965736.08	603.13	--[2]
WHGLTA030	2299155.33	6964327.76	589.07	585 90
WHGLTA031	2299198.98	6964366.12	592.78	585 89
WHGLTA033	2299565.05	6964665.24	581.29	568.67
WHGLTA034	2301060.21	6963889.66	570.75	561.04
WHGLTA035	2301048.39	6963823.75	571 06	561.25
WHGLTA036	2300458.39	6966001.70	554.95	544.59
WHGLTA037	2300596.51	6965905 87	555.73	540.26
WHGLTA038	2300726.46	6965829 45	556.05	--[1]
WHGLTA039	2299277.71	6964408.76	589.68	569.27
WHGLTA101	2301220.30	6964633.49	559.35	543.19

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
WHGLTA102	2301388 56	6964448 94	559.86	543 50
WHGLTA103	2301522 24	6964314.53	559.77	536 29
WHGLTA104	2301608 27	6964225.38	560.39	529.27
WHGLTA201	2298660.88	6963198.14	603.21	584.52
WHGLTA202	2298832 59	6963326.21	603 45	584.55
WHGLTA203	2298400.38	6963058.53	600.98	584.72
WHGLTA204	2298104.66	6963625 62	605.57	587 58
WHGLTA302	2294422.27	6962602 64	621 70	606.72
WHGLTA303	2294400.77	6962351.21	622.77	600 47
WHGLTA601	2297473.69	6962697 81	600.00	585.36
WHGLTA602	2297625.01	6962752 66	612.09	596 74
WHGLTA603	2297727.19	6962713.38	600.92	584.28
WHGLTA604	2297530.02	6963195.39	607 43	587 93
WHGLTA701	2295332 86	6961835.73	623.08	596.24
WHGLTA702	2295882.07	6961920.16	609 41	595.43
WHGLTA703	2295741.23	6961680.7	615.07	595.75
WHGLTA704	2295831.51	6962141 07	608.84	596 25
WHGLTA705	2296026.58	6962002.86	598.79	593.08
WHGLTA706	2296030.82	6962146.24	607.15	593.46
WHGLTA801	2295857.80	6962790.06	601.48	592.36
WHGLTA803	2296040.83	6962524.15	602.13	593.58
WHGLTA901	2299642 88	6967831 58	583.57	573.63
WHGLTA902	2299952.24	6967670.51	558 75	541.40
WHGLTA903	2300086.51	6967830.00	559.26	532.49
WHGLTA904	2300174.31	6968031.25	560 47	532.28
WHGLTA905	2299782.00	6967573 60	562.36	542.76
WHGLTA952	2299956.02	6967676.53	558.76	532.57
WHGLTA953	2300078.45	6967825 90	559.36	532.51
WHGLTA954	2300179.00	6968032.47	563.07	533.76
WITCTA001	2296446 73	6969591 01	610.85	--[4]
WITCTA002	2296135.48	6969258.49	613.36	609.19
WITCTA003	2297405.05	6969111.3	607.58	592.69
WITCTA004	2297490.47	6968938.83	606.62	592 59
WITCTA005	2298166 79	6968458.46	602.81	589.56
WITCTA006	2298261.86	6968425.94	602.76	589.38

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
WITCTA007	2298432.07	6968309.56	603.03	587.87
WITCTA008	2298030.12	6967939 66	600.62	591.41
WITCTA009	2298232 9	6967860.6	597 15	590.23
WITCTA010	2298752.18	6967693.53	600.31	585.01
WITCTA011	2297357 31	6967455.26	610.27	592.60
WITCTA012	2298224.39	6967348.77	599.93	589.09
WITCTA013	2297750.98	6967015.62	605.39	589.70
WITCTA014	2297417 51	6966903.57	611.74	590.48
WITCTA015	2298395 02	6966332 67	606 84	588 41
WITCTA016	2298061.33	6966238.29	607.85	588.71
WITCTA017	2299305.78	6967298 15	592.94	583 58
WITCTA019	2298838.01	6963107 25	600.82	585.57
WITCTA020	2296316 79	6963895.32	616.78	594.46
WITCTA021	2298718.16	6963794.4	604.19	588.32
WITCTA022	2298742.85	6963649.92	604.17	586.45
WITCTA024	2298956.02	6965971.78	604.86	587.54
WITCTA025	2299534.28	6966004.92	595.20	584 26
WITCTA026	2299480.09	6965456.85	584.37	578.66
WITCTA027	2299510.86	6965193 74	581.44	569.72
WITCTA028	2300621 25	6965160.62	558.11	547.22
WITCTA031	2299152.2	6964689 93	592.10	587.64
WITCTA032	2299195.64	6964500.67	587.37	579 98
WITCTA033	2300475.24	6964323.67	574.06	564 46
WITCTA034	2300951.49	6963956.68	571.95	562.91
WITCTA035	2299093.68	6963387.12	599.37	585.49
WITCTA037	2297784.44	6963424.04	604 19	588.84
WITCTA039	2295415.41	6962339.77	619.47	597.72
WITCTA040	2299514.54	6963259.78	579.03	565 85
WITCTA041	2299642 1	6963168.75	577.97	563.24
WITCTA042	2299653 16	6963108.38	576.76	563.05
WITCTA043	2299724 86	6963110.05	576.72	563.07
WITCTA044	2299836	6963055.72	575.76	562.23
WITCTA057	2295952 51	6961308.78	624.74	594.46
WJETA530	2296533.87	6959546.93	639.39	602.97
WJETA534	2296341.54	6958941.15	647.38	613 87

Table 5.1 (continued)
Groundwater Elevations for July 2000

Monitoring Well	Coordinates		Top of Casing Elevation (ft above msl)	Groundwater Elevation (ft above msl)
	Easting	Northing		
WJETA535	2296794.44	6959722.27	634.61	599.87
WP07-10A	2295807 3	6961290	626 50	594.76
WP07-10B	2296040.4	6961277.5	624.22	592.63
WP07-10C	2296062 4	6961575 6	617.18	593.29

Notes:
[1] Monitoring well is dry
[2] Monitoring well was not found.
[3] Groundwater elevation could not be measured; monitoring wells contains Jacobs dedicated pump.
[4] Monitoring well was damaged.
Elevations are reported in feet above mean sea level (ft above msl).
-- Groundwater elevation could not be determined

Table 5.2
Monitoring Wells Not Gauged in July 2000

Well Condition	Well ID	Action
Dry Monitoring Wells	GMI-22-01M	Will gauge in January 2001
	LF05-5H	
	WHGLTA038	
Monitoring Wells Abandoned in 2000	HM-122	Remove from list
	LF04-4H	
	LF05-5F	
	MW1-16	
	MW-12A	
	MW-20	
	MW-21	
	MW-48	
	MW-49	
	MW-57B	
	SPOT25-2	
	ST14-14	
	ST14-26	
	WITCTA036	
	WITCTA057	
	WJETA531	
Monitoring Wells Abandoned by the Navy	BSS-B	Remove from list
	MW-4	
Monitoring Wells Destroyed	LF04-04	Remove from list
	MW-13	
	MW-18	
	MW-58	
	MW-59	
Monitoring Well Contained Dedicated Pump (installed by different contractor)	USGS06T	Will gauge in January 2001
Monitoring Wells Damaged	WITCTA001	Has been repaired
Unable to Locate	WHGLTA029	Will gauge in January 2001
	USGS04T	

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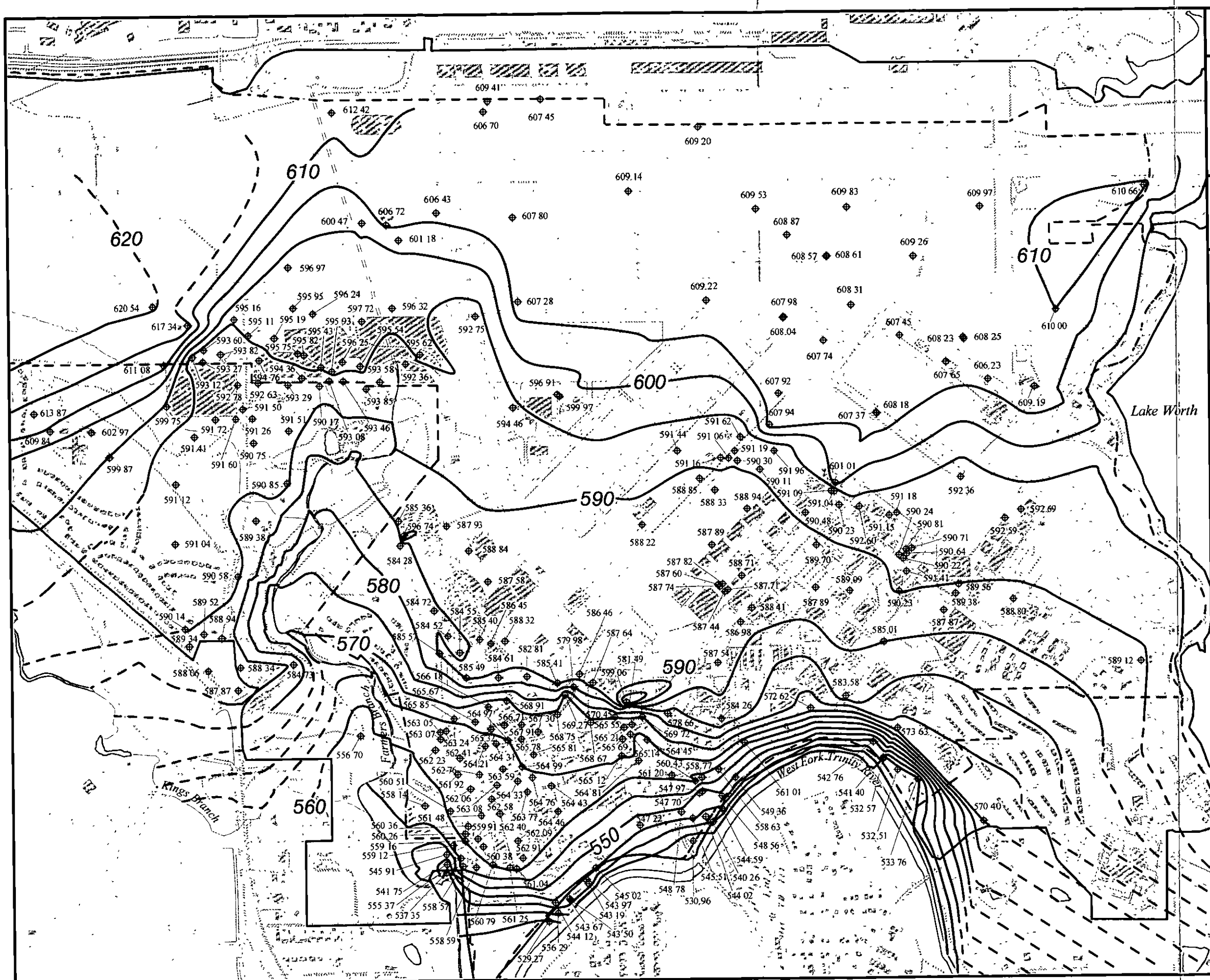

HydroGeoLogic, Inc —July 2000 Quarterly Report
NAS Fort Worth JRB, Texas

Figure 5.1

Water Level Elevations
Terrace Alluvium
July 2000

U.S. Air Force Center For Environmental Excellence

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

—600— Groundwater Elevation Contour (ft msl)

⊕ Monitoring Well

533 76 Groundwater Elevation (ft msl)

N

0 500 1000 2000

SCALE IN FEET

Filename X:\AFC001\33dcba\Report\(fig 5-01) groundwater elev july2000 apr
Project AFC001-33DCBA
Created 01/22 00 jbelcher
Revised 10 04 00 jb
Map Source HydroGeoLogic, Inc GIS Database

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5.2 CONTAMINANT EVALUATION

To facilitate discussion of contamination at NAS Fort Worth JRB, levels of contamination determined from analytical sampling were compared to several threshold values. The results of metals analyses were compared to established background concentrations (Jacobs, 1998), and the results of the organic analyses were compared to method quantitation limits (MQLs) (see Section 5.2.2). These comparisons identified locations where contamination is likely, and monitoring should be continued to provide further characterization. In addition, all data, both inorganic and organic constituent concentrations, were compared to the TNRCC Risk Reduction Standard 2 (RRS 2) values. Comparison of contaminant concentrations to their respective RRS 2 value provides a basis for risk assessment. Concentrations of contaminants that exceed their respective RRS 2 values indicate areas where continued monitoring or remedial action may be necessary.

5.2.1 Background Concentrations

Background concentrations were determined for 24 inorganic constituents at NAS Fort Worth JRB in December 1996 (Jacobs, 1998). A single groundwater sample was collected from 12 background monitoring wells using a low-stress technique to approximate filtered samples. The groundwater monitoring wells sampled, both newly installed and existing, were located up- and cross-gradient from monitoring wells known to contain VOCs and semivolatile organic compounds.

The tolerance interval (TI) method suggested by the EPA (USEPA, 1989b, 1992) was used to estimate background concentrations for the 24 inorganic constituents for comparison to compliance monitoring wells. TIs are useful for groundwater data analysis because it is important to ensure that, at most, a small fraction of the compliance monitoring wells sampled exceed a specific concentration level (USEPA, 1992). Two coefficients are associated with any TI. One is the proportion of the population the interval is supposed to contain, called the coverage. The second is the degree of confidence with which the interval reaches the specified coverage, known as the tolerance coefficient. The $UTL_{95,95}$ is the upper tolerance limit (UTL) of a TI with a coverage of 95 percent and a tolerance coefficient of 95 percent. The $UTL_{95,95}$ was determined by Jacobs (1998) as the background concentration for comparison to contaminant concentrations. These values are provided in Table 5.3.

5.2.2 Detection and Quantitation Limits

A PQL is the lowest analytical result level that can reasonably be achieved within specified limits of precision and accuracy during routine laboratory conditions. Each PQL value is higher than the associated MDL, which is the minimum concentration of a substance that can be measured and reported with 99-percent confidence the analyte concentration is greater than zero. Both MDLs and PQLs are adjusted for sample-specific conditions such as moisture, subsample mass, and dilution. Sample concentrations falling between the MDL and PQL are assigned an "F" qualifier indicating the variability of the result (HydroGeoLogic, 2000b). In

Table 5.3
Background and Risk Reduction Standard 2
Values for Inorganic Constituents in Groundwater

Metal	Background Value (µg/L)	RRS 2 Value (µg/L)	RRS 2 Value Source[1]
Aluminum	1,332	100,000	TNRCC
Antimony	2	6	TNRCC
Arsenic	4 9	50	TNRCC
Barium	587	2,000	TNRCC
Beryllium	0 3	4	TNRCC
Cadmium	0.5	5	TNRCC
Calcium	226,300	--	Essential Nutrient[2]
Chromium	6	100	TNRCC
Cobalt	8.9	6,100	TNRCC
Copper	2 8	1,300	TNRCC
Iron	224	300	Derived
Lead	1 6	15	TNRCC
Magnesium	37,800	--	Essential Nutrient[2]
Manganese	175	14,000	TNRCC
Mercury	0.1	2	TNRCC
Molybdenum	14 4	510	TNRCC
Nickel	20 4	2,000	TNRCC
Potassium	15,030	--	Essential Nutrient[2]
Selenium	7.7	50	TNRCC
Silver	0.2	200	TNRCC
Sodium	167,000	--	Essential Nutrient[2]
Tin[3]		61,000	TNRCC
Thallium	63.2	2	TNRCC
Vanadium	12	720	TNRCC
Zinc	118	31,000	TNRCC

Notes.
1 Source of all values was Texas Natural Resource Conservation Commission (TNRCC) Risk Reduction Standards 2 (30 TAC 335). Those noted as "Derived" were derived based on procedures presented in the regulations.
2 Essential Nutrient - no risk values available
3 Tin was not included in the background study.

July 1998, the TNRCC issued an Interoffice Consistency Memorandum (TNRCC, 1998a), followed in September 1998 by an Erratum Sheet (TNRCC, 1998b). The Consistency Memorandum defined a MQL as the demonstrated lower limit of the linear range for that analyte. As defined, an analyte's MQL is analogous to the PQL reported by the laboratory without adjustment for sample-specific conditions. The Erratum Sheet also defined an analyte sample quantitation limit as that analyte's MDL adjusted for sample specific conditions. Because a background concentration for organic compounds is not appropriate, the MQL is used for comparison purposes.

5.2.3 Risk Reduction Standard 2

RRS 2 values are the chemical-specific cleanup levels for remediation of groundwater contaminated by a release(s) from a SWMU or AOC These values are established from health-based standards and criteria (Texas and/or Federal) pursuant to TNRCC Regulations, 30 Texas Administrative Code (TAC) 335.551-335.569. If the PQL and/or background concentration for a given chemical is greater than the RRS 2 level, either the PQL or the background value, whichever is greater, is to be used for determining compliance with requirements of the groundwater remediation. If RRS 2 values are not available or do not provide appropriate protection for human health or the environment, cleanup levels based on other numeric criteria, referred to as medium specific concentrations (MSCs), must be established. Formulas to develop MSCs, based on exposure factors and pathways and chemical-specific toxicity, are provided in 30 TAC 335.558 (i.e., MSCs for RRS 2). RRS 2 values for inorganic and organic compounds are provided in Table 5.3 and Table 5.4, respectively.

5.3 ANALYTICAL RESULTS

Of the 19 monitoring wells proposed for analytical sampling in the GSAP, all of the monitoring wells were sampled during the July 2000 event, plus two additional monitoring wells. A complete listing of the analytical results from the July 2000 sampling event is provided in Table B.1 of Appendix B.

5.3.1 Volatile Organic Compounds

A total of 21 monitoring wells were sampled for VOCs during the July 2000 basewide sampling event using EPA Analytical Method SW8260B. The VOCs detected above PQLs in the monitoring wells during this sampling event are presented in Table 5.5. Locations of the monitoring wells are provided in Figure 3.1. Chlorinated solvents and their daughter products were detected in groundwater samples collected from 15 of the 21 monitoring wells sampled during the July 2000 sampling event.

Tetrachloroethene (PCE) was detected in groundwater samples collected from 6 of the 21 monitoring wells. These monitoring wells are identified on Figure 5.2. Positive PCE sample

Table 5.4
Risk Reduction Standard 2 Values for Volatile Organic Compounds in Groundwater

VOC	RRS 2 Value (µg/L)	RRS 2 Value Source[1]
1,1-Dichloroethane	10,000	TNRCC
1,1-Dichloroethene	7	TNRCC
2-Methylnaphthalene	4,100	TNRCC
Benzene	5	TNRCC
Bis(2-Ethylhexyl)phthalate	6	TNRCC
Bromodichloromethane	100	TNRCC
Chlorobenzene	100	TNRCC
Chloroform	100	TNRCC
cis-1,2-Dichloroethene	70	TNRCC
Ethylbenzene	700	TNRCC
Isopropylbenzene (cumene)	10,000	TNRCC
m-Xylene & *p*-xylene	10,000	Derived
Methyl *tert*-butyl ether	1,000	TNRCC
n-Butylbenzene	1,000	Derived
n-Propylbenzene	10,000	Derived
Naphthalene	2,000	TNRCC
o-Xylene	10,000	TNRCC
Isopropylbenzene	10,000	TNRCC
p-Isopropyltoluene (*p*-cymene)	1,000	Derived
Sec-Butylbenzene	1,020	Derived
tert-Butylbenzene	1,020	Derived
Tetrachloroethene (PCE)	5	TNRCC
Toluene	1,000	TNRCC
trans-1,2-Dichloroethene	100	TNRCC
Trichloroethene (TCE)	5	TNRCC
Trichlorofluoromethane	31,000	TNRCC
1,2,4-Trimethylbenzene	5,100	Derived
1,3,5-Trimethylbenzene	5,100	Derived
Vinyl chloride	2	TNRCC

Notes:

[1] Source of all values was Texas Natural Resource Conservation Commission (TNRCC) Risk Reduction Standards 2 (30 TAC 335). Those noted as "Derived" were derived based on procedures presented in the regulations.

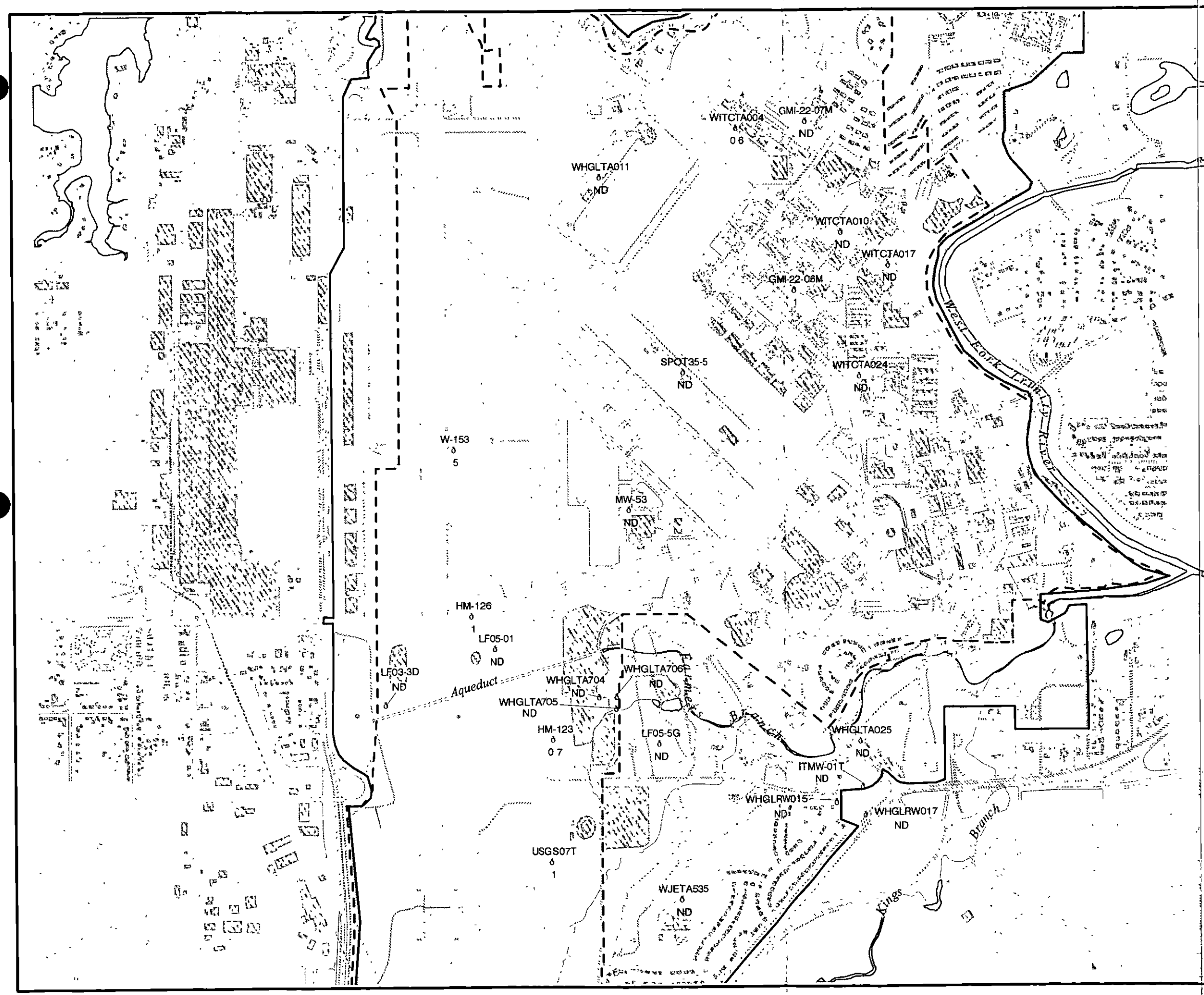
Table 5.5
Detections of Volatile Organic Compounds Above Practical Quantitation Limit in TCE Plume Monitoring Wells Sampled

Well	Analyte	Result (µg/L)
GMI-22-06M	1,1-Dichloroethene	0.5
	Chloroform	0.6
	cis-1,2-Dichloroethene	91[1]
	Tetrachloroethene (PCE)	1
	trans-1,2-Dichloroethene	6
	Trichloroethene (TCE)	540[1]
HM-123	1,1-Dichloroethane	1
	1,1-Dichloroethene	3
	Chloroform	0.7
	cis-1,2-Dichloroethene	550[1]
	Tetrachloroethene (PCE)	0.7
	trans-1,2-Dichloroethene	14
	Trichloroethene (TCE)	3,000[1]
	Trichlorofluoromethane	0 6
	Vinyl chloride	2
HM-126	1,1-Dichloroethane	0 4
	1,1-Dichloroethene	1
	Chloroform	0.6
	cis-1,2-Dichloroethene	70[1]
	Tetrachloroethene (PCE)	1
	trans-1,2-Dichloroethene	3
	Trichloroethene (TCE)	1,500[1]
ITMW-01T	*cis*-1,2-Dichloroethene	5
	Trichloroethene (TCE)	13
LF03-3D	Methyl tert-butyl ether	2
LF05-01	1,1-Dichloroethane	0 5
	cis-1,2-Dichloroethene	60[1]
	trans-1,2-Dichloroethene	4
	Trichloroethene (TCE)	6
	Vinyl chloride	79[1]
LF05-5G	1,1-Dichloroethane	0.4
	1,1-Dichloroethene	5 J[2]
	1,4-Dichlorobenzene	2
	Chlorobenzene	1
	cis-1,2-Dichloroethene	280[1,2]
	trans-1,2-Dichloroethene	28[2]
	Trichloroethene (TCE)	790[1,2]
	Vinyl chloride	19 J[2]

Table 5.5 (continued)
Detections of Volatile Organic Compounds Above Practical Quantitation Limit in TCE Plume Monitoring Wells Sampled

Well	Analyte	Result (µg/L)
MW-53	Methyl tert-butyl ether	1
	Trichloroethene (TCE)	5
SPOT35-5WG12	Isopropylbenzene (cumene)	28
	Naphthalene	44[1]
	n-Propylbenzene	36
	sec-Butylbenzene	9
	tert-Butylbenzene	2
USGS07T	Tetrachloroethene (PCE)	1
W-153	1,1-Dichloroethane	0.4
	1,1-Dichloroethene	2 J
	Chloroform	0.6
	cis-1,2-Dichloroethene	110[1]
	Tetrachloroethene (PCE)	5
	trans-1,2-Dichloroethene	1
	Trichloroethene (TCE)	730[1]
	Trichlorofluoromethane	3
WHGLRW015	*cis*-1,2-Dichloroethene	10
	Trichloroethene (TCE)	26
WHGLTA011	Trichloroethene (TCE)	8
WHGLTA025	*cis*-1,2-Dichloroethene	2
	Trichloroethene (TCE)	7
WITCTA004	1,1-Dichloroethene	1 J
	cis-1,2-Dichloroethene	19
	Tetrachloroethene (PCE)	0.6
	trans-1,2-Dichloroethene	0.8 J
	Trichloroethene (TCE)	180[1]
WITCTA010	*cis*-1,2-Dichloroethene	1
	Isopropylbenzene (cumene)	0 6
	trans-1,2-Dichloroethene	0.6
	Vinyl chloride	2
WITCTA024	*tert*-Butylbenzene	2
	Vinyl chloride	3

Notes:
[1] Analytical results were taken from the reanalysis of this sample.
[2] The result was taken from the associated field duplicate.
Underlined results represent values detected above RRS 2 levels.
J - The analyte was positively identified, but the quantitation is an estimate.
Rejected results are not included within this table.
VOCs were analyzed using EPA Method SW8260B.



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NAS Fort Worth JRB, Texas

Figure 5.2

Tetrachloroethene Concentrations
Terrace Alluvium
July 2000

U.S. Air Force Center For Environmental Excellence

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

MW-53 ⊕ NAS Fort Worth JRB Basewide Sampling Well

13 PCE Concentration (µg/L)

ND = Not Detected at Laboratory Method Detection Limit of 0 5µg/L

600 0 600 1200
SCALE IN FEET

N

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Created 06/14 00 jbelcher
Revised 09/29 00 jb
Project AFC001-33DCBA
Map Source HydroGeoLogic Inc GIS Database
Jacobs Engineering

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results ranged from 0.6 micrograms per liter (µg/L) to 5 µg/L at W-153, at the RRS 2 value of 5 µg/L.

TCE was detected in groundwater samples collected from 12 of the 21 monitoring wells at concentrations at or above the RRS 2 value of 5 µg/L.

The maximum TCE concentration detected was 3,000 µg/L in HM-123 located upgradient of Landfills 5 and 7. The lateral extent of the TCE plume did not change from the April quarterly results. The concentrations of TCE generally decreased since April. The TCE results from the July 2000 quarterly sampling event are presented in Figure 5.3.

Cis-1,2-dichloroethene (*cis*-1,2-DCE) was detected in groundwater samples collected from 11 of the 21 monitoring wells, five of which contained concentrations at or above the RRS 2 value of 70 µg/L. The maximum detection of 550 µg/L was found in the sample collected from HM-123. *Cis*-1,2-DCE results from the July 2000 quarterly sampling event are presented in Figure 5.4.

Trans-1,2-DCE was detected in groundwater samples from 8 of the 21 monitoring wells sampled. Concentrations of *trans*-1,2-DCE ranged from 1 µg/L to 28 µg/L. Sample results from one monitoring well, LF05-5G, showed a concentration of 28 µg/L exceeding the RRS 2 value of 100 µg/L. These concentrations are presented in Table 5.5.

1,1-Dichloroethene was detected in groundwater samples from 6 of the 21 monitoring wells at concentrations ranging from 0.5 µg/L to 5 J µg/L. There were no detections of 1,1-Dichloroethene above the RRS 2 value of 7 µg/L.

Vinyl chloride was detected in groundwater samples from 5 of the 21 monitoring wells. Sample results from all five monitoring wells contained concentrations of vinyl chloride at or above the RRS 2 value of 2 µg/L, with the highest concentration (79 µg/L) of vinyl chloride found in the groundwater sample from monitoring well LF05-01. The remaining four monitoring wells had vinyl chloride concentrations in the groundwater ranging from 2 µg/L to 19 J µg/L. The majority of the vinyl chloride contamination was found in groundwater samples from monitoring wells located in the area near Landfill 5.

1,1-Dichloroethane was detected in five groundwater samples at concentrations ranging from 0.4 µg/L to 1 µg/L. The groundwater sample collected from monitoring well LF05-5G contained a concentration of 1,4-dichlorobenzene of 2 µg/L. Chlorobenzene was found in the groundwater sample from monitoring well LF05-5G at a concentration of 1 µg/L, respectively. Chloroform was detected in four groundwater samples at concentrations ranging from 0.6 µg/L to 0.7 µg/L. Trichlorofluoromethane was detected in two groundwater samples collected from monitoring wells HM-123 and W-153 at concentrations of 0.6 µg/L and 3 µg/L, respectively. All concentrations of these compounds were detected below their respective RRS 2 values.

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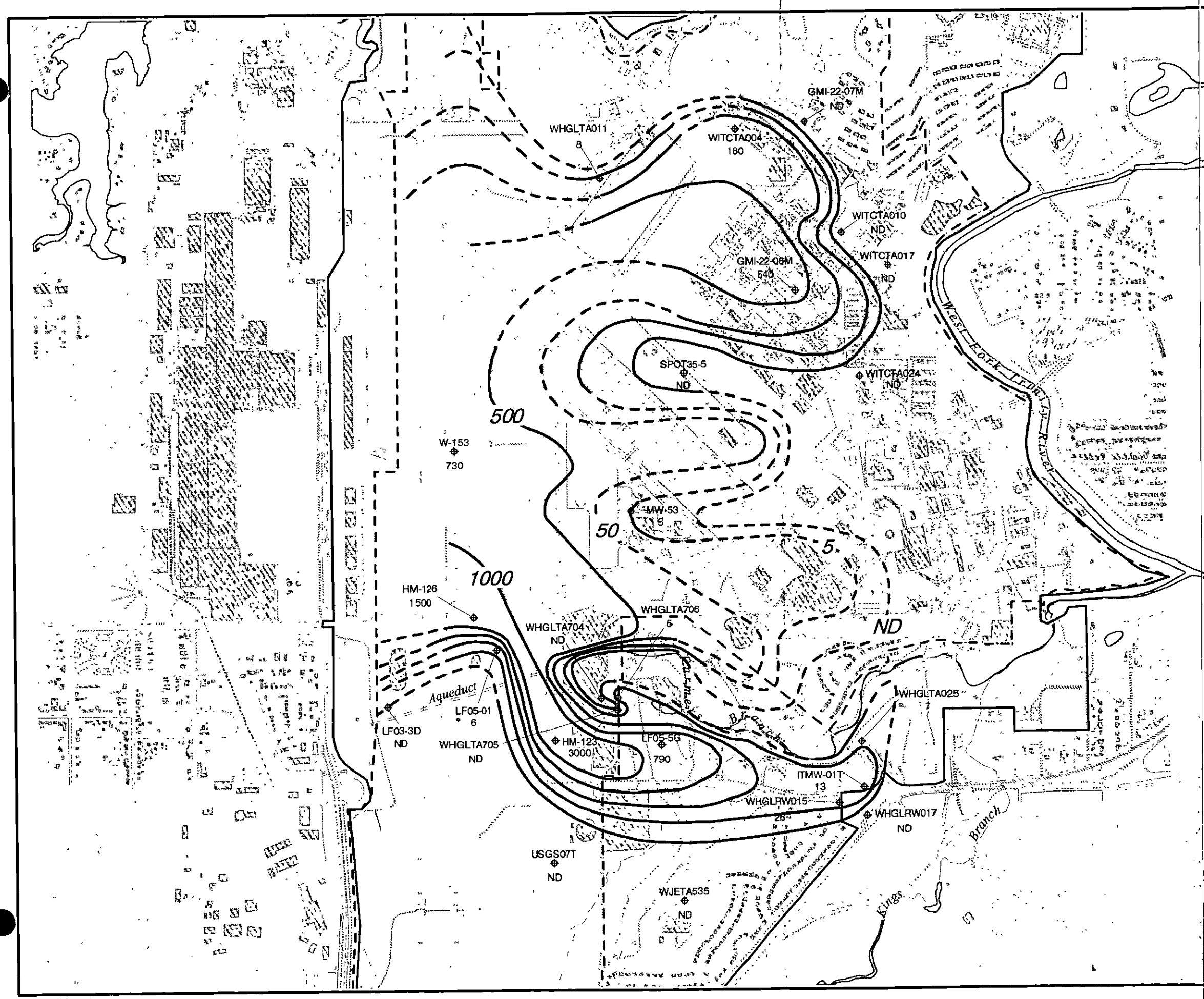

HydroGeoLogic, Inc —July 2000 Quarterly Report
NAS Fort Worth JRB, Texas

Figure 5.3

Trichloroethene Concentrations Terrace Alluvium July 2000

U.S. Air Force Center For Environmental Excellence

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

-500- TCE Concentration Contour (µg/L)

MW-53 ⊕ NAS Fort Worth JRB Basewide Sampling Well

13 TCE Concentration (µg/L)

ND = Not Detected at Laboratory Method Detection Limit of 0.5µg/L

600 0 600 1200
SCALE IN FEET

N

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Created 06/14/00 jbelcher
Revised 10/04/00 jb
Project AFC001-33DCBA
Map Source HydroGeoLogic, Inc GIS Database, Jacobs Engineering

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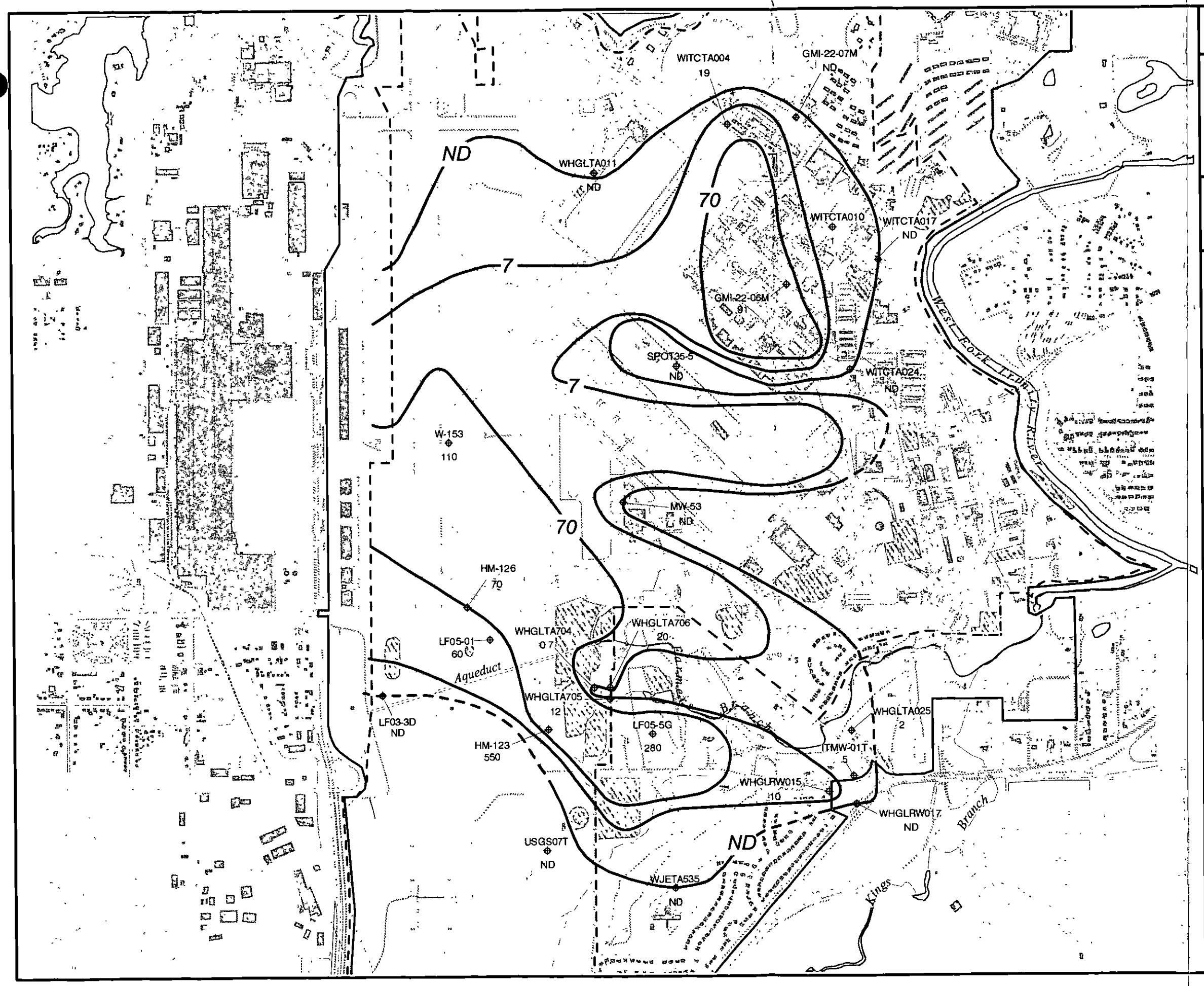

HydroGeoLogic, Inc —July 2000 Quarterly Report
NAS Fort Worth JRB, Texas

Figure 5.4

***cis*-1,2-Dichloroethene Concentrations**
Terrace Alluvium
July 2000

U.S. Air Force Center For
Environmental Excellence

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

—70— *cis*-1,2-DCE Concentration Contour (µg/L)

MW-53 ◆ NAS Fort Worth JRB Basewide Sampling Well
19 *cis*-1,2-DCE Concentration (µg/L)

ND = Not Detected at Laboratory Method Detection Limit of 0 5µg/L

N

600 0 600 1200
SCALE IN FEET

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Revised 10 03-00 jb
Project AI C.001-33DCBA
Map Source HydroGeoLogic, Inc GIS Database, Jacobs Engineering

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Fuel-related compounds, including isopropylbenzene (cumene); MTBE, naphthalene; *n*-propylbenzene; *sec*-butylbenzene; and *tert*-butylbenzene were detected in samples collected from the following monitoring wells: LF03-3D, MW-53, SPOT35-5, WITCTA010, and WITCTA024 The specific concentrations of these fuel-related compounds are presented in Table B.1 of Appendix B. Although the concentrations of these fuel-related compounds are above their PQLs, none of these compounds exceed their RRS 2 values. Out of the 21 monitoring wells, benzene was not detected in any of the groundwater samples collected during the July 2000 sampling event.

No VOCs were detected in the groundwater samples collected from perimeter monitoring wells WITCTA017 and WJETA535, or in monitoring wells GMI-22-07M and WHGLRW017.

5.3.2 Metals

Four TCE plume monitoring wells (ITMW-01T, USGS07T, WITCTA017, and WJETA535) were sampled for metals during the July 2000 quarterly sampling event. Sample results were compared to the background levels established for metals (Jacobs, 1998). Detections above background concentrations are provided in Table 5.6, and are depicted in Figure 5.5. Aluminum, manganese, and mercury were detected above background concentrations. All other metals analyzed were detected below their respective background concentrations. Of the metals detected above background, all were below the RRS 2 values.

Table 5.6
Detections of Metals Above Background Concentrations in TCE Plume Monitoring Wells Sampled

Monitoring Well	Analyte	Result (µg/L)
ITMW-01T	Manganese	228
USGS07T	Aluminum	1,440 J
WJETA535	Mercury	0.51

Notes:
J - The analyte was positively identified, the quantitation is an estimation.

5.3.3 Other Groundwater Investigations

In order to provide the most complete set of data for each quarterly report, the results of other groundwater investigations performed within the same time frame at the base are used to delineate the contaminants at the site. During this quarter, one other groundwater investigation was conducted to meet site specific monitoring objectives. Three monitoring wells were sampled as part of an ongoing RFI Investigation for Landfill 7. These monitoring wells (WHGLTA704, WHGLTA705, and WHGLTA706) were sampled for VOCs by EPA Method SW8260B. The results used in this report are validated and can be found in Table B.2 of Appendix B.

647 91

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TAB

SECTION 6.0

Table 6.2
Monitoring Wells Selected for Current Regulatory Requirements for October 2000 Basewide Sampling[1]

Area	Monitoring Well	Sampling Parameters[2] VOCS
AOC 4 Monitoring Wells	SPOT35-8	X
	WCHMHTA008	X
	WCHMHTA009	X
	WHGLTA009	X
	WHGLTA010	X
	WHGLTA012	X
	WHGLTA014	X
SWMU 68 and AOC 7 Monitoring Wells	SD13-01	X
	SD13-02	X
	SD13-04	X
	ST14-03	X
	ST14-27	X
	ST14-28	X
	ST14-W11	X
	ST14-W16	X
	ST14-W21	X
AOC 1 Monitoring Wells	BGSMW03	X
	BGSMW05	X
	BGSMW06	X
	MW-5	X
	MW-10	X
	MW-11	X
	SAV-2	X
	WHGLTA036	X
	WHGLTA037	X
	WHGLTA038	X

1 Additional monitoring wells, not listed in this table, might be sampled as part of ongoing RFI Investigations for the waste accumulation areas (WAAs) and various landfills.

2 Samples from all monitoring wells will also be tested for the following standard field parameters: temperature, pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (Eh), and turbidity.

Notes:
VOCs - Volatile organic compounds (EPA Method SW8260B)

647.94

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TAB

SECTION 7.0

7.0 REFERENCES

A.T. Kearney, 1989. RCRA Facility Assessment, Preliminary Review/Visual Site Inspection Report.

Air Force, 1997, Memorandum of Understanding for Environmental Compliance at Naval Air Station Fort Worth JRB, Carswell Field.

Air Force Center for Environmental Excellence (AFCEE), 1996. Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater.

CH2M HILL, 1984. Installation Restoration Program Records Search. Carswell Air Force Base, Texas.

Environmental Science and Engineering, Inc. (ESE), 1994. Summary of Remediation Projects at Air Force Plant 4 and Carswell Air Force Base.

HydroGeoLogic, Inc. (HydroGeoLogic), 2000a. Final Basewide Groundwater Sampling and Analysis Plan, NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. (HydroGeoLogic), 2000b. Final Basewide Quality Assurance Program Plan, NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. (HydroGeoLogic), 2000c. Final Basewide Groundwater Sampling and Analysis Program, 1999 Annual Report, NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. (HydroGeoLogic), 1997. Draft Technical Memorandum to Support Limited Site Investigation, SWMU 26-Landfill 3, NAS Fort Worth JRB, Texas. October 1997.

IT Corporation, 1997. Final Attachment 20, Corrective Action Plan Submittal, TNRCC Assessment Report Form, Base Service Station, Naval Air Station Fort Worth Joint Reserve Base, Carswell Field, Fort Worth, Texas.

Jacobs Engineering Group Inc. (Jacobs), 1998. Final Basewide Background Study, NAS Fort Worth JRB, Texas.

National Weather Service, 2000. www.nws.noaa.gov.

Parsons Engineering Science, Inc. (Parsons), 1997. Final Remedial Action Plan for Risk-Based Remediation of Site ST14 (SWMU 68), LPSTID 104819; the Former Base Refueling Area (AOC 7); the French Underdrain System (SWMU 64); and the North Oil/Water Separator (SWMU 67), Carswell AFB, NAS Fort Worth JRB, Texas.

Radian Corporation (Radian), 1989. Installation Restoration Program RI/FS, Stage 2, Draft Final Technical Report, Carswell AFB.

Texas Natural Resource Conservation Commission (TNRCC), 1998a. Interoffice Memorandum Implementation of the Existing Risk Reduction Rule.

Texas Natural Resource Conservation Commission (TNRCC), 1998b. Erratum Sheet to the July 23, 1998 Memorandum.

Texas Natural Resource Conservation Commission (TNRCC), 1995. Letter from Paul Lewis, TNRCC, to Ohlen Long, AFBDA, "Determination of a Need for an RFI and Current Condition Report," March 2.

Texas Water Commission, 1991. RCRA Hazardous Waste Permit Part B (HW-50289).

U.S. Environmental Protection Agency (USEPA), 1992. Office of Solid Waste, Permits and State Programs Division. Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance.

U.S. Environmental Protection Agency (USEPA), 1989a. RCRA Facility Assessment

U.S. Environmental Protection Agency (USEPA), 1989b. Office of Solid Waste, Permits and State Programs Division. Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities. Interim Final Guidance. EPA/530-SW-89-026.

U.S. Geological Survey (USGS), 1996. Hydrogeology at Air Force Plant 4 and Vicinity and Water Quality of the Paluxy Aquifer, Fort Worth, Texas, Water Resources Investigations Report 96-4091.

TAB

APPENDIX A

APPENDIX A.1

MONITORING WELL INFORMATION

July 2000 Well Gauging and Inspection

WELL IDENTIFICATION	Previous Seal	Current Seal	DEPTH TO WATER (feet from TOC)	TOTAL DEPTH (feet from TOC)	DATE	TIME	MP HEIGHT ABOVE/ BELOW GROUND ELEVATION (Feet)	CASING DIAMETER (inches)	PID READINGS (ppm)		WELL CONDITION										COMMENTS
									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP	SAMPLER ID	
15B	lock	0438816	9 02	12 41	7/18/00	0850	+3 61	2	0	4 3	✓	✓	none	none	NA	NA	NA	✓	✓	NH & DLM	
17I	lock	0438850	12 81	19 78	7/18/00	1303	+2 60	2	0	5 1	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	
17J	lock	0438849	13 23	21 08	7/18/00	1343	+2 1	2	0	0	none	✓	none	none	NA	NA	NA	✓	✓	NH & DLM	
17K	lock	0438841	11 26	18 59	7/18/00	1300	+1 14	2	0	5 4	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	
17L	lock	0438844	12 35	20 91	7/18/00	1316	+2 35	2	0	5 9	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	
17M	0180719	0438836	10 69	17 78	7/18/00	1140	+1 13	2	0	0 2	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
BGSMW01	none	0438810	8 19	23 11	7/17/00	1535	-0 38	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
BGSMW02	0402370	0180739	12 36	20 99	7/17/00	1443	-0 48	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
BGSMW03	0194375	0180740	11 58	21 21	7/17/00	1428	-0 41	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
BGSMW04	0402365	0194485	12 94	23 5	7/17/00	1450	-0 65	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
BGSMW05	0194439	0194460	6 85	12 57	7/17/00	1458	-0 38	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
BGSMW06	0194440	0180723	11 39	16 98	7/17/00	1508	-0 53	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
BGSMW07	0194167	0194486	9 19	18 01	7/17/00	1435	-0 32	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
BSS-A	none	0402355	5 29	10 28	7/17/00	1005	-0 39	2	0	0	NA	NA	none	none	✓	✓	✓	none	✓	NH & DLM	No place for lock or custody seal
BUILDING1040-1	0402326	0438860	18 87	19 68	7/18/00	1420	-0 47	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
CAR-RW07	none	none	27 70	33 61	7/20/00	1030	-0 65	6	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
FT08-11A	0180705	0438615	12 61	17 56	7/18/00	0900	+3 27	2	0	0	✓	✓	none	poor	NA	NA	NA	✓	✓	CW & JH	PVC well cap
FT08-11B	0180702	0438618	12 12	16 97	7/18/00	0915	+4 3	2	0	0	✓	no hinge	none	none	NA	NA	NA	none	✓	CW & JH	PVC well cap
FT09-12A	lock	0438622	18 04	27 85	7/18/00	1010	+3 75	2	0	0	loose	no hinge	none	none	NA	NA	NA	✓	✓	CW & JH	Bumper post tipped, hinge broken, Dedicated bailer
FT09-12B	0194065	0438627	33 76	37 63	7/18/00	1055	+1 75	2	0	25	✓	no hinge	none	none	NA	NA	NA	✓	✓	CW & JH	PVC well cap
FT09-12C	0481647	0438625	34 74	39 44	7/19/00	1000	+2 35	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	
FT09-12D	lock	0438628	33 44	36 99	7/18/00	1100	+2 35	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	PVC well cap
FT09-12E	0194325	0438629	34 07	38 58	7/18/00	1105	+2 91	2	0	0	✓	✓	none	poor	NA	NA	NA	✓	✓	CW & JH	PVC well cap
GMI-04-01M	lock	0180788	DRY	19 98	7/17/00	1300	+2 39	2	0	4 4	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	Bailer in well
GMI-22-02M	lock	0438898	11 21	--	7/19/00	0958	-0 25	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM	Dedicated pump
GMI-22-03M	lock	0438806	21 05	--	7/17/00	1630	+2 59	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
GMI-22-04M	01807371	0438716	20 47	25 27	7/19/00	1132	+2 14	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
GMI-22-05M	lock	0438820	11 66	13 77	7/17/00	1605	+2 51	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
GMI-22-06M	019486	0438807	18 95	26 55	7/17/00	1650	+2 24	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
GMI-22-07M	lock	0438712	16 86	23 29	7/17/00	1215	+2 29	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump, Silty
GMI-22-08M	0194487	0402351	17 82	22 46	7/17/00	1140	+2 39	2	0	0	✓	✓	none	✓	✓	✓	✓	✓	✓	NH & DLM	
HM-110	0194035	0438649	27 92	35 37	7/19/00	0920	-0 70	4	0	0	NA	NA	✓	poor	✓	✓	✓	none	✓	CW & JH	Minimal Pad
HM-111	none	none	29 79	47 54	7/19/00	0915	-0 35	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	Minimal Pad
HM-112	lock	lock	30 61	47 62	7/19/00	0930	-0 65	4	0	54 7	NA	NA	✓	none	NA	✓	✓	✓	✓	CW & JH	
HM-114	none	0194477	19 97	35 57	7/20/00	1130	-0 35	4	0	2 6	NA	NA	✓	none	NA	✓	✓	none	✓	NH & DLM	
HM-116	0194428	0438643	24 53	31 38	7/18/00	1700	-0 6	4	0	0	NA	NA	✓	✓	NA	✓	✓	none	✓	CW & JH	
HM-117	lock	lock	23 49	38 5	7/18/00	1810	-0 45	4	0	0	NA	NA	✓	none	stripped	✓	✓	✓	✓	CW & JH	Lock frozen
HM-118	lock	lock	16 97	26 25	7/18/00	1740	-0 3	4	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	Minimal Pad
HM-119	lock	lock	15 07	28 69	7/18/00	1800	-0 4	4	0	0	NA	NA	✓	✓	stripped	✓	✓	✓	✓	CW & JH	Minimal Pad
HM-120	lock	0438792	6 84	17 71	7/19/00	1434	-4 70	4	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM	
HM-121	lock	lock	19 35	30 3	7/19/00	1620	-0 3	4	0	0	NA	NA	✓	none	stripped	✓	✓	✓	✓	CW & JH	
HM-123	0180761	0438636	28 9	38 38	7/18/00	1445	-0 4	4	0	0	NA	NA	none	✓	✓	✓	none	none	✓	CW & JH	Dedicated pump
HM-124	lock	lock	15 98	24 27	7/19/00	1200	-0 4	4	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	CW & JH	Minimal Pad
HM-125	0194056	0438771	20 15	33 02	7/19/00	1535	-0 27	4	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	

July 2000 Well Gauging and Inspection

WELL IDENTIFICATION	Previous Seal	Current Seal	DEPTH TO WATER (feet from TOC)	TOTAL DEPTH (feet from TOC)	DATE	TIME	MP HEIGHT ABOVE/ BELOW GROUND ELEVATION (Feet)	CASING DIAMETER (inches)	PID READINGS (ppm)		WELL CONDITION								WELL CAP	SAMPLER ID	COMMENTS
									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS			
HM-126	none	none	16 56	35 82	7/20/00	0930	-0 65	4	0	0	NA	NA	none	none	✓	✓	✓	none	✓	NH & DLM	
HM-127	none	none	27 07	37 64	7/18/00	1555	-0 5	4	0	0	NA	NA	✓	✓	stripped	✓	none	none	✓	CW & JH	
ITMW-01T	none	none	14 43	21 63	7/17/00	1610	-0 24	4	0	2	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	PVC well cap
LF01-1B	none	0438865	15 16	19 65	7/18/00	1600	-0 36	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	
LF01-1D	0194382	0438829	19 79	28 08	7/18/00	0930	+3 03	2	0	0	✓	✓	none	none	NA	NA	NA	none	✓	NH & DLM	Dedicated pump
LF01-1E	0194438	0438659	18 14	32 01	7/19/00	1406	+2 14	2	0	5 1	fallen	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF01-1F	0194432	0438660	18 59	32 47	7/19/00	1414	+2 38	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	
LF03-3D	0180751	0438638	12 83	17 73	7/18/00	1520	+1 95	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF04-01	lock	0438621	34 00	41 34	7/18/00	1000	+2 47	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	CW & JH	
LF04-02	0194420	0180783	31 94	38 11	7/17/00	1028	+2 19	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	CW & JH	
LF04-10	0194311	0438648	35 35	48 25	7/19/00	0925	-0 4	2	0	0	NA	NA	none	✓	stripped	✓	✓		✓	CW & JH	Dedicated pump
LF04-4A	lock	0180787	14 76	24 94	7/17/00	1134	+1 25	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	Dedicated pump
LF04-4B	lock	0180786	20 20	25 21	7/17/00	1128	+1 25	2	0	2 2	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	PVC well cap
LF04-4C	lock	0180785	21 55	27 69	7/17/00	1110	+2 05	2	0	2 4	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	Dedicated pump
LF04-4D	lock	0180777	23 41	27 74	7/17/00	1055	+2 11	2	0	5 4	✓	✓	none	poor	NA	NA	NA	✓	✓	CW & JH	PVC well cap
LF04-4E	lock	0180778	26 89	30 48	7/17/00	1050	+0 95	2	0	0	✓	hinge broken	none	none	NA	NA	NA	✓	✓	CW & JH	Bailer in well, PVC well cap
LF04-4F	lock	0438672	32 50	36 94	7/20/00	1000	+2 10	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF04-4G	lock	0438673	29 00	32 57	7/20/00	1020	+2 24	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF05-01	lock	0438641	20 70	27 50	7/18/00	1615	+2 37	2	0	0	✓	✓	none	✓	NA	NA	NA	✓		CW & JH	Dedicated pump
LF05-02	lock	0438634	26 29	28 47	7/18/00	1415	+2 4	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF05-18	0194310	0180797	20 86	23 50	7/17/00	1445	-0 3	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	CW & JH	Lock frozen
LF05-19	none	0180798	16 67	19 92	7/17/00	1318	-0 34	2	0	14 4	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
LF05-5A	0194371	0438609	27 81	30 35	7/18/00	0950	+3 78	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	
LF05-5B	0194385	0180779	7 0	12 44	7/17/00	0935	+3 04	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	
LF05-5C	0194380	0438631	14 2	21 15	7/18/00	1350	+1 73	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	PVC well cap
LF05-5D	0194368	0438608	15 58	20 94	7/18/00	0940	+1 5	2	0	0	✓	✓	none	none	NA	NA	NA	none	✓	CW & JH	
LF05-5E	0194302	0438610	31 59	35 5	7/18/00	0955	+2 44	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	Casing is cracked
LF05-5G	lock	0438647	23 77	30 92	7/19/00	0800	+2 63		0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	Dedicated pump
LF05-5H	lock	0180782	DRY	16 56	7/17/00	0955	+2 17	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	CW & JH	PVC well cap
LSA1628-1	0180712	04022353	10 86	19 48	7/17/00	1020	-0 46	4	0	565	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Casing is uneven
LSA1628-14	0194257	0402357	11 38	16 02	7/17/00	1032	-0 25	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
LSA1628-15	0194152	0402356	11 11	17 01	7/17/00	1025	-0 35	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
LSA1628-2	none	0438718	11 29	19 08	7/19/00	1152	-0 73	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Red ants in well
LSA1628-3	none	0438719	11 02	17 96	7/19/00	1150	-0 49	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
MW-10	0194499	0194458	14 83	33 73	7/17/00	0906	-0 21	4	0	0	NA	NA	none	✓	replace	replace	replace	none	✓	NH & DLM	
MW-11	0194397	0180727	27 21	33 73	7/17/00	0903	-0 25	4	0	0	NA	NA	none	repair	replace	replace	replace	none	✓	NH & DLM	Black widow in well casing
MW-11A	0402323	0438899	23 32	27 19	7/19/00	0948	-0 17	4	0	115	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-12	none	0180729	10 26	27 38	7/17/00	0928	-0 13	4	0	0	NA	NA	✓	✓	replace	replace	replace	none	✓	NH & DLM	Heavily damaged
MW-19	0481699	0438655	18 53	19 6	7/19/00	1145	-0 65	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
MW-2	lock	0180726	12 04	49 15	7/17/00	0920	-0 35	4	0	0	NA	NA	none	repair	replace	replace	replace	✓	✓	NH & DLM	Heavily damaged
MW-3	0194168	0180724	12 03	22 15	7/17/00	1422	-0 36	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-36	0194165	0438802	5 05	20 16	7/17/00	1611	-0 24	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-37	0194166	0438804	9 04	20 29	7/17/00	1606	-0 34	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-38	0194255	0438885	16 51	18 95	7/19/00	0900	-0 26	4	0	4 9	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	

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									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP	SAMPLER ID	
MW-39	0194254	0438886	16 38	18 96	7/19/00	0855	-0 33	4	0	436	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-40	0194155	0438889	16 72	19 82	7/19/00	0850	-0 2	4	0	9 7	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-41	0194158	0438882	16 95	20 24	7/19/00	0906	-0 39	4	0	750	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	ABONDONDED IN 2000
MW-42	none	0438887	16 78	19 49	7/19/00	0902	-0 34	4	0	427	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-5	0194383	0194491	4 92	8 15	7/17/00	0947	+2 34	4	0	0	none	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	
MW-50	none	0438795	11 04	14 31	7/19/00	1415	-0 25	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
MW-51	lock	0438796	11 11	15 08	7/19/00	1410	-0 2	4	0	0	NA	NA	none	repair	replace	replace	replace	✓	✓	NH & DLM	
MW-52	none	0438658	19 38	19 55	7/19/00	1240	-0 2	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
MW-53	0180732	0438657	16 78	19 44	7/19/00	1230	-0 65	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
MW-56	0481683	0498679	8 09	19 65	7/20/00	1645	-0 34	2	0	0	NA	NA	none	repair	replace	replace	replace	none	✓	CW & JH	Silty
MW-57	none	0438778	12 36	14 28	7/19/00	1607	-0 39	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
MW-6	lock	0402354	2 44	5 96	7/17/00	0958	-0 47	4	0	288	NA	NA	none	✓	stripped	✓	✓	✓	✓	NH & DLM	
MW-7	0194147	0194492	8 74	17 16	7/17/00	0952	-0 13	4	0	0	NA	NA	none	✓	replace	replace	replace	none	✓	NH & DLM	Well cover and security casing destroyed
MW-8	0194119	0180728	8 26	27 29	7/17/00	0910	-0 25	4	0	0	NA	NA	none	✓	replace	replace	replace	none	✓	NH & DLM	Well cover and security casing destroyed
MW-9	0194141	0194496	10 98	28 77	7/17/00	0924	-0 46	4	0	0	NA	NA	none	✓	replace	replace	replace	none	✓	NH & DLM	Well cover and security casing destroyed
MWMTAC-001	lock	0438607	35 20	43 77	7/17/00	1654	-0 3	2	0	0	NA	NA	none	✓	✓	✓	✓	frozen	✓	CW & JH	
OT-15C	0194111 & 8	0438814 & 5	8 88	15 49	7/18/00	0822	+3 38	2	0	5 6	✓	✓	none	none	NA	NA	NA	none	✓	NH & DLM	
SAV-1	0194142	0180742	12 45	19 62	7/17/00	0938	-0 25	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	TOC Damaged
SAV-2	none	0180741	12 10	18 93	7/17/00	0934	-0 47	4	0	0 4	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	TOC Damaged
SD13-01	0194351	0438825	12 73	17 39	7/18/00	0908	+2 76	2	0	40 0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
SD13-02	lock	0438824	13 37	16 38	7/18/00	0913	+2 49	2	0	0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
SD13-03	lock	0438830	11 15	16 73	7/18/00	0905	+2 65	2	0	4 2	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	
SD13-04	0180711	0438817	9 92	13 22	7/18/00	0901	+2 25	2	0	172	✓	✓	none	none	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
SD13-05	0402362	0438862	9 45	13 52	7/18/00	1543	-0 22	4	0	0	✓	✓	none	✓	✓	✓	✓	none	✓	NH & DLM	
SD13-06	lock	0438813	11 77	14 34	7/18/00	0815	+1 95	4	0	6 3	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
SD13-07	0180718	0438812	18 69	22 44	7/18/00	0808	+1 67	4	0	189	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
SPOT35-1	0194102	0438892	23 29	26 19	7/19/00	1035	-0 3	2	0	396	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
SPOT35-3	0180713	0438896	20 96	23 81	7/19/00	1028	-0 56	2	0	184	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
SPOT35-4	0194101	0438895	21 55	24 67	7/19/00	1040	-0 6	2	0	89 5	NA	NA	none	✓	stripped	✓	✓	none	✓	NH & DLM	
SPOT35-5	0180736	0438900	22 93	29 70	7/19/00	0937	-0 12	4	0	12 1	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
SPOT35-6	0180716	0438891	24 06	29 01	7/19/00	0920	-0 41	4	0	88 6	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
SPOT35-7	0402329	0438714	8 47	20 51	7/19/00	1102	-0 3	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
SPOT35-8	0194425	0438894	23 39	27 38	7/19/00	1052	-0 21	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
SPOT35-9	0402324	0438720	23 08	28 60	7/19/00	1058	-0 32	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-01	0402327	0402316	14 03	18 31	7/18/00	1025	+2 45	2	0	6 9	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	
ST14-02	0194180	0402318	12 75	19 51	7/18/00	1020	+1 82	2	0	355	✓	✓	none	none	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
ST14-03	lock	0438839	10 87	19 78	7/18/00	1135	+2 38	2	0	39 0	✓	✓	none	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
ST14-04	0481646	0438840	13 03	19 22	7/18/00	1030	+2 43	2	0	5 3	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM	Dedicated pump
ST14-24	none	0438870	11 33	16 89	7/18/00	1510	-0 8	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty
ST14-25	none	0438875	6 48	16 63	7/19/00	0740	-0 63	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty
ST14-27	0194500	0438835	9 42	17 76	7/18/00	1125	-0 66	2	0	0 2	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-28	0194430	0402315	12 05	16 95	7/18/00	1015	-0 38	2	0	234	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-29	0194192	0438818	9 97	15 57	7/18/00	1000	-0 45	2	0	234	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
ST14-30	0194130	0402320	6 36	13 94	7/18/00	1005	-0 5	2	0	6 4	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	

July 2000 Well Gauging and Inspection

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									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP	SAMPLER ID	
ST14-W05	none	0438856	9 02	16 24	7/18/00	1505	-0 57	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty
ST14-W06	0194150	0438855	12 51	22 65	7/18/00	1456	-0 57	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty
ST14-W07	0194149	0438854	13 78	24 6	7/18/00	1452	-0 46	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W08	0194087	0438868	11 79	24 89	7/18/00	1530	-0 8	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W09	0194145	0438853	9 87	20 13	7/18/00	1445	-0 5	2	0	0 7	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W10	0194163	0438842	8 21	19 53	7/18/00	1338	-0 42	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W11	0194355	0438848	9 01	17 53	7/18/00	1348	-0 65	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W12	0194139	0438843	7 61	17 63	7/18/00	1320	-0 64	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W13	none	0438845	10 18	17 08	7/18/00	1310	-0 17	2	0	4 9	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W15	0194058	0438847	11 06	18 65	7/18/00	1355	-0 59	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W16	none	0438832	8 86	19 04	7/18/00	1055	-0 75	2	0	550	NA	NA	✓	none	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
ST14-W18	0194175	0402319	9 46	17 43	7/18/00	1104	-0 33	2	0	232	NA	NA	none	none	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
ST14-W19	0194081	0438834	10 23	16 59	7/18/00	1111	-0 85	2	0	81 9	NA	NA	none	none	✓	✓	✓	none	✓	NH & DLM	
ST14-W20	0194038	0438833	9 71	15 80	7/18/00	1120	-0 52	2	0	8 8	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W21	0194356	0402317	10 82	17 53	7/18/00	1030	-0 33	2	0	29 3	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
ST14-W22	0402361	0438823	10 51	10 85	7/18/00	0925	-0 45	2	0	7 9	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
ST14-W23	lock	0438838	7 46	9 95	7/18/00	1245	-0 48	2	0	6 6	NA	NA	✓	✓	✓	✓	✓	✓	none	NH & DLM	
ST14-W31	none	0438821	10 85	13 77	7/18/00	0918	-0 55	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
ST14-W32	0194176	0438827	5 03	12 12	7/18/00	0955	+2 58	2	0	13 2	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM	
USGS03T	lock	lock	4 62	8 6	7/19/00	1540	-0 2	2	0	0	NA	NA	none	none	frozen	✓	✓	frozen	✓	CW & JH	Outer casing broken
USGS05P	0402366	0180738	40 67	91 98	7/17/00	1416	-0 43	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
USGS06P	0194050	0438656	59 58	73 97	7/19/00	1125	-0 45	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
USGS06T	lock	0438655	--	--	7/19/00	1120	-0 48	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	CW & JH	Jacobs well with dedicated pump, not gauged
USGS07P	0164063	0438623	87 65	140 5	7/18/00	1025	-0 55	2	0	0	NA	NA	none	✓	✓	✓	none	none	✓	CW & JH	
USGS07T	0194488	0438624	11 89	15 18	7/18/00	1030	-0 2	2	0	0	NA	NA	none	poor	✓	✓	none	none	✓	CW & JH	Dedicated pump
W-153	0180792	0438642	22 43	39 25	7/18/00	1645	-0 4	2	0	0	NA	NA	✓	✓	✓	✓	none	none	✓	CW & JH	Dedicated pump
WCHMHTA001	lock	0438678	29 88	46 83	7/20/00	1630	-0 45	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	Silty
WCHMHTA002	lock	0438644	22 45	42 25	7/18/00	1710	-0 55	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	
WCHMHTA003	lock	0438646	22 43	28 58	7/18/00	1715	-0 65	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	
WCHMHTA004	lock	0438645	22 64	37 72	7/18/00	1720	-0 5	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	Lock frozen
WCHMHTA005	lock	0438773	18 91	26 75	7/19/00	1523	-0 43	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	
WCHMHTA006	lock	0438772	18 75	36 51	7/19/00	1526	-0 44	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	
WCHMHTA007	0481692	0438669	16 19	32 35	7/19/00	1600	-0 3	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	CW & JH	
WCHMHTA008	0194431	0438798	15 40	24 52	7/19/00	1350	-0 37	2	0	62	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	Silty
WCHMHTA009	0194451	0438799	8 18	11 68	7/19/00	1342	-0 24	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WCHMHTA010	none	0438800	7 17	24 50	7/19/00	1335	-0 4	2	0	9 9	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WCHMHTA011	none	0438711	13 44	22 20	7/17/00	1330	-0 52	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty
WCHMHTA012	lock	0438675	14 67	18 99	7/20/00	1515	-0 40	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	CW & JH	Difficult to find, in small grassy area
WCHMHTA013	none	0194436	17 25	19 01	7/17/00	1350	-0 46	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WCHMHTA014	none	0438794	8 45	11 84	7/19/00	14 45	-0 27	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM	
WHGLRW015	0180772	none	15 7	18 33	7/17/00	1515	-0 65	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	Dedicated pump, PVC well cap
WHGLRW016	0194054	0438603	14 48	22 64	7/17/00	1558	-0 62	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLRW017	0180780	0438604	16 6	23 98	7/17/00	1615	-0 4	4	0	0	NA	NA	none	✓	✓	✓	✓	frozen	✓	CW & JH	
WHGLRW018	0402399	0438602	18 71	27 23	7/17/00	1550	-0 18	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	

July 2000 Well Gauging and Inspection

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									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP	SAMPLER ID	
WHGLRW019	0402342	0180799	15 87	23 71	7/17/00	1522	-0 18	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA002	0194396	0180781	14 67	19 97	7/17/00	0743	-0 27	2	0	0	NA	NA	none	✓	✓	✓	none	frozen	✓	CW & JH	Silty
WHGLTA003	none	0180800	23 64	29 50	7/17/00	1440	-0 25	2	0	0	NA	NA	none	✓	✓	✓	none	none	✓	CW & JH	Dedicated pump
WHGLTA004	0194269	0438651	18 73	33 52	7/17/00	0840	-0 2	2	5 5	0	NA	NA	none	✓	✓	✓	none	none	✓	CW & JH	Dedicated pump
WHGLTA005	040203	0438811	11 97	15 19	7/18/00	0758	+2 68	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	Dedicated pump, No place for lock
WHGLTA007	0180717	0438819	15 53	30 39	7/18/00	0750	-0 46	2	0	209	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
WHGLTA008	0194173	0438831	7 38	15 22	7/18/00	1046	-0 41	2	0	420	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
WHGLTA009	0194481	0438884	23 87	27 94	7/19/00	0930	+2 57	2	0	3 3	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	
WHGLTA010	0194423	0438893	26 69	30 28	7/19/00	1008	+2 09	2	0	1 5	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	
WHGLTA011	0180743	0438797	12 06	17 82	7/19/00	1355	+1 8	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	Dedicated pump
WHGLTA012	0194471	0438888	18 75	23 58	7/19/00	0920	-0 58	2	0	38	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA013	0194107	0438897	22 80	25 87	7/19/00	1015	-0 45	2	0	34 4	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA014	0194424	0438883	21 32	25 56	7/19/00	0914	-0 21	2	0	5 7	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA020	0402397	0438679	12 10	14 85	7/18/00	1700	-0 35	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA022	0402397	0180789	23 9	32 65	7/17/00	1415	-0 25	2	0	5 7	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WGHLTA023	0402334	0438601	18 38	28 64	7/17/00	1540	-0 35	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WGHLTA025	0180793	0180791	16 73	21 26	7/17/00	0836	-0 25	2	0	0 6	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	Dedicated pump, Silty
WGHLTA026	0194253	0438774	21 06	27 48	7/19/00	1600	-0 51	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA027	0194252	0438775	20 95	26 40	7/19/00	1603	-0 29	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA028	none	0438780	14 29	18 63	7/19/00	1635	-0 32	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA030	none	0438872	3 17	14 06	7/19/00	0753	-0 49	2	0	1 2	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Silty
WGHLTA031	none	0180771	6 89	11 05	7/21/00	1000	-0 47	2	0	8 2	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	Silty
WGHLTA033	none	0438890	12 62	27 37	7/19/00	0803	-0 46	2	0	2 7	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA034	0194478	0438822	9 71	14 55	7/18/00	0938	-0 67	2	0	6 5	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA035	0194497	0438826	9 81	14 51	7/18/00	0943	-0 37	2	0	9 3	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WGHLTA036	0194461	0438668	10 36	23 5	7/19/00	1520	-0 5	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WGHLTA037	0194402	0438667	15 47	23 2	7/19/00	1515	-0 35	4	0	1220	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WGHLTA038	none	0438666	DRY	25 46	7/19/00	1510	-0 24	4	0	1461	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WGHLTA039	none	0438873	20 41	25 4	7/19/00	0756	-0 53	2	0	1 6	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA101	0194092	0438665	16 16	34 67	7/19/00	1455	-0 40	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA102	0194093	0438661	16 36	37 37	7/19/00	1420	-0 4	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA103	0194096	0438662	23 48	45 53	7/19/00	1425	-0 40	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA104	0402332	0438664	31 12	45 43	7/19/00	1445	-0 4	4	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA201	0194059	0438861	18 69	22 09	7/18/00	1408	-0 33	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA202	0194048	0438852	18 90	21 73	7/18/00	1415	-0 25	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Silty
WHGLTA203	0194360	0438846	16 26	17 61	7/18/00	1403	-0 28	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Dedicated pump
WHGLTA204	0194077	0438654	17 99	25 30	7/19/00	1107	-0 65	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA302	0481969	0438640	14 98	22 67	7/18/00	1605	+2 73	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	CW & JH	
WHGLTA303	0194373	0438639	22 30	22 35	7/18/00	1600	+2 75	2	0	0	✓	✓	none	none	NA	NA	NA	none	✓	CW & JH	
WHGLTA601	0180795	0438877	14 64	18 25	7/18/00	1650	-0 2	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA602	0194075	0438874	15 35	18 54	7/18/00	1705	-0 26	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WHGLTA603	0194076	0438876	16 64	20 08	7/18/00	1658	+2 13	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	NH & DLM	No place for lock
WHGLTA604	0194078	0438652	19 5	23 97	7/19/00	1030	-0 30	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	CW & JH	
WHGLTA701	0194398	0438637	26 84	34 85	7/18/00	1455	-0 25	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	

July 2000 Well Gauging and Inspection

WELL IDENTIFICATION	Previous Seal	Current Seal	DEPTH TO WATER (feet from TOC)	TOTAL DEPTH (feet from TOC)	DATE	TIME	MP HEIGHT ABOVE/ BELOW GROUND ELEVATION (Feet)	CASING DIAMETER (inches)	PID READINGS (ppm)		WELL CONDITION											COMMENTS
									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP	SAMPLER ID		
WHGLTA702	0180703	0438619	13 98	21 58	7/18/00	0925	+3 09	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	CW & JH		
WHGLTA703	0194378	0438620	19 32	28 03	7/19/00	0935	+2 45	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	CW & JH		
WHGLTA704	0180773	0438616	12 59	22 10	7/18/00	0910	+2 91	2	0	0	✓	✓	none	✓	NA	NA	NA	none	✓	CW & JH		
WHGLTA705	0180753	0438632	5 71	10 69	7/18/00	1400	-0 53	2	0	0	NA	NA	none	✓	✓	✓	none	none	✓	CW & JH		
WHGLTA706	0180752	0438633	13 69	17 96	7/18/00	1405	-0 50	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH		
WHGLTA801	0194268	0438612	9 12	13 84	7/18/00	0820	-0 35	2	0	14 4	✓	NA	none	✓	✓	✓	✓	none	✓	CW & JH		
WHGLTA803	0194265	0438613	8 55	12 32	7/18/00	0831	-0 3	2	0	0	✓	NA	none	✓	✓	✓	✓	none	✓	CW & JH		
WHGLTA901	0194448	0180735	9 94	22 18	7/17/00	0852	+1 9	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA902	0194450	0180745	17 35	23 88	7/17/00	0838	+3 0	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA903	0194388	0180747	26 77	43 77	7/17/00	0830	+2 73	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA904	0194446	0180748	28 19	37 26	7/17/00	0820	--	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA905	0194393	0194495	19 60	30 21	7/17/00	0848	2 81	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA952	0402306	0180744	26 19	57 64	7/17/00	0840	+2 98	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA953	0194452	0180746	26 85	57 93	7/17/00	0832	+2 58	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WHGLTA954	0194457	0180749	29 31	57 78	7/17/00	0823	2 66	2	0	0	✓	✓	✓	✓	NA	NA	NA	✓	✓	NH & DLM		
WITCTA002	lock	0438791	4 17	7 40	7/19/00	14 12	-0 27	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	Silty	
WITCTA003	none	0438793	14 89	23 53	7/19/00	1500	-0 38	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA004	0180733	0438717	14 03	18 49	7/19/00	1325	-0 26	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA005	lock	0438715	13 25	18 87	7/19/00	1120	-0 31	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA006	none	0438713	13 38	18 43	7/19/00	1123	-0 34	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA007	0402322	0402359	15 16	22 49	7/17/00	1158	-0 28	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA008	lock	0402358	9 21	14 21	7/17/00	1045	-0 37	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA009	lock	0402360	6 92	12 71	7/17/00	1052	-0 45	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA010	0180721	0180722	15 30	18 47	7/17/00	1210	-0 31	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA011	lock	0402352	17 67	23 65	7/17/00	1110	-0 25	2	0	0	NA	NA	✓	poor	✓	✓	✓	✓	✓	NH & DLM		
WITCTA012	none	0438677	10 84	16 92	7/20/00	1440	-0 53	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH		
WITCTA013	lock	0438776	15 69	21 15	7/19/00	1645	-0 46	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	Dedicated pump	
WITCTA014	lock	0438779	21 26	24 34	7/19/00	1625	-0 23	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA015	none	0438801	18 43	25 60	7/17/00	16 35	-0 47	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA016	lock	0438881	19 14	--	7/19/00	0840	-0 45	2	0	0 1	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM	Dedicated pump	
WITCTA017	0180725	0438777	9 36	13 51	7/17/00	1700	-0 21	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA019	lock	0438857	15 25	19 34	7/18/00	1433	-0 31	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA020	lock	lock	22 32	25 51	7/19/00	1215	-0 43	2	0	0	NA	NA	none	✓	✓	✓	none	✓	✓	CW & JH		
WITCTA021	none	0438858	15 87	24 00	7/18/00	1430	-0 55	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA022	none	0438859	17 72	23 43	7/18/00	1426	-0 72	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA024	0180731	0438790	17 32	23 34	7/17/00	1619	-0 38	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		
WITCTA025	lock	0194387	10 94	12 30	7/17/00	1400	-0 27	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA026	lock	0194494	5 71	9 50	7/17/00	1410	-0 42	2	0	0	NA	NA	✓	poor	✓	✓	✓	✓	✓	NH & DLM		
WITCTA027	lock	0194493	11 72	22 93	7/17/00	1405	-0 65	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA028	0402363	0194459	10 89	14 81	7/17/00	1515	-0 67	2	0	0	NA	NA	✓	poor	✓	✓	✓	none	✓	NH & DLM		
WITCTA031	lock	0438802	4 46	6 85	7/17/00	1555	-0 29	2	0	0	NA	NA	none	✓	✓	✓	✓	✓	✓	NH & DLM		
WITCTA032	lock	0438869	7 39	12 64	7/18/00	1521	-0 34	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	Silty	
WITCTA033	lock	0438837	9 60	13 79	7/18/00	1145	-0 43	2	0	0 2	NA	NA	✓	✓	✓	✓	✓	✓	✓	NH & DLM	Silty	
WITCTA034	none	0438863	9 04	13 04	7/18/00	1550	-0 54	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM		

July 2000 Well Gauging and Inspection

WELL IDENTIFICATION	Previous Seal	Current Seal	DEPTH TO WATER (feet from TOC)	TOTAL DEPTH (feet from TOC)	DATE	TIME	MP HEIGHT ABOVE/ BELOW GROUND ELEVATION (Feet)	CASING DIAMETER (inches)	PID READINGS (ppm)		WELL CONDITION									SAMPLER ID	COMMENTS
									PID BZ	PID TOC	BUMPER POSTS	SECURITY BOX	ID PLATE	PAD CONDITION	BOLTS	MANHOLE COVER	MANHOLE GASKET	LOCKS	WELL CAP		
WITCTA035	none	0438867	13 88	18 50	7/18/00	16 25	-0 73	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA037	lock	0438653	15 35	20 90 *	7/19/00	1045	-0 25	2	0	0	NA	NA	✓	✓	✓	✓	✓	✓	✓	CW & JH	
WITCTA039	0194392	0438635	21 75	24 54	7/18/00	1425	-0 2	2	0	8 5	NA	NA	✓	✓	✓	✓	✓	none	✓	CW & JH	
WITCTA040	0180794	0438864	13 18	22 80	7/18/00	1605	-0 47	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA041	0194047	0438866	14 73	21 37	7/18/00	1620	-0 39	2	0	0	NA	NA	✓	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA042	0194084	0438879	13 71	19 50	7/18/00	1638	-0 23	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA043	0194083	0438878	13 65	19 18	7/18/00	1641	-0 27	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA044	0194184	0438880	13 53	--	7/18/00	1633	-0 67	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	
WITCTA046	none	0438809	3 77	7 38	7/17/00	1548	-0 68	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	NH & DLM	Silty
WITCTA048	none	0438805	3 68	8 35	7/17/00	1600	-0 42	2	0	0	NA	NA	none	✓	NA	NA	NA	none	✓	CW & JH	
WITCTA057	none	none	30 28	42 20	7/18/00	1140	+2 0	2	0	8 8	✓	✓	none	✓	✓	✓	✓	none	✓	CW & JH	
WJETA530	0194073	0438605	36 42	44 19	7/17/00	1637	-0 35	2	0	0 8	NA	NA	none	loose	✓	✓	✓	✓	✓	CW & JH	
WJETA534	lock	0438676	33 51	39 85	7/20/00	1248	-0 42	2	0	0	NA	NA	none	✓	✓	✓	✓	none	✓	CW & JH	Dedicated pump
WJETA535	none	0438606	34 74	42 56	7/17/00	1640	-0 25	2	0	0	NA	NA	none	loose	✓	✓	✓	✓	✓	CW & JH	
WP07-10A	none	0438630	31 74	37 74	7/18/00	1135	+2 3	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	Dedicated pump
WP07-10B	lock	0180784	31 59	36 93	7/17/00	0845	+3 0	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	Dedicated pump
WP07-10C	lock	0180776	23 89	32 95	7/17/00	0855	+1 88	2	0	0	✓	✓	none	none	NA	NA	NA	✓	✓	CW & JH	

Notes

BZ - Breathing zone

NA - Not Applicable

PID - Photoionization detector

TOC - Top of casing

-- - Information is not available

* - Seal cannot be attached to well cap

APPENDIX A.2

FIELD NOTES

Location NAS Fort Worth JRB Date 7.10.00 33

Project / Client July 2000 Quarterly Event

0700 Arrive at field house. Field sampling Team: Nicole Hade, Catherine Williams, Jennifer Wallace, Jim Heringer. Prepare for field sampling event. Calibrate equipment, pack vans.

1100 Health & Safety Meeting.

1210 Arrive at WITCTA004 after recieving radio from Base Ops bail water from security casing old custody seal: 0194363

PID = 3.3 ppm

DTW = below top of pump, DTpump = 12.56

pump inlet @ ~14.26

1247 Begin purging

Water stops. Attempt to lower pump to continue sampling to no avail will attempt again tomorrow after recharge.

1336 Pack up and go to SPOT35-5.

Custody seal # 0180750

1400 Arrive at GMI-22-07M

decided to hold on sampling SPOT35-5, until later

Custody seal #: 0194418

647 109

34 Location NAS Fort Worth JRB Date 7.10.00

Project / Client July 2000 Quarterly Event

PID = 0 ppm

DTW = below top of pump

pump inlet @ 18.47'

top of pump @ 16.47'

1417 Begin purging

purging is not maintained. Appears to be a controller PSI problem. Call QED for troubleshooting.

1520 Pack up & head to field office to fix controller

New custody seal: 0180730

1545 Call QED - Send compressor in.

1600 End of day

Location NAS Fort Worth JRB Date 7.11.00 35

Project / Client July 2000 Quarterly Event

0700 Arrive at field house. Calibrate equipment. Prepare for day.
0750 Health & Safety Meeting Prepare TB071100
0800 Arrive at UF05-5G
old custody seal missing - found on ground # 0194198
PID = 3.3 ppm BZ PID = 0 ppm
DTW = below top of pump Dtop of pump = 21.7
0806 Begin Purging
0810 Stop purging flowcell blocked
0840 Begin purging once again
0904 Collect Samples UF05-5GWG12
DUP02WG12
new custody seal # 0402367
0935 Arrive at WJETA535
old custody seal # 0194415
PID = 0 ppm
DTW = below top of pump Top of pump = 34.55
0945 Begin purging
1008 Collect Sample WJETA535WG12
new custody seal # 0194386
~~1030~~ 1014
1030 Arrive at GMI-22-07M
old custody seal: 0180730

647 111

'36 Location NAS Fort Worth JRB Date 7.11.00

Project / Client July 2000 Quarterly Event

PID = 0 ppm

DTW = * below top of pump DTop of pump = 16.47'

1043 Begin purging

1134 Collect Samples

GMI-22-07MWG12

GMI-22-07MWG12MS

GMI-22-07MWG12MD

new custody seal: 0194487

1205 Dispose of IDW at staging area

Break for lunch

Call HF Scientific about ordering turbidity meter parts.

1310 Head to WITCTA010

old custody seal: 0194359

PID = 0 ppm

DTW = below top of pump DTop of pump = 14.8

1340 Begin purging

1403 Collect sample WITCTA010WG12

new custody seal = 0180721

pull pump for gauging

1445 Arrive at GMI-22-06M

old custody seal: 0194414

PID = 0 ppm

DTW = below top of pump Dtop pump = 19.6'

Location NAS Fort Worth JRB Date 7.11.00 37

Project / Client July 2000 Quarterly Event

1450 Begin purging
1514 Collect Sample [GMI-22-06MW012]
pull pump
new custody seal: 0180737
1530 Dispose off IDW at staging area
1540 Pack samples for FedEx delivery
1600 Done for day

Initials

38 Location NAS Fort Worth JRB Date 7.12.00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house
0705 Prepare Trip blank TB071200
Calibrate Equipment & prepare for days sampling
0720 Health & Safety Meeting
0820 Arrive at WITCTA017
bail water from security casing
old custody seal: 0194197
PID = 0 ppm
DTW = below top of pump DtopofPump = 9.25
0835 Begin purging
0906 Collect Sample WITCTA017WG12
new custody seal: 0180725 pull pump
0935 Arrive at WITCTA024
no custody seal:
DTW = 17.35 Dtop pump = 17.6
PID = 10.5 ppm BZ = 0 ppm
0945 Begin purging
1024 Collect Sample WITCTA024WG12
new custody seal: 0180731
pull pump
Final DTW = 17.35'
1105 Arrive at MW-53
old custody seal: 0194390

Location NAS Fort Worth JRB Date 7.12.00

Project / Client July 2000 Quarterly Event

PID = 0ppm
DTW = 16.41 Dtop pump = Cannot be determined as it is a 4" well hole.
1115 Begin purging
1141 Collect Sample MW-53WG12
new custody seal: 0180732
1215 Break for lunch
1315 Arrive at USGS07T
old custody seal: 0402310
PID = 0ppm
DTW = below pump Dtop pump = 10.4'
1336 Begin purging
1427 Collect Sample USGS07T-WG12
pull pump
new custody seal: 0194488
1500 Dispose of IDW at Staging area
1515 Unload vehicles and prepare samples for shipment.
1545 Done for day

40 Location NAS Fort Worth JRB Date 7·13·00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house - calibrate equipment prepare for days sampling

0705 prepare trip blank TB071300

0740 Health & Safety Meeting conducted by Catherine Williams, LOAO VAN.

0800 Arrive at ITMW-01T & set up PID = 0.00ppm, 4" pump-Inlet = 17.1' DTW = 14.32'

0815 Begin purging well & establish flow rate at 0.2 L/min.

0845 Collect sample ITMW-01T pack van, ~~new custody # 0180743~~ gw Final DTW = 14.30' No seal 4" well

0855 PACK VAN ~~Pull pump~~ gw

0905 Head to tower to pick up radio & head to SP0735-5.

0930 Arrive at ~~SP0735-5~~ WHGLTA011 old custody seal: 0180743 PID = 0ppm DTW 11.98' TOP = 12.48'

0945 Begin purging well. Establish flow rate of 0.2 L/min

1006 Collect sample WHGLTA011

1014 pack van, pull pump. Final DTW = 12.00' TD = gw tubing length = 12.48', pump = 1.55' New custody # 0180743 Lto 1/2 of inlet

Location NAS Fort Worth JRB Date 7-13-00 41

Project / Client July 2000 Quarterly Event

1040 Arrive at SPOT35-5
old custody seal: 0402335
PID = 10.2ppm BZ = 0ppm
DTW = 22.67 Dtop pump: cannot be determined well is 4"
1050 Begin purging SPOT35-5WG12
1129 Collect ~~LWTCTA004WG12~~ GW
Rust particals in VOA vials
Pack Van, Final DTW = ~~24.50~~ 23.50
New custody # 0180736
1145 Break for lunch
1245 Head to WITCTA004
1200 Arrive at WITCTA004
old custody seal: 0180750
PID = 1.7ppm BZ = 0ppm
DTW = below top of pump DTop pump = 12.55
1310 Begin purging
1345 Collect Sample WITCTA004WG12
pull pump
new custody seal: 0180733
length of tubing = 12.55'
length of pump ½ way to inlet 6.55'
9W ~~1405~~ Arrive at LF05-01
1410 Old custody seal: 0194426

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42 Location NAS Fort Worth JRB Date 7.13.00

Project / Client July 2000 Quarterly Event

PID = 35.9 ppm BZ = 0 ppm

DTW = below top of pump DTpump = 17

1432 Begin purging

1545 Collect Sample LF05-01WG12

~~new custody~~ NH pull pump

new custody seal: 0180734

1610 Dispose of IDW at staging area

Return radio to tower

1635 Arrive at field house & prepare samples for shipment.

1645 Done for day

Sign

Location NAS Fort Worth JRB Date 7.14.00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house. Team 1 to pull dedicated pumps for next weeks gauging.

0800 Health & Safety Meeting

0815 Begin pulling pumps for gauging

Well ID	tubing length	w/ pump	~~custody seal~~
WP07-10C	23.7	26.9	
WP07-10B	26.9	30.15	
LF05-5G	21.35	24.5	
LF05-19C	14.25	17.45	
WHGLTA003	23.8	26.9	
WJETA535	34.55	37.75	
LF04-02	30.15	33.5	
LF04-4C	22.4	25.6	
ST14-W18	9.65	12.85	
WHGLTA005	9.80	13.97	
WHGLTA007	9.55	12.75	
SD13-01	12.15	15.4	
ST14-29	10.3	13.45	
ST14-02	13.3	16.45	
ST14-28	11.5	14.75	
LF01-1D	21.5	24.35	
ST14-W31	9.32	12.5	
ST14-04	12.7	15.9	

44 Location NAS Fort Worth JRB Date 7.14.00

Project / Client July 2000 Quarterly Event

ST4-W21	12.7	15.9
WHGLTA008	8.2	11.4
ST4-W11	11.62	14.84
WHGLTA203	15.25	16.95
WCHMHTA013	16.02	17.75
GMI-22-07M	16.1	19.1
ST4-03	12.15	15.35
ST4-W16	11.02	14.25
ST4-Z4	10.85	14.5
ST13-02	11.85	15.0

Dispose of IDW water at staging area.

1300 Unload van

1330 done for day

Location NAS Fort Worth JRB Date 7·17·00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house - calibrate equipment.

0730 Health & Safety Meeting

Begin groundwater elevation gauging

Well ID	Depth to Water	total depth
BSS-A	5.29	10.28
GMI-22-07M	16.86	23.29
GMI-22-08M	17.82	22.46
WITCTA008	9.21	14.21
WITCTA007	15.16	22.49
WITCTA009	6.92	12.71
WITCTA010	15.3	18.47
WITCTA011	17.67	23.65
WITCTA015	18.43	25.60
WITCTA024	~~9.36~~ 17.32	~~13.51~~ 23.34
WITCTA025	~~17.32~~ 10.94	~~23.34~~ 12.30
WITCTA026	5.71	~~12.30~~ 9.50
WITCTA027	11.72	~~9.50~~ 22.93
WITCTA028	10.89	~~22.93~~ 14.81
WITCTA031	4.46	~~14.81~~ 6.85
WITCTA017	9.36	13.51
WHGCTA901	9.94	22.19
WHGCTA902	17.35	23.38
WHGCTA903	26.77	42.11

647 121

46 Location NAS Fort Worth JRB Date 7.17.00

Project / Client July 2000 Quarterly Event

WELL ID	TOW	TD
WHGLTA904	28.19	37.26
WHGLTA905	19.60	30.21
WHGLTA952	26.19	57.64
WHGLTA953	26.85	57.93
WHGLTA954	29.31	57.78
WITCTA046	3.77	7.38
WITCTA045	3.68	8.35
MW-2	12.04	49.15
MW-3	12.03	22.15
MW-36	5.05	20.16
MW-37	9.04	20.29
13 MW-5	4.92	8.15
13 MW-6	2.44	5.96
MW-7	8.74	17.16
MW-8	8.26	27.29
MW-9	10.98	28.77
~~MW-LT-02T~~ NA		
~~OT-15C~~ NA SAV-1	12.45	19.62
SAV-2	12.10	18.93
BG-SMW01	8.19	23.11
BG-SMW02	12.36	20.99
BG-SMW03	11.58	21.21
BG-SMW04	12.94	23.5

Location NAS Fort Worth JRB Date 7.17.00 47

Project / Client July 2000 Quarterly Event

WELL ID	DTW	TD
BGSMW05	6.85	12.57
BGSMW06	11.39	16.98
BGSMW07	9.19	18.01
BGSIdiaglow-1	18.87	19.68
GMT-22-03m	21.05	34.86
GMT-22-05m	11.66	13.77
GMT-22-06m	18.95	26.55
USGS05P	40.67	91.98
LSA1628-1	10.86	19.48
LSA1628-14	11.38	16.02
LSA1628-15	11.11	17.01
MW-10	14.83	33.73
MW-11	27.21	33.73
MW-12	10.26	27.38
WCHMHTA013	17.25	19.01

1700 Done for day

647.123

48 Location NAS Fort Worth JRB Date 7.18.00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house, calibrate PID

0715 Health & Safety Meeting

0730 Begin gauging for the day.

WELL ID	DTW	TD
LOHGLTA005	11.97	15.19
LOHGLTA007	15.53	30.39
LOHGLTA008	7.38	15.22
LOHGLTA201	18.69	22.09
LOHGLTA202	18.90	21.73
LOHGLTA203	16.26	17.61
LOHGLTA601	14.64	18.25
LOHGLTA602	15.35	18.54
LOHGLTA603	16.64	20.08
LF01-1B	15.16	19.65
LF01-1D	19.79	28.08
STM-01	14.03	18.31
STM-02	12.75	19.51
STM-03	10.87	19.78
STM-04	13.03	19.22
STM-24	11.33	16.39
STM-27	9.42	17.76
STM-28	12.05	16.95
STM-29	9.97	15.57

Location NAS Fort Worth JRB Date 7.18.00

Project / Client July 2000 Quarterly Event

WellID	DTW	TD
SM4-30	6.36	13.94
SM4-W05	9.02	16.24
SM4-W06	12.51	22.65
SM4-W07	13.78	24.60
SM4-W08	11.79	24.89
SM4-W09	9.87	20.13
SM4-W10	8.21	19.53
SM4-W11	9.01	17.53
SM4-W12	7.61	17.63
SM4-W13	10.18	17.08
SM4-W15	11.06	18.65
SM4-W16	8.86	19.04
SM4-W18	9.46	17.43
SM4-W19	10.23	16.59
SM4-W20	9.71	15.80
SM4-W21	10.82	17.53
SM4-W22	10.57	10.85
SM4-W23	7.46	9.95
SM4-W31	10.85	13.77
SM4-W32	5.03	12.12
15B	9.02	12.41
17I	12.61	14.78
17J	13.23	21.08

647 125

50 Location NAS Fort Worth JRB Date 7.18.00

Project / Client July 2000 Quarterly Event

WELL ID	DTW	TD
17K	11.26	18.59
17L	12.35	20.91
17M	10.69	17.78
OT-15C	8.88	15.49
SD13-01	12.73	17.39
SD13-02	13.37	16.38
SD13-03	11.15	16.73
SD13-04	9.92	13.22
SD13-05	9.45	13.52
SD13-06	11.77	14.34
SD13-07	18.69	22.44

1730 Done for day

[illegible]

Location NAS Fort Worth JRB Date 7.18.00 51

Project / Client July 2000 Quarterly

continued from page 49

Well I.D	DTW	TD
WITCTA019	15.25	19.34
WITCTA021	15.87	24.00
WITCTA022	17.72	23.43
WITCTA032	7.39	12.64
WITCTA033	9.60	13.79
WITCTA034	9.04	13.04
WITCTA035	13.88	18.50
WITCTA041	14.73	21.37
WITCTA042	13.71	19.56
WITCTA043	13.65	19.18
WITCTA044	13.53	
WHGLTA034	9.71	14.55
WHGLTA035	9.81	14.57
WITCTA040	13.18	22.80

647 127

52 Location NAS Fort Worth JRB Date 7.19.00

Project / Client July 2000 Quarterly Event

0700 Arrive on Site, calibrate PID;
0720 Health and Safety Meeting
0745 Begin well gauging

Well ID	DTW	TD
WITCTA013	15.69	21.15
WITCTA014	21.26	24.34
WITCTA016	19.14	
WCHMHTA005	18.91	26.75
WCHMHTA006	18.75	36.51
WCHMHTA008	15.40	24.52
WCHMHTA009	8.18	11.68
WCHMHTA010	7.17	24.50
WCHMHTA014	8.45	11.84
WHGLTA008	23.87	27.94
WHGLTA010	26.69	30.28
WHGLTA011	12.86	17.82
WHGLTA012	18.15	23.58
WHGLTA013	22.03	25.87
WHGLTA014	21.32	25.36
WITCTA002	4.17	7.40
WITCTA004	14.03	18.49
WITCTA005	13.25	18.37
WITCTA006	13.38	18.43
WITCTA003	14.87	23.53

Location NASHOT [illegible] JRB Date 7-19-00

Project / Client July 2000 Quarterly Event

WELL ID	DTW	TD
WHGLTA028	14.29	18.63
WHGLTA027	20.95	26.40
WHGLTA026	21.06	27.48
WHGLTA030	3.17	14.06
WHGLTA029	20.41	25.40
WHGLTA033	12.62	27.37
MW-38	16.57	18.95
MW-39	16.38	18.96
MW-40	16.72	19.82
MW-41	16.95	20.24
MW-42	16.78	19.49
MW-50	11.04	14.31
MW-51	11.11	15.08
MW-57	12.36	14.28
SPOT35-1	23.29	26.19
SPOT35-3	20.96	23.81
SPOT35-4	25.55	24.67
SPOT35-5	22.93	29.70
SPOT35-6	24.06	29.01
SPOT35-7	8.47	20.51
GMT-22-02m	11.21	
GMT-22-04m	20.47	25.27
HM-120	6.84	17.71

647 129

54 Location NAS Fort Worth JRB Date 7.19.00

Project / Client July 2000 Quarterly Event

Well ID	DTW	T.D.
HM-12S	20.15	33.02
LSA1628-2	11.29	19.08
LSA1628-3	11.02	17.96
MW-11A	23.32	27.19
SPOT35-8	23.39	27.38
SPOT35-9	23.68	28.60
SM4-25	6.48	16.63

All dedicated pumps have been reinstalled

Done for day gauging complete.

Brian Ward

Location NAS Fort Worth JRB Date 7.20.00

Project / Client July 2000 Quarterly Event

0700 Arrive at field house, calibrate equipment. Prepare for sampling of one well and well location with the metal detector. Prepare TB072000

0730 Health and Safety Meeting

0745 Pick up radio from tower and head to HM-126

0810 Arrive in area of HM-126. Look for well using metal detector

0915 Locate well HM-126 and set up for sampling (no place for cones)

PID = 0

DTW = 16.56 TD = 35.82

Pump inlet @ ~26.56'

0945 Begin purging

1013 Collect Sample HM-126WG12

1040 Decon pump & begin search for well HM-114 on flightline.

1150 Locate HM-114 and gauge

PID = 0

DTW = 19.97 TD = 35.57

new custody seal: 0194477

647: 131

56 Location NAS Fort Worth JRB Date 7.20.00

Project / Client July 2000 Quarterly Event

1220 Unload vehicle and prepare to end field event. Team one is done for the July Event.

EB072000 collected

Location NAS Fort Worth JRB Date 7-10-00 31

Project / Client July 2000 Quarterly Groundwater Sampling / AFCEE

0720 Arrive at field office. Pack equipment, calibrate equipment.

0930 Go on base to renew/get Base passes with M. Dodyk. Navy unable to provide base passes. M. Dodyk needs to obtain current letter to allow him to sign for passes

1030 Return to field office. Discuss health and safety topics with the Team 2 (C. Williams and Jim Heranger).

1100 Break for lunch.

1200 Arrive at ITMW-01T Set up. Remove seal #D194399, PID: 0.0 ppm DTW: 14.21. Unable to determine if screen interval provided was for intake of pump. Pulled pump to verify placement of pump. Depth to pump intake: 17.1'.

32 Location NAS Fort Worth JRB Date 7-10-00

Project / Client July 2000 Quarterly Groundwater Sampling / AFCEE

Replace pump and go to next well.

1300 Arrive at WHGLTA025.
Remove seal # 0194357.
PID: 0.0 ppm. DTW: 16.6'
Top of pump ~~17.8~~ CW 16.9
pump inlet - ~~18.4~~ 19.5
pulled pump up slowly 1' to center across saturated screened interval @ 18.5
(Screen 10.5-20.5)

1331 CW ~~1531~~ Begin purging well.
Establish flow rate of 0.3L/min.

1355 CW ~~1555~~ Parameters stabilize.
Collect samples
WHGLTA025WG12.

1410 CW ~~1610~~ Complete sample collection.
Lock well with seal # 0180760.

1415 Arrive at WHGLRW015.
Set up PID: 0.0 ppm
Remove seal #: 0194372
DTW: 15.55', pump intake is at 19.3'.

Location NAS Fort Worth JRB Date 7-10-00 33

Project / Client July 2000 Quarterly Groundwater Sampling / AFCEE

1503 Begin purging well.
1520 Collect samples WHGLRW015NG12
1530 Complete well sample collections. Lock well with seal #0180772. Final DTW: 15.55'.
1545 Return to field office. Drop off samples.
1615 Return to hotel for J. Heringer to get insulin shot.
1635 Return to field office.
1650 Leave Site for day.

[illegible]

34 Location NAS Fort Worth JRB Date 7-12-00

Project / Client July 2000 Quarterly Groundwater Investigation / AFCEE

0705 Arrive at field office.
0715 Health and Safety Meeting conducted by C. Williams.
0730 Calibrate equipment, load van, complete ~~some~~ EW office work while waiting for ~~new replacement~~ EW replacement compressor.
1040 New equipment arrives via Fed Ex.
1100 Get radio from Navy Tower.
1115 Arrive at HM-123. Set up. Remove seal# 0194421. PID: 8.4ppm at WH ~~DTW:~~ EW; 0.0ppm in BZ. ; DTW: 28.90'
1130 Begin purging well.
1157 Collect samples HM-123WG12 ~~and~~ Dup02 EW. Final DTW: 28.90'
Remove dedicated pump and place in bag for storage.
Depth to pump intake: 31.5'.
Lock well w/ seal# 0180761.
Pump is ~~2.5~~ EW 3.5'

Location NAS Fort Worth JRB 7-12-00 35

Project / Client July 2000 Quarterly Groundwater Investigation / AFCEE

1230 Break for lunch
1300 Tried to sample LF05-D1 but denied permission to cross foxtrot. Headed to LF03-3D
1340 ~~TOP = 12.6'~~ gw Arrive at LF03-3D after delay due to C130 take off. Set up. Remove seal # 0194361 TOP = 12.6', 0.0 ppm in B.Z. DTW not determined because it is below TOP.
1346 Begin purging well.
1409 Collect sample LF03-3DWG12 (Established flow rate 0.15 L/min) Remove dedicated pump & place in box for storage. Depth to pump intake: 16.19' Pump = 3.5' Lock well w/ seal # 0180751 gw ~~DT~~ TD = 17.87', Condition of bottom of well, good.
1500 Meet Team #1 and give them our samples.

36 Location NAS Fort Worth JRB Date 7-12-00

Project / Client July 2000 Quarterly Groundwater Investigation / AFCEE

1515	Arrive at W-153. Set up. Remove seal #0194427. PID: 0.0 ppm. DTW: 22.43' Depth to top of pump: 31.12'.
1530	Begin purging well
1555	Collect sample W-153WG12. Final DTW: 22.45'. Pull pump for gauging. Depth to pump intake: 34.74' Length of pump: 3.5' Lock w/ seal #0180792.
1625	Return radio to Navy Tower.
1635	Store IDW in IDW Storage Area in smaller poly tank.
1645	Return to field office.
1710	Leave Site for day.

Location NAS Fort Worth JRB Date 7-13-00 37

Project / Client July 2000 Quarterly / Phase III RFI Landfills Investigation

0700 Arrive at field house. Calibrate equipment, load van.
0740 Health and Safety Meeting.
0825 Arrive at WHGLTA705. Set up. Remove custody seal # 0194476. PID: 4.0 ppm at wellhead; 0.0 ppm in BZ. DTW: 5.42'; TD: 10.7' lower pump intake to 8.0'
0900 Begin purging well. Establish flow rate of 0.2 L/min.
0955 Collect samples WHGLTA705 WG02.
1015 Lock well w/ seal # 0180753.
1040 Return to field office for additional equipment.
1055 Arrive at WHGLTA706. Decon pump. Remove seal # 0194484. PID: 8.0 ppm at wellhead; 0.0 ppm in BZ. DTW: 13.55'; TD: 17.84' lower pump intake to 15.7'.
1140 Begin purging well.

38 Location NAS Fort Worth JRB Date 7-13-00

Project / Client Phase III RFI Landfills Investigation / AFCEE

1240 Collect samples WHGLTA706WG02
lock well w/ seal #0180752
1300 Decon pump
1320 Break for lunch.
1420 Collect equipment blank
EB071300.
1500 Arrive at WHGLTA704.
Remove seal #0180714.
PID: 4.8 ppm at WH; 0.0 ppm in BZ.
DTW: 12.49'; TD: 22.11'
Lower pump to 17.3' (intake)
1525 Begin purging well.
1555 Collect samples WHGLTA704WG07.
1630 Decon pump lock well with
seal # 0180773.
1700 Store purge and decon water
at IDW Storage Area.
1710 Return to field office.
1730 Leave Site for day.

Cassie Willis

Location NAS Fort Worth JRB Date 7-14-00

Project / Client July 2000 Quarterly Groundwater Investigations / AFCEE

0700 Arrive at field office. Calibrate equipment, load vans.
0715 Prepare trip blanks TB071400
0750 Health and Safety Meeting
0800 Mob to tower to pick up radio
0822 ~~Arrive at HM-126 &~~ ~~Set up~~ Unable to find HM-126 due to tall grass, grass clippings & lack of landmarks. Will return to locate.
0910 Arrive at WHGLRW017. Set up. Remove Seal #0402348. PID: 0.0ppm; DTW: 16.5'; TD: 23.9'. Lower pump intake to 20.2'.
0945 Begin purging well. Establish flow of 0.1 L/min.
1010 collect sample WHGLRW017 & DUP01.
Final DTW = 16.5'
new custody # 6180780
1035 Collect ambient blank AB071400WG12

647 141

40 Location NAS Fort Worth JRB Date 7-14-00

Project / Client July 2000 Quarterly Groundwater Sampling / AFCEE

1045 Decon pump.

1120 Return to field office. Make phone calls to Herndon to find last sampling event for HM-126. No record of HM-126 being sampled by HydroGeologic; therefore the well most likely does not have dedicated tubing and we would not be able to sample today even if the well was located. Will order tubing.

1130 Collect equipment blank EB071400.

1145 Break for lunch.

1240 Arrive at WHGLTA025.

Pull pump for gauging.

~~Depth~~ Lengths to top of pump: 16.85' CW

~~DT pump intake~~ CW

length of pump: 1.55'

Seal # 0180760 Removed

Lock w/ seal # ~~01800~~ 0180793

~~16.85'~~ CW

~~1.55'~~ C

Location NAS Fort Worth JRB Date 7-14-00 41

Project / Client July 2000 Quarterly Groundwater Investigation / AFCEE

1255 Arrive at WHGLTA601.
PID: 0.0ppm; Remove seal #0194190.
Length to top of pump: 14.92'
Length of pump to intake: 1.55'
Lock w/ seal # 0180795.

1315 Arrive at WITCTA040.
PID: 0.0ppm
Remove seal # 0194028.
~~Length to top of pump:~~ CW
~~Length of pump:~~ CW
Lock w/ seal # 0180794.
No dedicated pump in well.

1325 Return radio to Navy Tower.

1330 Dispose of Purge and decon water at IDW Storage Area.

42 Location NAS Fort Worth JRB Date 7/17/00

Project / Client July 2000 Quarterly - Well Gauging / AFCEE

0700 Arrive at field office Calibrate equipment, load van.

0755 Health and Safety Meeting.

0825

Monitoring Well	Custody Seal Removal	PID ppm	DTW (ft)	TD (ft)	Seal Locked
WHGCTA025	0180793	0.6	16.73	21.26	#0180791
WP07-10B	–	0.0	31.59	36.93	0180784
WP07-10C	–	0.0	16.73	21.26	0180776
WHGCTA002	0194386	0.0	14.67	19.97	0180781
LF05-5B	0194385	0.0	7.0	12.49	0180779
LF05-5H	–	0.0	–	16.56	0180782
LF04-02	(broken) 0194420	0.0	31.94	38.11	0180783
LF04-4E	–	0.0	26.89	30.48	0180778
LF04-4D	–	5.4	23.41	27.74	0180777
LF04-4C	–	2.4	21.55	27.69	0180785
LF04-4B	–	2.2	20.20	25.21	0180786
LF04-4A	–	0.0	14.76	24.94	0180787

1140 Break for lunch. Run errands, buy supplies.

1255

Monitoring Well	Custody Seal Removal	PID	DTW	TD	Locked w/ Seal #
GMI-04-01M	–	4.4	–	19.98	#0180788
LF05-19	–	11.2	15.67	19.92	0180790
LF04-04	Unable to locate; construction debris				
WHGCTA022	0402397	5.7	23.90	32.65	0180789

Location NAS Fort Worth JRB Date 7/17/00

Project / Client July 2000 Quarterly
– Well Gauging / AFCEE

1420	Monitoring well	Custody Seal?	PID	DTW (FT)	TD	Lock w/ Seal #
	LF04-10	0194311	2.4	(Pull pump)		0180796
	LF05-~~11~~ 18	0194310	0.0	20.86	23.50	0180797
	WHGLTA003	–	0.0	23.64	29.50	0180800
	WHGLRW015	0180772	0.0	15.70	18.33	No place for seal ~~0180799~~
	WHGLRW019	0402342	0.0	15.87	23.71	0180799 ~~0402342~~
	WHGLTA023	0402334	0.0	18.38	28.64	0438601
	WHGLRW018	0402399	0.0	18.71	27.73	0438602
	WHGLRW016	0194054	0.0	14.48	22.64	0438603
	ITMW-01T	–	2.0	14.43	21.63	No place ~~0a~~
	WHGLRW017	0180780	0.0	16.60	23.98	0438604
	WJETA530	0194073	0.8	36.42	44.19	0438605
	WJETA535	–	0.0	34.74	42.56	0438606
	MWMTAC-001	(Dolphin) –	0.6	35.20	43.77	0438607

1715 Return to field office.
1745 Leave Site for day.

Cathy Willis

44 Location NAS Fort Worth JRB Date 7/18/00

Project / Client July 2000 Quarterly Well Gauging / AFCEE

0715 Arrive at field office. Calibrate PIDs. Load vans.

0730 Health & Safety Meeting.

0750 Arrive at WHGLTA025. Replace pump. Custody Seal # 0180791 removed. Lock w/ seal # 0438611. PID: 0.0 ppm.

0805 Get radio from Navy Tower.

0815

Monitoring Well	Seal Removed	PID (ppm)	DTW (ft)	TD (ft)	Locked w/ Seal #
WHGLTA801	0194268	13.4	9.12	13.84	0438612
WHGLTA803	0194265	0.0	8.55	12.32	0438613
WHGLTA004	0194269	5.5	Remove pump Depth to top: 18.2' intake 21.37		0438614
FT08-11A	0180705	0.0	12.61	17.56	0438615
WHGLTA704	0180773	0.0	12.59	22.10	0438616
FT08-11B	0180701 0180702	0.0	12.12	16.97	0438617
WHGLTA702	0180703	0.0	13.98	21.58	0438619
WHGLTA703	0194378	0.0	19.32	28.03	0438620
LF05-5D	0194368	0.0	15.58	20.94	0438608
LF05-5A	0194371	0.0	27.81	30.35	0438609
LF05-5E	0194302	0.0	31.59	35.50	0438610
LF04-01	Gov't lock	0.0	34.00	41.34	0438621
FT09-12A	Gov't lock	0.0	18.04	27.85	0438622
USGS07P	0194063	0.0	87.65	140.50	0438623

Location NAS Fort Worth JRB Date 7/18/00 45

Project / Client July 2000 Quarterly Well Gauging / AFCEE

1015 Monitoring Well	Seal Removed	PID (ppm)	DTW(ft)	TD(ft)	Locked w/ Seal #
USGS07T	0194065 (488)	0.0	11.89	15.18	0438624
FT09-12C	0481647	0.0	Removed pump DT top: 32.15	intake 353	0438625
FT09-12B	0194065 (0194064)	258	33.76	37.63	0438626
FT09-12D	Gov't lock —	0.0	33.44	36.99	0438627
FT09-12E	0194325	0.0	34.07	38.58	0438628
WP07-10A	Gov't lock —	0.0	31.74	37.74	0438629
WITCTA057	~~Gov't lock~~ —	8.8	30.28	42.20	0438630 ~~Gov't lock~~ —

1150 Spoke w/ Mike from IT Corp. They plan to fill in a ditch between Landfills 5 and 7. The area planned for fill would cover up monitoring wells WHGLTA703, LF05-5D, and WHGLTA702. Also, we were unable to locate MW-13. It appears a new concrete pad and above-ground fuel tank are in the location of where MW-13 should be located.

1215 Break for lunch. Spoke w/ Brad Nielsen, HGL via phone. It will be necessary to properly abandon wells before IT covers them.

647 147

46 Location NAS Fort Worth JRB Date 7/18/00

Project / Client July 2000 Quarterly - Well Gauging / AFCEE

	Monitoring Well	Seal # Removed	(ppm) PID	(ft) DTW	(ft) TD	Locked w/Seal #
1345	LF05-5C	0194380	0.0	14.20	21.15	0438631
	WHGLTA705	0180753	0.0	5.71	10.69	0438632
	WHGLTA706	0180752	0.0	13.69	17.96	0438633
	LF05-02	Gov't lock —	0.0	26.29	28.47	0438634
	WITCTA039	0194392	8.5	21.75	24.54	0438635
	HM-123	0180761	0.0	28.90	38.38	0438636
	WHGLTA701	0194398	0.0	26.84	34.85	0438637
	LF03-3D	0180751	0.0	12.83	17.73	0438638
	HM-127	—	0.0	27.07	37.64	~~0438639~~
	WHGLTA303	0194373	0.0	22.30	22.35	0438639
	WHGLTA302	0481969	0.0	19.98	22.67	0438640
	LF05-01	—	0.0	20.70	27.50	0438641
	W-153	0180792	0.0	22.43	39.25	0438642
	HM-116	0194428	0.0	24.53	31.38	0438643
	WCHMHTA-002	Gov't lock	0.0	22.45	42.25	0438644
	WCHMHTA-004	Gov't lock —	0.0	22.64	37.72	0438645
	WCHMHTA-003	Gov't lock —	0.0	22.43	28.58	0438646
	HM-118	Dolphin — lock	0.0	16.97	26.25	—
	HM-119	Dolphin — lock	0.0	15.67	28.69	—
	HM-117	Dolphin — lock	0.0	23.49	38.50	—

1840 Return to field office

1845 Leave Site for day

Location NAS Fort Worth JRB Date 7/19/00 47

Project / Client July 2000 Quarterly — Well Gauging / AFCEE

0715 Arrive at field house. Calibrate PIDs, load vans.
0730 Health and Safety Meeting
0740 Called Industrial Security, Lockheed Martin, 777-2567, to inform them that we will be gauging wells at the property boundary today. Spoke w/ Randy.

0800

Monitoring Well	Seal # Removed	PID (ppm)	DTW (ft)	TD (ft)	Locked w/ Seal #
LF05-5G	—	0.0	23.77	30.12	0438647
LF05-14	— (Unable to open 6" PVC cap)				~~0438648~~ SW
LF04-10	0180796	0.0	35.35	48.25	0438648
WL-001 JEPM	—	0.0	79.13	167.35	—
HM-111	—	0.0	27.79	47.54	—
HM-110	0194035	0.0	27.92	35.37	0438649
HM-112	—	54	30.61	47.62	—
LF09-120	0438625	0.0	34.71	39.44	0438650
WHGLTA004	0438614	0.0	18.73	23.52	0438651
WHGLTA604	0194078	0.0	19.50	23.97	0438652
WITCTA037	—	0.0	15.35	20.90	0438653
WHGLTA204	0194077	0.0	17.99	25.30	0438654
USGS6T	—	Jacobs pump 2" well		Did not measure	0438655
USGS6P	0194050	0.0	59.58	73.97	0438656

647 149

48 Location NAS Fort Worth JRB Date 7/19/00

Project / Client July 2000 Quarterly — Well Gauging

	Monitoring Well	Custody Seal Removed	(ppm) PID	(ft) DTW	(ft) TD	Locked w/Seal #
1130	MW-18	(No well)	Newly constructed Above Ground Diesel Fuel Tank & Concrete Pad			
	MW-19	0481699	0.0	18.53	19.60	0438655
	HM-124	—	0.0	15.98	24.27	—
	WITCTA020	Gov't lock —	0.0	22.32	25.51	—
(NW)	MW-53	0180732	0.0	16.78	19.44	0438657
(SE)	MW-52	—	0.0	19.38	19.55	0438658

1250 Break for lunch

	Monitoring Well	Custody Seal #	PID (ppm)	DTW (ft)	TD (ft)	Locked w/Seal
1400	LF01-1E	0194438	5.1	18.14	32.01	0438659
	LF01-1F	0194432	0.0	18.59	32.47	0438660
	WHGLTA102	0194093	0.0	16.36	37.37	0438661
	WHGLTA103	0194096	0.0	23.48	45.53	0438662
	WHGLTA104	0402332	0.0	31.12	45.43	0438663
	WHGLTA101	0194092	0.0	16.16	34.67	0438665
	WHGLTA038	—	1461 WH 0.0 BZ	—	25.46	0438666
	WHGLTA037	0194402	1220 WH 0.0 BZ	15.47	23.20	0438667
	WHGLTA036	0194461	0.0	10.36	23.50	0438668
	USGS03T	Master Lock —	0.0	4.62	8.60	0438669
	WCHMHTA007	0481692	0.0	16.19	32.35	0438669
	HM-121	Dolphin Lock —	0.0	19.35	30.30	—
	WHGLTA203	—	0.0	Replace/ Install	pump	0438864
	WHGLTA020	0402347	0.0	12.10	14.85	0438671
	WHGLTA601	0438877	0.0	Replace pump		0438670

1730 Leave Site for day. —

Location NAS Fort Worth JRB Date 7/20/00

Project / Client July 2000 Quarterly

0730 Arrive at field office
0800 Health and Safety Meeting.
0815 Review well gauging records to determine any missing information

1000

Monitoring Well	Seal #	PID (ppm)	DTW (ft)	TD (ft)	Locked w/Seal #
LF04-4F	Gov't lock —	0.0	32.50	36.94	0438672
LF04-4G	Gov't lock —	0.0	29.00	32.57	0438673
CAR-RW07	—	0.0	27.70	33.61	—

1030 The following wells are recovery wells and will not be gauged: CAR-RW1; CAR-RW2; CAR-RW4; CAR-RW5; CAR-RW8; CAR-RW9; CAR-RW10; CAR-RW11; CAR-RW12; LF04-03;

1040 Take pictures of area of demolished house on golf course - former location of LF04-04.

1115

Monitoring Well	Seal #	PID (ppm)	DTW (ft)	TD (ft)	Locked w/Seal #
WHGLTA030	0438872	0.0	3.17	14.08	0438674
WHGLTA031	(Need to return w/new key)				0438675

1130 Take picture of former location of MW-13 by Bldg 4127 a new

50 Location NAS Fort Worth JRB Date 7/20/00

Project / Client July 2000 Quarterly

	concrete pad and above ground Diesel tank are in location.
1145	Break for lunch
1230	LF05H4, Unable to open 6" PVC well cap.
1240	WJETA534; PID: 0.0 ppm ~~Remove seal~~ ow; DTW: 33.51; TD: 39.85; TOC bgs: -0.42 Lock w/seal 0438676
1300	Exchange metal detector at Nation's Rent.
1320	Take pictures of ditch area between landfills 5 and 7 and e-mail to T. Hanah, HGL-Austin.
1400	Look for USG04T; Unable to locate even with metal detector. Grass is short & should be easy to see.
1435	WITCTA012. PID: 0.0 ppm. DTW: 10.84; TD: 16.92' TOC bgs: -0.53, Custody Seal 0438677.
1450	Look for MW-58 and MW-59. Wells are not located;

Location NAS Fort Worth JRB Date 7/20/00 51

Project / Client July 2000 Quarterly

however there is a new concrete pad and above ground diesel fuel tank in former location.
Took picture
1515 WCHMHTA012. PID: 0.0 ppm
DTW: 14.67'; TD: 18.99'
TOC bgs: -0.40'; Gov't lock
Seal # 0438675
1620 WCHMNTA001. PID: 0.0 ppm
DTW: 29.88'; TD: 46.83'
TOC bgs: -0.45, Seal #0438678
1645 MW-56, PID: 0.0 ppm; DTW: 8.09
TD: 19.65'; TOC bgs: -0.34'
Seal removed: 0481683;
locked w/seal: 0438679
1700 Take pictures of former location of MW-48 & newly concrete pad and above ground diesel fuel tank.
1715 Dispose of purge and decon water at IDW Storage Area.
1800 Leave Site for day.

647 153

52 Location NAS Fort Worth JRB Date 7/21/00

Project / Client July 2000 Quarterly IDW Sampling

0730	Arrive at field office. Load van.
0745	Health and Safety Meeting
0800	Arrive at IDW Storage Area. Collect samples of soil and water
0900	Return to field office, unpack van, pack IDW samples.
1000	Go to WHGLTA03. PID: 8.2ppm DTW: 6.89'; TD 11.05' TOC bgs: -0.47, Silty on bottom. Lock w/seal: 0180771
1010	Dispose of old unused soil samples in IDW Disposal Area.
1030	Return to field office, clean up, store well wizards, return PIDs, pack samples
1145	Leave Site for day

[signature]
7/21/00

APPENDIX A.3

GROUNDWATER FIELD SAMPLING DATA SHEETS

GROUNDWATER FIELD SAMPLING DATA SHEET

0647\155

Well No.: GMI-22-06M		Location: NAS Fort Worth JRB, Texas	
Sampler(s): N Hade J Heringer		Project Name: July 2000 Quarterly Sampling	
Well Depth: 26.55		Project #: AFC001-33DCA	Date. 7.11.00 Time: ~~1445~~ NH 1450
DTW (ft): *	DTP (ft): NA	Courier: X FedEx ___UPS ___Hand ___Other	
MP Ht. Above/Below Ground Surface: 2.55		Sampling Method : Low flow	
Condition of Bottom of Well: good		Type of Pump: bladder dedicated	
Screen Interval (ft): 16.05 - 26.05		Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, humid N 100°F	
Well Diameter (in): 2			
Placement of Pump (ft): top of pump = 19.6			

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
1450	*	0.4	0	7.01	23.55	354	100.8	1.00	1.2	clear
1453	*	0.35	1.20	6.90	23.68	353	94.7	0.62	0.6	"
1456	*	0.4	2.85	6.87	23.82	355	91.8	0.56	0.5	"
1459	*	0.3	3.05	6.86	23.92	355	87.3	0.51	0.6	"
1502	*	0.35	3.95	6.86	23.75	354	85.9	0.77	0.5	"
1505	*	0.35	5.20	6.83	23.63	353	86.3	0.45	0.5	"
1508	*	0.35	6.25	6.83	23.64	353	86.9	0.41	~~0.5~~ NH 0.25	"
1511	*	0.40	7.30	6.82	23.59	353	87.8	0.40	0.21	"
1514	*	collect sample GMI-22-06MW612								

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H2S Fuel-like

Notes: * water below top of pump

Signed/Sampler(s): [signature] [signature]

647: 156

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: GMI-22-07M	Location: NAS Fort Worth JRB, Texas
Sampler(s): Nate J Heiger	Project Name: July 2000 Quarterly Sampling
Well Depth: 23.29	Project #: AFC001-33DCA Date: 7·11·00 Time: 1043
DTW (ft): * DTP (ft): —	Courier: X FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: 2.75	Sampling Method: Low flow
Condition of Bottom of Well: good	Type of Pump: Bladder - dedicated
Screen Interval (ft): 12.75 - 22.75	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, wind to N, 98°F
Well Diameter (in): 2	
Placement of Pump (ft): Top at 16.47'	

Field Parameters

	Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
	1048	*	0.22	0	7.09	25.46	321	206.7	7.10	8.0	Clear
1051	~~1052~~ 1051	*	0.3	0.66	6.98	24.49	298	213.8	6.99	20.0	"
1054	~~1055~~ 1054	*	0.3	1.56	6.92	24.05	299	218.5	6.93	70.1	"
1057	~~1058~~ 1057	*	0.35	2.46	6.89	24.03	312	215.7	4.17	43.5	"
1100	~~1102~~ 1100	*	0.3	3.465	6.85	25.19	321	219.2	4.11	27.0	"
1103	~~1105~~ 1103	*	0.4	4.365	6.85	24.10	312	221.6	4.28	78.0	"
1106	~~1108~~ 1106	*	0.15	6.565	6.84	23.83	312	223.5	4.58	75.0	"
1109	~~1112~~ 1109	*	0.15	6.965	6.86	24.71	319	~~224~~ 219	4.51	50.0	"
	1112	*	0.15	7.365	6.86	25.02	322	~~322~~ 220	4.49	33.0	"
	1115	*	0.15	7.815	6.84	24.66	319	222.9	4.23	24.1	"
	1118	*	0.20	8.265	6.83	24.27	315	224.5	4.12	19.2	"
	1121	*	0.25	8.915	6.81	24.17	316	223.8	4.02	12.0	"
	1124	*	0.25	9.665	6.81	24.09	315	225.0	4.04	9.1	"
	1127	*	0.25	10.315	6.80	24.10	317	225.3	3.99	8.2	"
	1131	*	0.25	11.065	6.80	24.30	318	225.2	4.00	6.3	"
	1134	*	Collect Samples				GMI-22-07MWG12				MS/MSD

Observations

Color: Clear Other (describe):

Odor: None Low Medium High Very Strong H2S Fuel-like

Notes: * Below top of pump

Signed/Sampler(s): [signature]

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: HM-123	Location: NAS Fort Worth JRB, Texas
Sampler(s): J. Wallace, C. Williams	Project Name: July 2000 Quarterly Sampling
Well Depth: 38.33'	Project #: AFC001-33DCA Date: 7-12-00 Time: 1139
DTW (ft): 28.9' DTP (ft): –	Courier: ✓ FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: -1.21	Sampling Method: Grab; Low flow purging
Condition of Bottom of Well:	Type of Pump: Bladder - dedicated pump
Screen Interval (ft): 20.09 - 40.09	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 4	Sunny, Clear, 100°, Wind from SW
Placement of Pump (ft): 31.5'	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
1139	28.90	~~0.2~~ 0.15	0.0	6.45	22.99	238	223	0.31	2.01	
1142	28.90	0.2	0.45	6.51	22.89	235	216	0.26	2.39	
1145	28.90	0.2	1.05	6.55	22.72	233	211	0.22	2.35	
1148	28.90	0.2	1.65	6.58	22.55	232	203	0.19	1.83	
1151	28.90	0.2	2.25	6.64	22.38	232	194	0.17	2.42	
1154	28.90	0.2	2.85	6.62	22.47	232	193	0.16	1.97	
1157	Collect samples.									

Observations

Color: (Clear) Other (describe): Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like None

Notes:

Signed/Sampler(s) C. Williams J. Wall

647 158

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No HM-126	Location: NAS Fort Worth JRB
Sampler(s): ~~P. Williams~~, J. Wallace	Project Name Quarterly Groundwater Sampling
Well Depth: 35.82	Project #: AFC-001-~~28~~ 33 DCA Date: 7/20/00 Time: 0945
DTW (ft): 16.55 DTP (ft): —	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface:	Sampling Method: LOW FLOW
Condition of Bottom of Well: good	Type of Pump: Bladder - non dedicated
Screen Interval (ft):	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 4"	Sunny, , ~~93°~~ 102°F, humid, wind to N
Placement of Pump (ft): top 23.36	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
9:55	16.55	.1		6.73	26.12	226.00	167.1	2.77	3.74	
9:58	16.55	.1		6.67	25.56	219.00	163.6	2.52	3.96	
10:01	16.55	.1		6.68	25.24	216.00	161.9	2.39	2.59	
10:04	16.55	.1		6.71	24.80	212.00	158.6	2.26	2.41	
10:07	16.54	.1		6.72	24.63	211.00	158.5	2.21	2.36	
10:10	16.54	.1		6.75	24.33	209.00	156.4	2.09	2.42	
~~10:13~~	COLLECT SAMPLE									

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H2S Fuel-like

Notes:

Signed Sampler(s): [illegible]

GROUNDWATER FIELD SAMPLING DATA SHEET

647 159

Well No.: ITMW-01T	Location: NAS Fort Worth JRB, Texas
Sampler(s): N. Hade / J. Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth:	Project #: AFC001-33DCA Date: 7/13/00 Time: 0815
DTW (ft): 14.32 DTP (ft): ~~17.2~~ Jar Now	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: -0.3	Sampling Method: Low Flow
Condition of Bottom of Well: N/A	Type of Pump: short bladder - dedicated
Screen Interval (ft): 12 - 22	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 4	Partly sunny, NE, 88°
Placement of Pump (ft): pulled to cont. on 17.2 - inlet	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
0823	14.30	0.2	0	6.33	22.19	383.00	265.2	1.52	2.54	
0826	14.28	0.2	0.6	6.37	21.78	377.00	262.6	0.80	1.01	
0829	14.30	0.2	1.2	6.44	21.55	374.00	258.4	0.51	0.60	
0832	14.30	0.2	1.8	6.47	21.44	372.00	254.8	0.41	0.59	
0835	14.30	0.2	2.4	6.50	21.38	372.00	251.1	0.36	0.45	
0838	14.30	0.2	3.0	6.53	21.29	371.00	246.8	0.30	0.48	
0841	14.30	0.2	3.6	6.54	21.30	370.00	243.1	0.27	0.22	
0844	14.30	0.2	4.2	6.56	21.28	370.00	237.6	0.25	0.19	
0845	collect samples									

Observations

Color: (Clear) Other (describe). clear

Odor. (None) Low Medium High Very Strong H2S Fuel-like none

Notes

Signed/Sampler(s): J Wall N Hade

647 160

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No LF03-3D	Location: NAS Fort Worth JRB, Texas
Sampler(s): C. Williams, J. Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth:	Project #. AFC001-33DCA Date: 7/12/00 Time: 1346
DTW (ft): * DTP (ft): N/A	Courier. X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: 3 65	Sampling Method : ~~Bladder~~ Low Flow
Condition of Bottom of Well: Good	Type of Pump: Bladder - dedicated
Screen Interval (ft): 11.15 - 18.05	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 2	sunny, N, 99°!
Placement of Pump (ft). 15.55'	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
1349	*	0.2	0	6.92	23.87	343	186.0	2.81	36.4	
1352		0.4	0.6	6.75	24.14	351	194.7	2.95	14.98	
1355		0.15	1.8	6.73	24.96	358	195.4	3.07	9.75	
1358		0.15	2.25	6.74	25.38	362	189.1	3.32	7.70	
1401		0.15	2.70	6.71	25.44	360	191.9	3.31	8.67	
1404		0.15	3.15	6.71	25.40	359	192.0	3.39	6.46	
1407		0.10	3.60	6.69	25.55	360	191.6	3.43	4.79	
1409	collect samples									

Observations

Color: (Clear) Other (describe). Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like none

Notes: * DTW below TOP

Signed/Sampler(s): C. Williams J. Wallace

GROUNDWATER FIELD SAMPLING DATA SHEET

647 161

Well No : LF05-01	Location: NAS Fort Worth JRB, Texas
Sampler(s): Nitade, J. Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth:	Project #: AFC001-33DCA Date: 7/13/00 Time: 1432
DTW (ft): below top of pump DTP (ft): —	Courier: X FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: 2.66	Sampling Method : LOW FLOW
Condition of Bottom of Well:	Type of Pump: Bladder - dedicated
Screen Interval (ft): 17.61 - 27.36	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 2	sunny, NE, 105°F
Placement of Pump (ft): 17'	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
1440	*0.94	0.1	0	6.74	28.86	427	-79.5	3.96	50.6	
1445		0.1	0.5	6.70	29.12	441	-87.1	3.90	61.8	
1450		0.17	1.5	6.65	29.02	493	-100.9	3.30	50.5	
1455		0.17	2.35	6.63	29.00	522	-108.3	3.01	42.8	
1500		0.17	3.20	6.65	26.78	514	-111.7	2.47	58.3	
1505		0.17	4.05	6.54	26.20	515	-115.2	2.12	47.7	
1510		0.17	4.56	6.52	25.95	515	-117.5	1.92	40.8	
1515		0.17	5.07	6.53	26.59	522	-121.3	1.69	42.5	
1520		0.17	5.58	6.46	24.85	501	-121.5	1.44	41.6	
1525		0.2	6.43	6.41	23.88	492	-122.8	1.14	42.9	
1530		0.2	7.43	6.42	24.13	489	-125.1	0.99	43.6	
1535		0.2	8.43	6.43	24.08	487	-125.2	0.89	44.4	
1540		0.2	9.43	6.44	24.19	485	-127.1	0.81	43.2	
1545	collect samples									

Observations

Color: (Clear) Other (describe): clear w/ rust particles

Odor: (None) Low Medium High Very Strong H2S Fuel-like none

Notes: * water is below top of pump

Signed/Sampler(s): [signature]

219000

647 162

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: LF05-5G		Location: NAS Fort Worth JRB, Texas	
Sampler(s). Wade J. Hesinger		Project Name: July 2000 Quarterly Sampling	
Well Depth. –		Project #: AFC001-33DCA	Date: 7.11.00 Time: 0806
DTW (ft): *	DTP (ft): NA	Courier: X FedEx ___UPS ___Hand ___Other	
MP Ht. Above/Below Ground Surface: 3 39		Sampling Method : lowflow	
Condition of Bottom of Well: —		Type of Pump: bladder dedicated	
Screen Interval (ft): 17.64 - 29.39		Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, wind to the North 85°F	
Well Diameter (in): 2			
Placement of Pump (ft): top of pump 21.7			

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
0843	*	0.25	0	6.44	22.17	321.0	130.9	1.50	6.0	clear
0846	*	0.15	0.75	6.42	22.63	324.0	64.4	1.18	3.8	"
0849	*	0.1	1.20	6.48	23.48	331.0	31.2	1.16	1.8	"
0852	*	0.1	1.50	6.54	24.03	333.0	24.5	1.23	1.7	"
0855	*	0.1	1.80	6.58	24.23	335.0	23.3	1.23	1.6	"
0858	*	0.1	2.10	6.61	24.11	334.0	24.09	1.23	1.6	"
0901	*	0.1	2.40	6.63	24.01	332.0	24.02	1.23	1.6	"
0904	collect sample				LF05-5GWG12					
					DUP02WG12					

Observations

Color Clear Other (describe)

Odor: None Low Medium High Very Strong H2S Fuel-like

Notes: * Blow top of pump

Signed/Sampler(s). [signature]

GROUNDWATER FIELD SAMPLING DATA SHEET

647 163

Well No.: MW-53	Location: NAS Fort Worth JRB, Texas
Sampler(s): N Hade J Heninger	Project Name: July 2000 Quarterly Sampling
Well Depth: 19.54	Project #: AFC001-33DCA Date: 7·12·00 Time: 1115
DTW (ft): 16.41 DTP (ft): NA	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: -0.5	Sampling Method: Low flow
Condition of Bottom of Well:	Type of Pump: dedicated bladder
Screen Interval (ft): -	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, humid, wind to NE, 96°F
Well Diameter (in): 4	
Placement of Pump (ft): * cannot be determined	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size and Amount of Sediment Discharged
1120	16.55	0.1	0	7.07	23.06	187.0	143.1	5.92	1.4	clear
1123	16.50	0.1	0.3	7.00	24.02	193.0	166.1	5.46	0.9	"
1126	16.51	0.15	0.6	6.95	23.74	200.0	186.8	4.52	0.5	"
1129	16.55	0.15	1.05	6.93	23.42	200.0	203.2	4.10	1.3	"
1132	16.57	0.15	1.50	6.93	22.65	197.0	214.5	4.09	1.2	"
1135	16.60	0.20	1.95	6.94	22.39	196.0	223.4	3.94	1.0	"
1138	16.63	0.20	2.55	6.95	22.33	195.0	233.1	4.00	1.1	"
1141	collect Sample				MW-53WG12					

Observations

Color: (Clear) Other (describe):.

Odor: (None) Low Medium High Very Strong H2S Fuel-like

Notes:

Signed/Sampler(s): [signature]

647 164

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: SPOT35-5	Location: NAS Fort Worth JRB, Texas
Sampler(s): N. Hade, J. Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth. 29.70	Project #: AFC001-33DCA Date: 7/13/00 Time: 1050
DTW (ft): 22.67 DTP (ft): —	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: -0.15	Sampling Method : LOW FLOW
Condition of Bottom of Well: good	Type of Pump: Bladder - dedicated
Screen Interval (ft): 16.45 - 26.45	Weather (sun/clear, overcast/rain, wind direction, ambient temperature).
Well Diameter (in): .4"	sunny; NE; 95°
Placement of Pump (ft): *	

Field Parameters

	Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
	1106	23.28	0.1	0	6.68	30.33	515	-118.3	0.78	11.01	
gw	1109	23.26	0.1	0.3	6.66	28.86	505	-122.5	0.57	10.80	
23.36	1112	~~23.36~~	0.1	0.6	6.65	27.46	496	-124.9	0.45	10.28	
23.42	1115	~~23.26~~	0.1	0.9	6.63	26.30	488	-127.3	0.33	7.21	
	1118	23.58	0.1	~~1.0~~ 1.2	6.62	25.85	487	-129.2	0.29	5.64	
	1121	23.59	0.1	1.5	6.62	25.23	482	-130.2	0.29	5.59	
	1124	23.61	0.1	1.8	6.61	25.29	482	-131.0	0.27	5.18	
	1129	Collect sample.									

Observations

Color: Clear Other (describe): Clear w/ small rust particulates

Odor: None Low Medium High Very Strong H2S Fuel-like none

Notes: * Cannot be determined 4" well.

slight BTEX odor as we were 10 minutes into ~~sampling~~ purging. (gw)

Signed/Sampler(s): JWall NHade

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: USGS07T	Location: NAS Fort Worth JRB, Texas
Sampler(s): N Hade L Morgan	Project Name: July 2000 Quarterly Sampling
Well Depth: 15.16	Project #: AFC001-33DCA Date: 7.12.00 Time. 1336
DTW (ft): * DTP (ft): NA	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: -1.34	Sampling Method : lowflow
Condition of Bottom of Well: good	Type of Pump: dedicated bladder
Screen Interval (ft): 10.16 - 15.16	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, humid, NE, 100°F
Well Diameter (in): 2	
Placement of Pump (ft): top of pump = 10.4	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
1339	*	0.18	0	6.95	25.33	209	164.5	3.95	170	cloudy
1342 ~~1344~~	*	0.15	0.54	6.93	25.01	207	184.3	3.72	123	"
1345	*	0.2	0.99	6.91	24.59	206	204.7	3.50	77	clearing
1348	*	0.2	1.59	6.89	24.38	205	216.9	3.42	55	"
1351	*	0.23	2.19	6.88	23.85	203	228.2	3.29	42	"
1354	*	0.30	2.88	6.88	23.66	201	243.4	3.13	31	"
1357	*	0.28	3.78	6.87	23.58	201	246.4	3.13	28	"
1400	*	0.32	4.62	6.87	23.57	201	252.6	3.20	23	"
1403	*	0.35	5.58	6.86	23.49	200	261.2	3.30	34	"
1406	*	0.25	6.63	6.86	23.61	200	265.6	3.28	30	"
1409	*	0.28	7.38	6.86	23.60	201	271.5	3.25	32	"
1412	*	0.29	8.22	6.85	23.62	201	277.1	3.24	27	"
1415	*	0.27	9.09	6.85	23.48	201	279.4	3.28	23	"
1418 ~~1428~~	*	0.30	9.70	6.85	23.54	201	283.4	3.32	17	"
1421	*	0.29	10.60	6.85	23.59	201	285.6	3.36	17	"
1424	*	0.30	11.47	6.85	23.53	200	288.1	3.36	18	"

1427 * collect sample USGS07TWG12

Observations

Color: Clear Other (describe):

Odor: None Low Medium High Very Strong H2S Fuel-like

Notes: * water is below top of pump

Signed/Sampler(s): [signature] L. Morgan

647 166

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: W-153	Location: NAS Fort Worth JRB, Texas
Sampler(s) J. Wallace, C. Williams	Project Name: July 2000 Quarterly Sampling
Well Depth: 3	Project #. AFC001-33DCA Date: 7-12-00 Time: 1537
DTW (ft): 22.43' DTP (ft):	Courier: ✓ FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface. -0.13	Sampling Method : Grab; low flow
Condition of Bottom of Well:	Type of Pump: Bladder - dedicated
Screen Interval (ft): 29.77 - 39.27	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 2"	Sunny, Clear, Wind from SW, 100°
Placement of Pump (ft). 34.52' (intake)	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
1537	22.47	0.1	0.0	6.84	25.90	252	170	3:48	9.23	
1540	22.44	0.2	0.3	6.63	25.37	249	178	3.33	7.05	
1543	22.45	0.2	0.9	6.46	24.55	246	181	3.29	7.85	
1546	22.46	0.2	1.2	6.38	24.21	243	180	3.34	8.72	
1549	22.46	0.2	1.8	6.30	24.07	243	177	3.43	6.69	
1555	Collect samples									

Observations

Color: (Clear) Other (describe): Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like None

Notes:

Signed/Sampler(s). C. Williams, J. Wall

647 167

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: WHGLRW015	Location: NAS Fort Worth JRB, Texas
Sampler(s): C. Williams, J. Heringer	Project Name: July 2000 Quarterly Sampling
Well Depth: 23.5'	Project #: AFC001-33DCA Date. 7-10-00 Time: 1503
DTW (ft): 15.55' DTP (ft): —	Courier: ✓ FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: 0	Sampling Method: Grab; low flow purging
Condition of Bottom of Well: —	Type of Pump: Bladder pump - dedicated
Screen Interval (ft): 13.5 - 23.5	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 4"	Sunny, Clear, 100°, Wind From SE.
Placement of Pump (ft) 19.3' - top of pump	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
1503	15.56	~~0.2~~ 0.4 @	0.0	6.38	21.37	402	248	4.14	~~0.3~~ @	3.0 NTU
1506	15.56	0.3	1.2	6.37	21.66	404	277	3.72	2.20	
1509	15.56	0.3	2.1	6.37	21.50	403	286	3.59	1.30	
1512	15.55	0.3	3.0	6.37	21.54	402	296	3.31	0.90	
1515	15.55	0.3	3.9	6.40	21.60	403	299	3.18	1.70	
1518	15.55	0.3	4.8	6.38	21.52	402	304	3.18	1.40	
1520	Collect samples									

Observations

Color: (Clear) Other (describe). Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like None

Notes:

Signed/Sampler(s): C. Williams

647 168

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No ~~WHGLT.A028~~ CW WHGLRW017	Location: NAS Fort Worth JRB
Sampler(s). J. Walkce, C Williams	Project Name: ~~AOC~~ July 2000 Quarterly
Well Depth: 23.9'	Project #: AFC001-~~1BBD~~ 33DCA Date. 7-14-00 Time: 0952
DTW (ft): 16.5' DTP (ft). –	Courier: ✓ FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface:	Sampling Method : Grab; Low Flow
Condition of Bottom of Well Silty	Type of Pump: Bladder - nondedicated
Screen Interval (ft): 13.9' - 23.9'	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in). 4"	Sunny, Clear, 90°
Placement of Pump (ft). 20.2 (intake)	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
0952	16.5	0.1	0.0	6.66	22.67	333	218	4.38	4.0	
0955	16.5	0.15	0.3	6.66	22.74	334	221	4.34	4.15	
0958	16.5	0.15	0.75	6.66	22.71	333	222	4.29	5.97	
~~0~~ 1001	16.5	0.15	1.20	6.67	22.47	332	224	4.25	8.04	
1004	16.5	0.15	1.65	6.67	22.43	331	227	4.22	8.10	
1010	Collect samples.									

Observations

Color: (Clear) Other (describe): Clear

Odor. (None) Low Medium High Very Strong H2S Fuel-like None

Notes:

Signed/Sampler(s). C. Williams

GROUNDWATER FIELD SAMPLING DATA SHEET

617169

Well No : WHGLTA011	Location: NAS Fort Worth JRB, Texas
Sampler(s): N. Hade, J. Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth: 16.7	Project #: AFC001-33DCA Date: 7/13/00 Time: 0945
DTW (ft): 11.98' DTP (ft): —	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: 1.93	Sampling Method : LOW FLOW
Condition of Bottom of Well: N/A	Type of Pump. BLADDER - dedicated
Screen Interval (ft): 5.43 - 16.93	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 2	sunny, NE, 90°
Placement of Pump (ft): Inlet 13.9'	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
0949	12.01	0.2	0	6.89	24.64	570.	230.5	1.98	12.1	
0952	12.02	0.2	0.6	6.88	24.70	572	230.1	1.62	7.83	
0955	12.02	0.2	1.2	6.88	24.71	573	228.3	1.42	6.10	
0958	12.02	0.18	1.8	6.88	24.59	572	225.5	1.27	8.78	
1001	12.02	0.18	2.34	6.89	24.60	572	223.1	1.19	7.07	
1004	12.02	0.18	2.88	6.90	24.70	573	218.6	1.10	4.77	
1006	Collect sample.									

Observations

Color: (Clear) Other (describe). Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like none

Notes:

Signed/Sampler(s): J Wallace

647·170

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: WHGLTA025	Location: NAS Fort Worth JRB, Texas
Sampler(s): C. Williams, J. Heringer	Project Name: July 2000 Quarterly Sampling
Well Depth: 20.8	Project #: AFC001-33DCA Date: 7/10/00 Time: 1320
DTW (ft): 16.6 DTP (ft): NA	Courier: X FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: 0	Sampling Method: low-flow
Condition of Bottom of Well: N/A	Type of Pump: dedicated bladder
Screen Interval (ft): 10.5 - 20.5	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):
Well Diameter (in): 2	Sunny, Clear, 100°, Wind from SE.
Placement of Pump (ft): 18.5 inlet	

(ded. pump set at 19.5 - raised one foot)

Field Parameters

	Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
1331	~~1331~~ ~~1328~~	*	0.3	0.0	6.73	21.3	286	236	5.37	52	
1334	~~1534~~	*	0.3	0.9	6.71	21.03	280	255	5.43	22	
1337	~~1537~~	*	0.3	1.8	6.71	20.97	279	266	~~5.47~~ 5.49	14	(DO: 5.49 mg/L)
1340	~~1540~~	*	0.3	2.7	6.71	20.96	279	273	5.47	10	
1343	~~1543~~	*	0.3	3.6	6.71	20.91	279	280	5.42	7.5	
1346	~~1546~~	*	0.3	4.5	6.72	20.91	279	287	5.26	5.4	
1349	~~1549~~	*	0.3	5.4	6.72	20.90	279	288	5.43	5.1	
1355	~~1555~~	Collect samples.									

Observations

Color: (Clear) Other (describe) Clear

Odor: (None) Low Medium High Very Strong H2S Fuel-like None

Notes: * Unable to measure depth to water; water level below top of pump

Signed/Sampler(s) C. Williams

GROUNDWATER FIELD SAMPLING DATA SHEET

647171

Well No.: W1TCTA004	Location: NAS Fort Worth JRB, Texas
Sampler(s): NHader, J Wallace	Project Name: July 2000 Quarterly Sampling
Well Depth: 18.56	Project #: AFC001-33DCA Date: 7-~~10~~-13-00 Time: ~~1247~~ 1310
DTW (ft): * DTP (ft): NA	Courier: X FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface. -0.35	Sampling Method: ~~B~~ NH Low Flow
Condition of Bottom of Well:	Type of Pump: Bladder - dedicated
Screen Interval (ft): 10.95 - 18.2	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, 97°F, humid with wind to the N.
Well Diameter (in): 2	
Placement of Pump (ft). top = 12.55 inlet = ~~14.56~~ 14.0 NH	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
1315	*	0.1	0	6.72	26.90	482	88.8	0.84	50.5	clear
1318	*	0.1	0.3	6.69	27.46	494	83.2	0.79	41.4	"
1321	*	0.1	0.6	6.63	28.89	519	58.1	0.74	29.2	"
1324	*	0.05	0.9	6.63	29.59	533	21.1	0.70	20.9	"
1327	*	0.2	1.35	6.65	30.24	549	-16.5	0.67	11.3	"
1330	*	0.17	1.95	6.63	28.39	529	-43.4	0.59	7.1	"
1333	*	0.17	2.46	6.61	27.04	523	-61.2	0.47	4.8	"
1336	*	0.2	2.96	6.60	26.82	525	-72.2	0.40	3.9	"
1339	*	0.2	3.56	6.60	26.65	526	-81.2	0.34	3.0	"
1342	*	0.2	4.16	6.60	26.57	529	-88.8	0.34	2.4	"
1345	*	collect sample				W1TCTA004				

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H2S Fuel-like

Notes: * Below top of pump

Signed/Sampler(s): NHader, JWall

.647.172

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No : WITCTA010	Location: NAS Fort Worth JRB, Texas
Sampler(s): N Hade J Heringer	Project Name: July 2000 Quarterly Sampling
Well Depth: 18.47	Project #: AFC001-33DCA Date: 7.11.00 Time: 1340
DTW (ft): * DTP (ft): NA	Courier: X FedEx ___ UPS ___ Hand ___ Other
MP Ht. Above/Below Ground Surface: -0 43	Sampling Method: Low flow
Condition of Bottom of Well:	Type of Pump: Bladder dedicated
Screen Interval (ft): 10.97 - 18.22	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, humid, wind to N., 98 °F
Well Diameter (in): 2	
Placement of Pump (ft): top at 14.8	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond (umhos/cm)	ORP (mv)	DO (mg/L)	Turb (NTU)	Type, Size, and Amount of Sediment Discharged
1342	*	0.3	0	7.28	25.38	229.0	-174.3	0.26	8.7	clear
1345	*	0.15	0.9	7.21	26.08	230.0	-173.8	0.26	5.9	"
1348	*	0.20	1.35	7.10	28.43	229.0	-173.4	0.27	3.8	"
1351	*	0.05	1.95	7.11	28.80	243.0	-173.2	0.28	2.2	"
1354	*	0.20	~~2.65~~ 2.195	7.10	26.72	231.0	-174.3	0.19	2.1	"
1357	*	0.20	2.70	7.06	25.64	226.0	-174.7	0.16	1.0	"
1400	*	0.25	3.45	7.05	25.71	226.0	-175.2	0.14	1.0	"
1403	collect	sample		WITCTA010WG2						

Observations

Color: (Clear) Other (describe):

Odor: None Low Medium (High) Very Strong (H2S) Fuel-like

Notes: * Water is below top of pump

Signed/Sampler(s): [signature]

GROUNDWATER FIELD SAMPLING DATA SHEET

1647173

Well No.:	WITCTA017	Location:	NAS Fort Worth JRB, Texas
Sampler(s):	N Hade J Heringer	Project Name:	July 2000 Quarterly Sampling
Well Depth:	13.90	Project #:	AFC001-33DCA Date: 7.12.00 Time: 0835
DTW (ft): *	DTP (ft): NA	Courier: X FedEx ___ UPS ___ Hand ___ Other	
MP Ht. Above/Below Ground Surface:	-0.1	Sampling Method:	Low Flow
Condition of Bottom of Well:		Type of Pump:	dedicated bladder
Screen Interval (ft):	6.5 - 13.75	Weather (sun/clear, overcast/rain, wind direction, ambient temperature):	Sunny, wind to N, 92°F, humid
Well Diameter (in):	2		
Placement of Pump (ft):	top of pump = 9.25'		

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
0845	*	0.25	0	6.91	23.69	287	262.1	5.44	70.0	Slightly cloudy
0848	*	0.2	0.75	6.88	23.63	268	264.6	5.14	79.0	"
0851	*	0.25	1.35	6.88	23.51	260	265.8	5.01	38.0	clear
0854	*	0.2	2.10	6.87	23.70	257	266.0	4.65	17.2	"
0857	*	0.2	2.70	6.87	23.71	256	267.9	4.35	9.2	"
0900	*	0.2	3.30	6.87	23.64	256	268.2	4.20	5.2	"
0903	*	0.2	3.90	6.87	23.57	256	268.8	4.18	3.2	
0906	*	collect sample			WITCTA017WG12					

Observations

Color: Clear Other (describe):

Odor: None Low Medium High Very Strong H2S Fuel-like

Notes: * water is below top of pump

Signed/Sampler(s) [signature] [signature]

647.174

GROUNDWATER FIELD SAMPLING DATA SHEET

Well No.: WITCTA024	Location: NAS Fort Worth JRB, Texas
Sampler(s): NHade JHeiger	Project Name: July 2000 Quarterly Sampling
Well Depth: 23.23	Project #: AFC001-33DCA Date: 7.12.00 Time: 0945
DTW (ft): 17.35 DTP (ft):	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface: -0.47	Sampling Method: Low Flow
Condition of Bottom of Well:	Type of Pump: dedicated ~~fan~~ bladder
Screen Interval (ft): 12.76 - 22.51	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, humid, wind to NE 94°F
Well Diameter (in). 2	
Placement of Pump (ft): top of pump 17.6'	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
0954	17.36	0.25	0	6.93	25.01	330	-77.4	5.25	14.7	clear
0957	17.37	0.25	0.75	6.97	24.79	325	-73.5	3.95	10.5 ~~2.5~~	"
1000	17.37	0.3	1.50	6.98	23.97	323	-71.7	2.91	8.0	"
1003	17.37	0.3	2.40	6.99	23.92	322	-70.8	2.23	5.8	"
1006	17.37	0.35	3.30	6.97	23.72	320	-79.3	1.71	3.6	"
1009	17.37	0.35	4.35	6.97	23.66	320	-88.7	1.38	3.4	"
1012	17.37	0.40	5.40	6.98	23.62	320	-87.8	1.19	2.3	"
1015	17.37	0.40	6.60	6.99	23.64	320	-83.9	1.03	2.1	"
1018	17.39	0.40	7.80	6.99	23.64	320	-76.3	0.93	1.9	"
1021	17.39	0.40	9.00	6.99	23.55	319	-73.4	0.84	1.4	"
1024	collect sample WITCTA024WG-12									

Observations

Color (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H2S Fuel-like

Notes:

Signed/Sampler(s): NHade JHeiger

GROUNDWATER FIELD SAMPLING DATA SHEET

647 175

Well No : WJETA535	Location. NAS Fort Worth JRB, Texas
Sampler(s): N Hache J Hersiger	Project Name: July 2000 Quarterly Sampling
Well Depth: —	Project #: AFC001-33DCA Date: 7-11-00 Time 0945
DTW (ft): * DTP (ft): NA	Courier: X FedEx ___UPS ___Hand ___Other
MP Ht. Above/Below Ground Surface. -0.21	Sampling Method : Low flow
Condition of Bottom of Well: —	Type of Pump: Bladder dedicated
Screen Interval (ft): 33.14 - 42.14	Weather (sun/clear, overcast/rain, wind direction, ambient temperature): Sunny, wind to N, 92°F
Well Diameter (in): 2	
Placement of Pump (ft): top of pump 34.55	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (L/m)	Total Volume (L)	pH	Temp. (C)	Cond. (umhos/cm)	ORP (mv)	DO (mg/L)	Turb. (NTU)	Type, Size, and Amount of Sediment Discharged
0948	*	0.2	0	6.92	21.62	249	182.4	5.82	22.3	clear
0952	*	0.15	0.6	6.85	23.65	259	191.7	5.85	19.2	"
0955	*	0.25	0.9	6.84	22.43	254	197.3	5.85	12.6	"
0958	*	0.25	1.65	6.82	22.06	252	203.9	6.01	5.0	"
1002	*	0.25	2.40	6.80	21.88	251	213.7	5.88	3.9	"
1005	*	0.30	3.15	6.80	21.85	251	217.6	5.90	3.5	"
1008	*	collect sample			WJETA535WG12					

Observations

Color: Clear Other (describe):

Odor: None Low Medium High Very Strong H2S Fuel-like

Notes: * water is below top of pump

Signed/Sampler(s):

APPENDIX A.4

FIELD SAMPLING REPORTS

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 177

LOCATION: NAS Fort Worth JRB, Texas — PROJECT NAME: July 2000 Quarterly Sampling

SITE: Plume Monitoring Well — PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID GMI-22-06MWG12 — DATE: 7-11-00 TIME: 1514

MATRIX TYPE: WG.

SAMPLING METHOD: Low Flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 00000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD). —

FIELD DUP (FD): —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB) TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0 ppm	COLOR	Clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.82 Temperature 23.59 (C) Dissolved Oxygen 0.40 (mg/L) ~~Specific~~ Conductivity 353 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 87.8 (mv) Turbidity 0.21 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 100°F

SHIPMENT VIA. FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS:

SAMPLER: W Hauda OBSERVER: J Herringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 178

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID GMI-22-07MWG12

DATE: ~~7-10-00~~ WH 7.11.00 TIME: 1134

MATRIX TYPE: WG

SAMPLING METHOD: Low flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 200000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT)

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) GMI-22-07MWG12MS

MATRIX SPIKE DUP (SD). GMI-22-07MWG12MD

FIELD DUP (FD). –

AMBIENT BLANK (AB) –

EQUIPMENT BLANK (EB) –

TRIP BLANK (TB) ~~TB071000~~ WH TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0ppm	COLOR	Clear	
2nd	0ppm	ODOR	none	
		OTHER		

pH 6.80 Temperature 24.30 (C) Dissolved Oxygen 4.0 (mg/L) ~~Specific~~ Conductivity 318 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 225.2 (mv) Turbidity 6.3 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 99°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS

SAMPLER N Hade OBSERVER: J Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

U.I. TAB

647 179

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

L TION: NAS Fort Worth JRB, Texas

PROJECT NAME: July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID GMI-22-07MWG12MS

DATE: 7.11.00 TIME: 1134

MATRIX TYPE: WG

SAMPLING METHOD: Low Flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 000000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) of GMI-22-07MWG12

MATRIX SPIKE DUP (SD) GMI-22-07MWG12MSD

FIELD DUP (FD) —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) TB

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0ppm	COLOR	clear	
2nd	0ppm	ODOR	none	
		OTHER		

pH 6.80 Temperature 24.30 (C) Dissolved Oxygen 4.0 (mg/L) Specific Conductivity 318 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 225.2 (mv) Turbidity 6.3 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 98°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS.

SAMPLER: N Hade OBSERVER J Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 180

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME. July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID GMI-22-07MWG12MSD

DATE: 7.11.00 TIME: 1134

MATRIX TYPE: WG

SAMPLING METHOD: BP, low flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 70000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): GMI-22-07MWG12MS

MATRIX SPIKE DUP (SD). GMI-22-07MWG12MD

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB). —

TRIP BLANK (TB) TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0 ppm	COLOR	Clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.80 Temperature 24.30 (C) Dissolved Oxygen 4.0 (mg/L) ~~Specific~~ Conductivity 318 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 225.2 (mv) Turbidity 6.3 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 98°F

SHIPMENT VIA: FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS.

SAMPLER: N Hale OBSERVER J Hesing

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 181

LOCATION:	NAS Fort Worth JRB, Texas	PROJECT NAME	July 2000 Quarterly Sampling
SITE:	TCE Plume	PROJECT NAME.	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID HM-123WG12

DATE: 7-12-00 TIME: 1157

MATRIX TYPE: WG

SAMPLING METHOD: BP; Low flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY # 210000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS). –

MATRIX SPIKE DUP (SD): –

FIELD DUP (FD): ~~DUP01WG12~~ NH

AMBIENT BLANK (AB): –

EQUIPMENT BLANK (EB) –

TRIP BLANK (TB) TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 4 ppm at Wellhead	COLOR Clear	
2nd 0.0 ppm in BZ	ODOR None	
	OTHER –	

pH 6.62 Temperature 22.47 (C) Dissolved Oxygen 0.16 (mg/L) ~~Specific~~ CW Conductivity 232 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 193 (mv) Turbidity ~~1.93 ft~~ (NTU) 1.97 NTU

GENERAL INFORMATION

WEATHER. SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION Wind from SW AMBIENT TEMPERATURE 100°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO. STL - Chicago

COMMENTS:

SAMPLER J. Wallace OBSERVER C. Williams

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic 647 182 FIELD SAMPLING REPORT

LOCATION NAS Ft Worth JRB

SITE: TCE Plume Monitoring

PROJECT NAME ~~WAA Investigation~~ July 2000 Quarterly

PROJECT NAME. AFC001-~~15BBH~~ 33DCA

SAMPLE INFORMATION

SAMPLE ID HM-126

DATE: 7/14/00 TIME: 1010

MATRIX TYPE GW

SAMPLING METHOD: LOW FLOW

LOT CONTROL #: 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY # 240000

SAMPLE BEG DPETH (FT) N/A

SAMPLE END DPETH (FT) N/A

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) —

MATRIX SPIKE DUP (SD) —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) TB071400

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40mL VOA	3	Cool to 4C/HCL pH <2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0 ppm	COLOR.	clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.75 Temperature 24.33 (C) Dissolved Oxygen 2.09 (mg/L) ~~Specific~~ SW Conductivity 709 (umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential 156.4 (mv) Turbidity 2.42 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 83°

SHIPMENT VIA FEDEX X HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS

SAMPLER. C. Williams OBSERVER: J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic Inc

FIELD SAMPLING REPORT

647 183

LOCATION:	NAS Fort Worth JRB, Texas	PROJECT NAME.	July 2000 Quarterly Sampling
SITE:	TCE Plume Monitoring	PROJECT NAME.	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID ITMW-01TWG12

DATE: 7/13/00 TIME: 0845

MATRIX TYPE: WG

SAMPLING METHOD: Low FLOW BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000 NH 220000

SAMPLE BEG DPETH (FT) N/A

SAMPLE END DPETH (FT) N/A

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) TB071300

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
1 L poly	1	Cool to 4C/HNO3 pH<2	SW6010B/SW7471	Total Metals + Hg
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0.00 ppm	COLOR	clear	
2nd	0.00 ppm	ODOR	none	
		OTHER		

pH 6.56 Temperature 21.28 (C) Dissolved Oxygen 0.25 (mg/L) ~~Specific~~ qw Conductivity 370 (umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential 237.6 (mv) Turbidity 0.19 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NE AMBIENT TEMPERATURE 88°

SHIPMENT VIA: FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS

SAMPLER: N. Hado OBSERVER J. Walker

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 184

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

SITE: TCE Plume

PROJECT NAME: July 2000 Quarterly Sampling

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID: LF03-3DWG12

DATE: 7/12/00 TIME: 1409

MATRIX TYPE: WG

SAMPLING METHOD: Bladder

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG DPETH (FT) N/A

SAMPLE END DPETH (FT) N/A

GRAB ( ) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB): TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0.00 ppm	COLOR	clear	
2nd	0.00 ppm	ODOR	none	
		OTHER		

pH 6.69 Temperature 25.55 (C) Dissolved Oxygen 3.43 (mg/L) ~~Specific~~ Conductivity 360 (umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential 191.6 (mv) Turbidity 4.79 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 95°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO. STL - Chicago

COMMENTS:

SAMPLER: N. Hade OBSERVER: J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 185

LOCATION:	NAS Fort Worth JRB, Texas	PROJECT NAME	July 2000 Quarterly Sampling
SITE:	TCE Plume Monitoring	PROJECT NAME:	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID LF05-01WG12

DATE: 7/13/00 TIME: 1545

MATRIX TYPE: WG

SAMPLING METHOD: LOW FLOW

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: ~~210000~~ 220000

SAMPLE BEG DPETH (FT) N/A

SAMPLE END DPETH (FT) N/A

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) —

MATRIX SPIKE DUP (SD) —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) TB071300

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH < 2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR clear w/ rust particles	
2nd	ODOR none	
	OTHER	

pH _____ Temperature _____(C) Dissolved Oxygen _____(mg/L) ~~Specific~~ SW Conductivity _____(umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential _____(mv) Turbidity _____ (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 105°

SHIPMENT VIA FEDEX x HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: STL - Chicago

COMMENTS: _____

SAMPLER: N. Hade OBSERVER: J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 186

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME. July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID LF05-5GWG12

DATE: 7-11-00 TIME: 0904

MATRIX TYPE: WG

SAMPLING METHOD: Low Flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 000000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): DUP02WG12

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB) TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	3.3 ppm	COLOR	clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.63 Temperature 24.01 (C) Dissolved Oxygen 1.23 (mg/L) ~~Specific~~ Conductivity 332 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 24.02 (mv) Turbidity 1.6 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 85°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS

SAMPLER J Heringer OBSERVER N Hale

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 187

L TION: NAS Fort Worth JRB, Texas

PROJECT NAME July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID DUP02WG12

DATE: 7.11.00 TIME: 1200 (0904)

MATRIX TYPE: WG

SAMPLING METHOD: lowflow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 000000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): –

MATRIX SPIKE DUP (SD): –

FIELD DUP (FD). of LF05-5GLWG12

AMBIENT BLANK (AB): –

EQUIPMENT BLANK (EB) –

TRIP BLANK (TB) TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	3.3ppm	COLOR	clear	
2nd	0ppm	ODOR	none	
		OTHER		

pH 6.63 Temperature 24.01 (C) Dissolved Oxygen 1.23 (mg/L) ~~Specific~~ Conductivity 332.0 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 24.02 (mv) Turbidity 1.6 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 85°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS:

SAMPLER: J Heinges OBSERVER: N Hade

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 188

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID MW-53WG12

DATE: 7·12·00 TIME: 1141

MATRIX TYPE: WG

SAMPLING METHOD: Lowflow: BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB) TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0ppm	COLOR	clear	
2nd	0ppm	ODOR	none	
		OTHER:		

pH 6.95 Temperature 22.33 (C) Dissolved Oxygen 4.00 (mg/L) ~~Specific~~ Conductivity 195.0 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 233.1 (mv) Turbidity 1.1 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NE AMBIENT TEMPERATURE 95°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS

SAMPLER N Hade OBSERVER: J Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 189

LOCATION: NAS Fort Worth JRB, Texas
PROJECT NAME: July 2000 Quarterly Sampling
SITE: TCE Plume Monitoring
PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID: SPOT35-5WG12
DATE: 7/13/00 TIME: 1129

MATRIX TYPE: WG

SAMPLING METHOD: LOW FLOW : BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 220000

SAMPLE BEG DPETH (FT): N/A

SAMPLE END DPETH (FT): N/A

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB): TB071300

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	10.2 ppm	COLOR	Clear w/ small rust particles	
2nd	0.00 ppm	ODOR	none	
		OTHER		

pH 6.61 Temperature 25.29 (C) Dissolved Oxygen 0.27 (mg/L) ~~Specific~~ Conductivity 482 (umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential -131.0 (mv) Turbidity 5.18 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NE AMBIENT TEMPERATURE 95°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS

SAMPLER N. Hade OBSERVER J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 190

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID USGS07TWG12

DATE: 7.12.00 TIME: 1427

MATRIX TYPE: WG

SAMPLING METHOD: low flow: BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): –

MATRIX SPIKE DUP (SD) –

FIELD DUP (FD). –

AMBIENT BLANK (AB) –

EQUIPMENT BLANK (EB) –

TRIP BLANK (TB): TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
1 L poly	1	Cool to 4C/HNO3 pH<2	SW6010B/SW7471	Total Metals + Hg
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0ppm	COLOR	Clear	
2nd	0ppm	ODOR	none	
		OTHER.		

pH 6.85 Temperature 23.53 (C) Dissolved Oxygen 3.36 (mg/L) ~~Specific~~ Conductivity 200 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 288.1 (mv) Turbidity 18 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NE AMBIENT TEMPERATURE 100°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS: Serial dilution run on metals

SAMPLER K Hade OBSERVER L Morgan

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 191

LOCATION: NAS Fort Worth JRB, Texas
SITE: TCE Plume

PROJECT NAME: July 2000 Quarterly Sampling
PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID W-153WG12

DATE: 7-12-00 TIME: 1555

MATRIX TYPE: WG

SAMPLING METHOD: BP; Low flow

LOT CONTROL #: 0 0 1 A
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 010000

SAMPLE BEG DPETH (FT) —
SAMPLE END DPETH (FT) —
GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —
MATRIX SPIKE DUP (SD): —
FIELD DUP (FD) —
AMBIENT BLANK (AB): —
EQUIPMENT BLANK (EB) —
TRIP BLANK (TB): TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0 ppm	COLOR Clear	
2nd 0.0 ppm	ODOR None	
	OTHER —	

pH 6.30 Temperature 24.07 (C) Dissolved Oxygen 3.43 (mg/L) ~~Specific~~ Conductivity 243 (umhos/cm)
Iron — (mg/L) Oxidation/Reduction Potential 177 (mv) Turbidity 6.69 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION From the SW AMBIENT TEMPERATURE 100°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS:

SAMPLER: J. Wallace OBSERVER: C. Williams

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPDDN
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 192

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME July 2000 Quarterly Sampling

SITE: Plume Monitoring Wells

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WJETA535WG12

DATE: 7·11·00 TIME: 1008

MATRIX TYPE: WG

SAMPLING METHOD: BP; low flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 00000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD) —

FIELD DUP (FD): —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB) TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
1 L poly	1	Cool to 4C/HNO3 pH<2	SW6010B/SW7471	Total Metals + Hg
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0 ppm	COLOR	Clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.80 Temperature 21.85 (C) Dissolved Oxygen 5.70 (mg/L) ~~Specific~~ Conductivity 251 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 217.6 (mv) Turbidity 3.5 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 92°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS

SAMPLER: N Hobe OBSERVER: J Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 193

LOCATION	NAS Fort Worth JRB, Texas	PROJECT NAME	July 2000 Quarterly Sampling
SITE:	TCE Plume	PROJECT NAME	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WHGLRW015WG12

DATE: 7-10-00 TIME: 1520

MATRIX TYPE: WG

SAMPLING METHOD: BP, low flow

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 200000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB ✓ COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS). –

MATRIX SPIKE DUP (SD) –

FIELD DUP (FD) –

AMBIENT BLANK (AB). –

EQUIPMENT BLANK (EB): –

TRIP BLANK (TB) TB071000

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0 ppm	COLOR Clear	
2nd 0.0 ppm	ODOR None	
	OTHER –	

pH 6.38 Temperature 21.52 (C) Dissolved Oxygen 3.18 (mg/L) ~~Specific~~ CW Conductivity 402 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 304 (mv) Turbidity 1.40 (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION From SE AMBIENT TEMPERATURE 100°

SHIPMENT VIA: FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS:

SAMPLER C. Williams OBSERVER J. Neringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 194

FIELD SAMPLING REPORT

HYDRO GeoLogic

LOCATION NAS Ft Worth JRB

SITE: TCE Plume

PROJECT NAME ~~VOA Investigation~~ July 2000 Quarterly

PROJECT NAME AFC001-~~15BH~~ 33 DCA

SAMPLE INFORMATION

SAMPLE ID WHGLRW017 WG12

DATE: 7-14-00 TIME: 1010

MATRIX TYPE: GW

SAMPLING METHOD BP; Low flow

LOT CONTROL # 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY # 230000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) —

MATRIX SPIKE DUP (SD). —

FIELD DUP (FD) Dup01WG12

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) EB071400

TRIP BLANK (TB). TB071400

CONTAINER SIZE/TYPE	#	PRESERVATIVE PREPARATION	ANALYTICAL METHOD	ANALYSIS
40ml VOA	3	Cool to 4C HCl pH <2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	0.0ppm	COLOR Clear	
2nd	0.0ppm	ODOR	
		OTHER	

pH 6.67 Temperature 22.43 (C) Dissolved Oxygen 4.22 (mg/L) ~~Specific~~ Conductivity 331 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 227 (mv) Turbidity 8.10 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 90°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS Associated with Dup01WG12

SAMPLER: J. Wallace OBSERVER C. Williams

MATRIX TYPE CODES.		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

L TION: NAS Fort Worth JRB, Texas

SITE: TCE Plume

PROJECT NAME: ~~April 2000~~ July 2000 Quarterly Sampling

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID ~~TB07-00~~ DUP01WG12

DATE: 7-14-00 TIME: 1200 *

MATRIX TYPE: WG

SAMPLING METHOD: BP; Low flow

LOT CONTROL #: 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 230000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB): EB071400

TRIP BLANK (TB) TB071400

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0 ppm	COLOR Clear	
2nd 0.0 ppm	ODOR None	
	OTHER —	

pH 6.67 Temperature 22.43 (C) Dissolved Oxygen 4.22 (mg/L) ~~Specific~~ Conductivity 331 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential 227 (mv) Turbidity 8.10 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 90°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS * Associated with sample WHGLRW017WG12 collected at 1010.

SAMPLER J. Wallace OBSERVER: C. William

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 196

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION. NAS Fort Worth JRB, Texas

PROJECT NAME. July 2000 Quarterly Sampling

SITE. TCE Plume Monitoring

PROJECT NAME. AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WHGLTA011WG12

DATE: 7/13/00 TIME: 1006

MATRIX TYPE: WG

SAMPLING METHOD. LOW FLOW. BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: ~~[illegible]~~ NH 220000

SAMPLE BEG DPETH (FT) N/A

SAMPLE END DPETH (FT) N/A

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) —

MATRIX SPIKE DUP (SD) —

FIELD DUP (FD) —

AMBIENT BLANK (AB). —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) TB071300

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0.00 ppm	COLOR	clear	
2nd	0.00 ppm	ODOR	none	
		OTHER		

pH 6.90 Temperature 24.70 (C) Dissolved Oxygen 1.10 (mg/L) ~~Specific~~ gw Conductivity 573 (umhos/cm)

Iron N/A (mg/L) Oxidation/Reduction Potential 218.6 (mv) Turbidity 4.77 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NE AMBIENT TEMPERATURE 90°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS

SAMPLER N. Hadl OBSERVER J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas
SITE: TCE Plume

PROJECT NAME: July 2000 Quarterly Sampling
PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID: WHGLTA025WG12

DATE: 7-10-00 TIME: 1355

MATRIX TYPE: WG

SAMPLING METHOD: BP, low flow

LOT CONTROL #: 0 0 1 A
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 290000

SAMPLE BEG DPETH (FT) —
SAMPLE END DPETH (FT) —
GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —
MATRIX SPIKE DUP (SD): —
FIELD DUP (FD): —
AMBIENT BLANK (AB): —
EQUIPMENT BLANK (EB): —
TRIP BLANK (TB): TB071000

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0 ppm	COLOR Clear	
2nd 0.0 ppm	ODOR None	
	OTHER —	

pH 6.72 Temperature 20.90 (C) Dissolved Oxygen 5.43 (mg/L) ~~Specific~~ Cond Conductivity 279 (umhos/cm)
Iron — (mg/L) Oxidation/Reduction Potential 288 (mv) Turbidity 5.1 (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION From SE AMBIENT TEMPERATURE 100°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS

SAMPLER C. Williams OBSERVER J. Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 198

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION:	NAS Fort Worth JRB, Texas	PROJECT NAME	July 2000 Quarterly Sampling
SITE:	Plume Monitoring Well	PROJECT NAME	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WITCTA004WG12

DATE: ~~7-10-00~~ 7.13.00 TIME 1345

MATRIX TYPE: WG

SAMPLING METHOD: Low Flow: BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: ~~210000~~ NH 220000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD). —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) ~~TB071000~~ NH TB071300

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	3.3 ppm	COLOR	Clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.60 Temperature 26.57 (C) Dissolved Oxygen 0.34 (mg/L) ~~Specific~~ Conductivity 529 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential -88.8 (mv) Turbidity 2.4 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 97°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO. STL - Chicago

COMMENTS

SAMPLER N Hade OBSERVER. J Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

0 . 5 647 199

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

L TION: NAS Fort Worth JRB, Texas

SITE: Plume Monitoring Well

PROJECT NAME. July 2000 Quarterly Sampling

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WITCTA010WG12

DATE: 7.11.00 TIME: 1403

MATRIX TYPE: WG

SAMPLING METHOD:

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 00000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS). —

MATRIX SPIKE DUP (SD). —

FIELD DUP (FD). —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB). —

TRIP BLANK (TB). TB071100

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0ppm	COLOR	clear	
2nd	0ppm	ODOR	strong H_2S	
		OTHER		

pH 7.05 Temperature 25.71 (C) Dissolved Oxygen 0.14 (mg/L) ~~Specific~~ Conductivity 226 (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential -175.2 (mv) Turbidity 1.0 (NTU)

GENERAL INFORMATION

WEATHER (SUN/CLEAR) X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 90°F

SHIPMENT VIA. FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS:

SAMPLER: K. Hade OBSERVER L. Morgan

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 200

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME: July 2000 Quarterly Sampling

SITE: Plume Monitoring Well

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID: WITCTA017WG12

DATE: 7.12.00 TIME: 0905

MATRIX TYPE: WG

SAMPLING METHOD: Low Flow BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS). –

MATRIX SPIKE DUP (SD) –

FIELD DUP (FD). –

AMBIENT BLANK (AB) –

EQUIPMENT BLANK (EB): –

TRIP BLANK (TB) TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
1 L poly	1	Cool to 4C/HNO3 pH<2	SW6010B/SW7471	Total Metals + Hg
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	0 ppm	COLOR	clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.87 Temperature 23.57 (C) Dissolved Oxygen 4.18 (mg/L) ~~Specific~~ Conductivity 256 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential 268.8 (mv) Turbidity 3.2 (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 92°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS:

SAMPLER: NHade OBSERVER: JHeringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 201

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

L TION:	NAS Fort Worth JRB, Texas	PROJECT NAME	July 2000 Quarterly Sampling
SITE:	Plume Monitoring Well	PROJECT NAME	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID WITCTA024WG12

DATE: 7.12.00 TIME: 1024

MATRIX TYPE: WG

SAMPLING METHOD: Lowflow: BP

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) –

MATRIX SPIKE DUP (SD) –

FIELD DUP (FD): –

AMBIENT BLANK (AB). –

EQUIPMENT BLANK (EB) –

TRIP BLANK (TB): TB071200

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	10.5 ppm	COLOR	Clear	
2nd	0 ppm	ODOR	none	
		OTHER		

pH 6.99 Temperature 23.64 (C) Dissolved Oxygen 0.84 (mg/L) ~~Specific~~ Conductivity 319 (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential -73.4 (mv) Turbidity _____ (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 94°F

SHIPMENT VIA. FEDEX x HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: STL - Chicago

COMMENTS _____

SAMPLER NHade OBSERVER JHeringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 202

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME: ~~Apr~~ July 2000 Quarterly Sampling

SITE: Field house

PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID ~~AB07_00~~ TB071000

DATE: 7-10-00 TIME: 0900

MATRIX TYPE: WG

SAMPLING METHOD: G

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 200000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD). —

FIELD DUP (FD) —

AMBIENT BLANK (AB) —

EQUIPMENT BLANK (EB) —

TRIP BLANK (TB) ✓

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH < 2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	—	COLOR	—	
2nd	—	ODOR.	—	
		OTHER	—	

pH — Temperature — (C) Dissolved Oxygen — (mg/L) Specific Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR ____ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE ____

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS: Bubbles in both containers.

SAMPLER C. Williams OBSERVER: N. Hade

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas

SITE: Field house

PROJECT NAME: ~~April~~ July 2000 Quarterly Sampling

PROJECT NAME: AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID: ~~AB07-00~~ ~~TB0710~~ TB071100

DATE: 7-11-00 TIME: 0745

MATRIX TYPE: WG

SAMPLING METHOD: G

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 200000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD) —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB) ✓

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	—	COLOR	—	
2nd	—	ODOR	—	
		OTHER	—	

pH — Temperature — (C) Dissolved Oxygen — (mg/L) Specific Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____

SHIPMENT VIA: FEDEX x HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: STL - Chicago

COMMENTS: _____

SAMPLER: N. Hade OBSERVER: C Williams

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 204

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas PROJECT NAME ~~April~~ July 2000 Quarterly Sampling

SITE: Field House - Plume Monitoring Wells PROJECT NAME AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID TB071200 DATE: 7-12-00 TIME: 0705

MATRIX TYPE: WG

SAMPLING METHOD: ~~Low Flow~~ NW Lab Pump

LOT CONTROL #: 0 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 210000

SAMPLE BEG. DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS). —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD) —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): —

TRIP BLANK (TB): *

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	—	COLOR	—	
2nd	—	ODOR	—	
		OTHER		

pH — Temperature — (C) Dissolved Oxygen — (mg/L) ~~Specific~~ Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 85°F

SHIPMENT VIA. FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS: Bubbles in VOA vials

SAMPLER N Hade OBSERVER. Y Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 205

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME ~~April~~ July 2000 Quarterly Sampling

SITE: Plume Monitoring - Field House

PROJECT NAME. AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID TB07/300

DATE: 07.13.00 TIME: 0705

MATRIX TYPE: WG

SAMPLING METHOD: LP

LOT CONTROL #: 0 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 220000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT) –

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) –

MATRIX SPIKE DUP (SD): –

FIELD DUP (FD): ~~Duplicate 12~~ NH

AMBIENT BLANK (AB): –

EQUIPMENT BLANK (EB): –

TRIP BLANK (TB). *

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	–	COLOR	–	
2nd	–	ODOR.	–	
		OTHER.		

pH – Temperature – (C) Dissolved Oxygen – (mg/L) ~~Specific~~ Conductivity – (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential – (mv) Turbidity – (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION N AMBIENT TEMPERATURE 85°F

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS One VOA vial contains a bubble

SAMPLER. N Hade OBSERVER: J Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 206

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas PROJECT NAME ~~April 2000~~ July 2000 Quarterly Sampling

SITE: Route 183 / Monitoring Well WHGLRM07 PROJECT NAME. AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID AB071400 DATE: 7-14-00 TIME: 1035

MATRIX TYPE: WG

SAMPLING METHOD: Grab

LOT CONTROL #: 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 230000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT) —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB): ✓

EQUIPMENT BLANK (EB): EB071400

TRIP BLANK (TB): TB071400

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	0.0ppm	COLOR: Clear	
2nd	—	ODOR: —	
		OTHER:	

pH — Temperature — (C) Dissolved Oxygen — (mg/L) Specific Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR ✓ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 90°

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS

SAMPLER: C. Williams OBSERVER: J. Wallace

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 207

L TION:	NAS Fort Worth JRB, Texas	PROJECT NAME	~~April 2000~~ July 2000 Quarterly Sampling
SITE:	Field house	PROJECT NAME	AFC001-33DCA

SAMPLE INFORMATION

SAMPLE ID TB071400

DATE: 7-14-00 TIME: 0715

MATRIX TYPE: WG

SAMPLING METHOD: G

LOT CONTROL #: 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #. 230000

SAMPLE BEG DPETH (FT) –

SAMPLE END DPETH (FT). –

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS) –

MATRIX SPIKE DUP (SD) –

FIELD DUP (FD). –

AMBIENT BLANK (AB). –

EQUIPMENT BLANK (EB) EB071400

TRIP BLANK (TB) ✓

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3 2	Cool to 4C/HCl to pH<2	SW8260B	VOCs

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	–	COLOR	–	
2nd	–	ODOR.	–	
		OTHER	–	

pH – Temperature – (C) Dissolved Oxygen – (mg/L) Specific Conductivity – (umhos/cm)

Iron – (mg/L) Oxidation/Reduction Potential – (mv) Turbidity – (NTU)

GENERAL INFORMATION

WEATHER: SUN/CLEAR – OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE –

SHIPMENT VIA FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO. STL - Chicago

COMMENTS

SAMPLER: C. Williams OBSERVER. J. Heringer

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

647 208

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

LOCATION: NAS Fort Worth JRB, Texas — PROJECT NAME: RFI Phase III

SITE: Plume Monitoring Well — PROJECT NAME: AFC001-33CBD

SAMPLE INFORMATION

SAMPLE ID: EB072000 — DATE: 07 20 00 — TIME: 1130

MATRIX TYPE: WG

SAMPLING METHOD: Grab

LOT CONTROL #: 0 1 1 1

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 240000

SAMPLE BEG DPETH (FT): —

SAMPLE END DPETH (FT): —

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB): X

TRIP BLANK (TB): TB072000

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
1 L poly	1	Cool to 4C/HNO3 pH<2	SW6010B/SW7471	Total Metals + Hg
40 mL VOA	3	Cool to 4C/HCl to pH<2	SW8260B	VOCs (App IX)

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS		MISCELLANEOUS
1st	—	COLOR	—	
2nd	—	ODOR	—	
		OTHER		

pH — Temperature — (C) Dissolved Oxygen — (mg/L) Specific Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION NW AMBIENT TEMPERATURE 103°F

SHIPMENT VIA: FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO STL - Chicago

COMMENTS:

SAMPLER: W Harda OBSERVER: D. Martinez

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HYDRO GeoLogic INC

FIELD SAMPLING REPORT

647 209

LOCATION: NAS Fort Worth JRB, Texas

PROJECT NAME RFI Phase III

SITE: [illegible]

PROJECT NAME. AFC001-33CBD

SAMPLE INFORMATION

SAMPLE ID TB07[illegible]00

DATE: [illegible] TIME: [illegible]

MATRIX TYPE: WG

SAMPLING METHOD: LP

LOT CONTROL #: 0 1 1 A

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: 240000

SAMPLE BEG DPETH (FT) —

SAMPLE END DPETH (FT). —

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): —

MATRIX SPIKE DUP (SD): —

FIELD DUP (FD): —

AMBIENT BLANK (AB): —

EQUIPMENT BLANK (EB) [illegible]

TRIP BLANK (TB): ~~[illegible]~~

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
40 mL VOA	3	Cool to 4C/HCl to pH <2	SW8260B	VOCs (App IX)

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	—	COLOR. —	
2nd	—	ODOR —	
		OTHER	

pH — Temperature — (C) Dissolved Oxygen — (mg/L) Specific Conductivity — (umhos/cm)

Iron — (mg/L) Oxidation/Reduction Potential — (mv) Turbidity — (NTU)

GENERAL INFORMATION

WEATHER. SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION [illegible] AMBIENT TEMPERATURE [illegible]

SHIPMENT VIA: FEDEX x HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: STL - Chicago

COMMENTS ____

SAMPLER [illegible] OBSERVER: D. Martinez

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	HP=HYDRO PUNCH
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
		DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

AFCEE FORM SR.11

APPENDIX A.5

CHAINS OF CUSTODY

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Chicago Laboratory
2417 Bond Street
University Park, IL 60466
Phone 708-534-5200
Fax 708-534-5211

Report To:
Contact: Kim Evers
Company: HydroGeoLogic, Inc.
Address: 1155 Herndon Pkwy, Suite 900, Herndon, VA 20170
Phone: 703-478-5186
Fax: 703-471-4180
E-Mail: kevers@hgl.com

Bill To:
Contact: Kim Evers
Company:
Address: (Same)
Phone:
Fax:
PO#: Quote:

Shaded Areas For Internal Use Only — 1 of 1

Lab Lot # 9A07G070

Package Sealed: (Yes) No	Samples Sealed: Yes (No)
Received on Ice: (Yes) No	Samples Intact: (Yes) No
Temperature °C of Cooler: 2.4	
Within Hold Time: (Yes) No	Preserv. indicated: (Yes) No NA
pH Check ok: Yes No (NA)	Res Cl_2 Check ok: Yes No (NA)
Sample Labels and COC Agree: (Yes) No COC not present	

Sampler Name: Nicole Hade
Signature: [signature]
Project Name: July 2000 Quarterly Groundwater Investigation
Project Number: AFC 00133DCA
Project Location: NAS Fort Worth JRB
Date Required Hard Copy: 8/8/00
Fax: / /
Lab PM: Eric Lang

Refrg #	5	8
# Cont.	2	1
Volume	40ml	1L
Preserv	1	3

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOCs SW8260B	Total Metals + Hg (6010B/7470)	Additional Analyses / Remarks
001		WHGLTA025WG12	7-10-00	1355	W	G	3		
002		WHGLRW015WG12	7-10-00	1520	W	G	3		
003		GMI-22-07MWG12	7-11-00	1134	W	G	3		
		GMI-22-07MWG12MS	7-11-00	1134	W	G	3		
		GMI-22-07MWG12MSD	7-11-00	1134	W	G	3		
004		WJETA535WG12	7-11-00	1008	W	G	3	1	
005		LF05-5G WG12	7-11-00	0904	W	G	3		
006		WITCTA010WG12	7-11-00	1403	W	G	3		
007		Dup02 WG12	7-11-00	1200	W	G	3		
008		TB071100	7-11-00	0745	W	G	2		One of the tripblanks has a bu
009		GMI-22-06MWG12	7-11-00	1514	W	G	3		
010		TB071000	7-10-00	0900	W	G	2		Both containers have bubbles.

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	HydroGeologic	7-11-00	1600	[signature]	STL	7-12-00	1455
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe

Container Key
1 Plastic
2 VOA Vial
3 Sterile Plastic
4 Amber Glass
5 Widemouth Glass
6 Other

Preservative Key
1 HCl Cool to 4°
2 H2SO4 Cool to 4°
3 HNO3 Cool to 4°
4 NaOH, Cool to 4°
5 NaOH/Zn Acetate Cool to 4°
6 Cool to 4°

COMMENTS

Date Received: 7/12/00
Courier: FX
Hand Delivered: ☐
Bill of Lading: attached

1647 211

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Chicago Laboratory
2417 Bond Street
University Park, IL 60466
Phone 708-534-5200
Fax 708-534-5211

Report To:
Contact: Kim Evers
Company: HydroGeoLogic, Inc.
Address: 1155 Herndon Pkwy, Suite 900, Herndon, VA 20170
Phone: 703-478-5186
Fax: 703-471-4180
E-Mail: kevers@hgl.com

Bill To:
Contact: Kim Evers
Company:
Address: (same)
Phone:
Fax:
PO#: Quote:

Shaded Areas For Internal Use Only 1 of 1

Lab Lot # 9A0716112

Package Sealed: (Yes) No	Samples Sealed: Yes (No)
Received on Ice: (Yes) No	Samples Intact: (Yes) No
Temperature °C of Cooler: 2.7	
Within Hold Time: (Yes) No	Preserv. Indicated: (Yes) No NA
pH Check ok: Yes No (NA)	Res Cl_2 Check ok: Yes No (NA)
Sample Labels and COC Agree: (Yes) No COC not present	

Sampler Name: Catherine Williams
Signature: Cathi Williams
Project Name: July 2000 Quarterly Groundwater Investigation
Project Number: AFC 001 33 DCA
Project Location: NAS Fort Worth JRB
Date Required Hard Copy: 8/10/00
Fax: / /
Lab PM: Eric Lang

Refrg #	5	8
# Cont.	2	1
Volume	40ml	1L
Preserv	1	3

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time 0906	Matrix	Comp/Grab	VOCs (SW8260B)	Total Metals (6010)	Additional Analyses / Remarks
001		WITCTA017WG12	7/12/00	~~0835~~	W	G	3	1	
002		WITCTA024WG12	↓	1024	W	↓	3		
003		TB071200		0705	W	↓	3		
004		MW-53WG12	1141	~~1115~~ 1145	↓	↓	3		
005		LF03-3DWG12	↓	1409	↓	↓	3		
006		HM123WG12	↓	1157	↓	↓	3		
007		USGS07T	↓	1427	↓	↓	3	1	* serial dilution
008		W-153WG12	↓	1555	↓	↓	3		
		~~DUPOIWG12~~	7/12/00	0000	W	G	3		deleted due to bubbles
									will perform tomorrow

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	HGL	7/12/00	1700	[signature]	STL	7-14-00	1145
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe
O = _____

Container Key
1 Plastic
2 VOA Vial
3 Sterile Plastic
4 Amber Glass
5 Widemouth Glass
6 Other _____

Preservative Key
1 HCl Cool to 4°
2 H2SO4 Cool to 4°
3 HNO3, Cool to 4°
4 NaOH Cool to 4°
5 NaOH/Zn Acetate Cool to 4°
6 Cool to 4°
7 None

COMMENTS
210000

Date Received: 7/14/00
Courier: FX
Hand Delivered ☐
Bill of Lading: attached

647 212

647 213

Shaded Areas For Internal Use Only 1 of 1

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Chicago Laboratory
2417 Bond Street
University Park, IL 60466
Phone 708-534-5200
Fax 708-534-5211

Report To:
Contact: Kim Evers
Company: HydroGeoLogic
Address: 1155 Herndon Pkwy, Suite 900, Herndon, VA 20170
Phone: 703-478-5186
Fax: 703-471-4180
E-Mail: kevers@hgl.com

Bill To:
Contact: Kim Evers
Company:
Address: (same)
Phone:
Fax:
PO#: Quote:

Lab Lot # 9AUG412

Package Sealed	Samples Sealed
(Yes) No	Yes (No)
Received on Ice	**Samples Intact**
(Yes) No	(Yes) No

Temperature °C of Cooler: 3.0

Within Hold Time	Preserv. indicated
(Yes) No	(Yes) No NA
pH Check ok	**Res Cl_2 Check ok**
Yes No (NA)	Yes No (NA)

Sample Labels and COC Agree: (Yes) No COC not present

Sampler Name: Jennifer Wallace
Signature: J Wallace
Project Name: Quarterly July 2000 Groundwater Investigation
Project Number: AFC 001 33DCA
Project Location: NAS Fort Worth JRB
Lab PM: Eric Lang
Date Required: Hard Copy ___/___/___ Fax ___/___/___

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOCs (SW 8260B)	Total Metals + Hg (6010B/7471)	Additional Analyses / Remarks
Refrg #							5	8	
#/ Cont.							2	1	
Volume							40 ml	1L	
Preserv							1	3	
009		TB071300	7-13-00		W	G	2		Bundle in one VOA
010		TTMW-01TWG12		0845	W	G	3	1	
011		WHGLTA011WG12		1006	W	G	3		
012		SPOT35-5WG12		1129	W	G	3		
013		WITCTA004WG12		1345	W	G	3		
014		LF05-01WG12		1545	W	G	3		

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Hydrogeologic	7-13-00	1645	[signature]	STL	7-14-00	1145
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
Wi = Wipe
O = _____

Container Key
1 Plastic
2 VOA Vial
3 Sterile Plastic
4 Amber Glass
5 Widemouth Glass
6 Other _____

Preservative Key
1 HCl Cool to 4°
2 H2SO4 Cool to 4°
3 HNO3 Cool to 4°
4 NaOH, Cool to 4°
5 NaOH/Zn Acetate Cool to 4°
6 Cool to 4°
7 None

COMMENTS

Date Received: 7, 14, 00
Courier: Hand Delivered ☐
Bill of Lading: attached

STL Chicago Chain of Custody, CHI 22 04 2 11/A 5/6

AFCEE / CLI [illegible]

647 214

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Chicago Laboratory
2417 Bond Street
University Park, IL 60466
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Fax 708-534-5211

Report To:
Contact: Kim Evers
Company: HydroGeoLogic, Inc.
Address: 1155 Herndon Pkwy, Suite 900, Herndon, VA 20170
Phone: 703-478-5186
Fax: 703-471-4180
E-Mail: kevers@hgl.com

Bill To:
Contact: Kim Evers
Company:
Address: (Same)
Phone:
Fax:
PO#: Quote:

Shaded Areas For Internal Use Only 1 of 1

Lab Lot # 9A07G128

Package Sealed: (Yes) No	Samples Sealed: Yes (No)
Received on Ice: (Yes) No	Samples Intact: Yes (No)
Temperature °C of Cooler: 2.2	
Within Hold Time: (Yes) No	Preserv. indicated: (Yes) No NA
pH Check ok: Yes No (NA)	Res. Cl_2 Check ok: Yes No (NA)
Sample Labels and COC Agree: (Yes) No COC not present	

Sampler Name: Catherine Williams
Signature: Cathi Williams
Project Name: July 2000 Quarterly Groundwater Investigation
Project Number: AFC 001 33 DCA
Project Location: NAS Fort Worth JRB
Lab PM: Eric Lang
Date Required: Hard Copy ___/___/___ Fax ___/___/___

Refrg #	5
# Cont.	2
Volume	40ml
Preserv	1

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOCs SW 8260B	Additional Analyses / Remarks
001		TB071400	7-14-00	0715	W	G	2	Bubble in both trip blanks.
002		WHGLRW017WG12		1010	W	G	3	
003		AB071400		1035	W	G	3	
004		EB071400		1130	W	G	3	
005		Dup01 WG12		1200	W	G	3	

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
[illegible]	HydroGeoLogic	7/14/00	1500	[illegible]	STL	7-15-00	1300
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe
O = _____

Container Key
1 Plastic
2 VOA Vial
3 Sterile Plastic
4 Amber Glass
5 Widemouth Glass
6 Other _____

Preservative Key
1 HCl, Cool to 4°
2 H2SO4, Cool to 4°
3 HNO3, Cool to 4°
4 NaOH, Cool to 4°
5 NaOH/Zn Acetate, Cool to 4°
6 Cool to 4°
7 None

COMMENTS

Date Received: 7/15/00
Courier: attached Fx
Hand Delivered ☐
Bill of Lading

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Chicago Laboratory
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University Park, IL 60466
Phone 708-534-5200
Fax 708-534-5211

Shaded Areas For Internal Use ● 1 of 1

Report To:
Contact: Kim Evers
Company: HydroGeoLogic, Inc.
Address: 1155 Herndon Pkwy. Suite 900, Herndon, VA 20170
Phone: 703-478-5186
Fax: 703-471-4180
E Mail: kevers@hgl.com

●:
Contact: Kim Evers
Company:
Address: (Same)
Phone:
Fax:
PO#: Quote:

Lab Lot # 9AC7 9200

Package Sealed (Yes) No	Samples Sealed Yes (No)
Received on Ice (Yes) No	Samples Intact (Yes) No
Temperature °C of Cooler 2.4	
Within Hold Time (Yes) No	Preserv. indicated (Yes) No NA
pH Check ok Yes No (NA)	Res. Cl_2 Check ok Yes No (NA)
Sample Labels and COC Agree (Yes) No COC not present	

Sampler Name: Nicole Hade
Signature: Nicole Hade
Project Name: July 2000 Quarterly Groundwater Investigation
Project Number: AFC 001 33 DCA
Project Location: VAS Fort Worth JRB
Date Required Hard Copy: 8/17/00
Fax: / /
Lab PM: Eric Lang

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	VOCs SW8260B	Additional Analyses / Remarks
C01		TB072000	7.20.00	0730	W	G	2	
C02		EB072000		1130	W	G	3	
C03		HM-126WG12		1010	W	G	3	

Refrg #: 5
#/Cont: 2
Volume: 40 ml
Preserv: 1

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Allen Willis	HydroGeologic	7.20.00	1730	[illegible]	STL	7-21-00	1305

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe
O = _____

Container Key
1 Plastic
2 VOA Vial
3 Sterile Plastic
4 Amber Glass
5 Widemouth Glass
6 Other _____

Preservative Key
1 HCl Cool to 4°
2 H2SO4 Cool to 4°
3 HNO3 Cool to 4°
4 NaOH, Cool to 4°
5 NaOH/Zn Acetate Cool to 4°
6 Cool to 4°
7 None

COMMENTS

Date Received: 7/21/00
Courier: Fx
Hand Delivered ☐
Bill of Lading: attached

STL Chicago Chain of Custody CHI 22 09 2317A 5/98

3 of 3

647 215

TAB

APPENDIX B

APPENDIX B

JULY 2000 ANALYTICAL RESULTS

TABLE B.1

TCE PLUME MONITORING WELL LABORATORY RESULTS

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	GMI-22-06M N 7/11/00	GMI-22-07M N 7/11/00	HM-123 N 7/12/00	HM-126 N 7/20/00
Trace Elements (Metals) by ICP - SW6010						
Aluminum	µg/L	500	NA	NA	NA	NA
Arsenic	µg/L	50	NA	NA	NA	NA
Barium	µg/L	200	NA	NA	NA	NA
Beryllium	µg/L	3	NA	NA	NA	NA
Cadmium	µg/L	5	NA	NA	NA	NA
Calcium	µg/L	500	NA	NA	NA	NA
Cobalt	µg/L	10	NA	NA	NA	NA
Copper	µg/L	100	NA	NA	NA	NA
Iron	µg/L	70	NA	NA	NA	NA
Magneseum	µg/L	500	NA	NA	NA	NA
Manganese	µg/L	20	NA	NA	NA	NA
Moylbdenum	µg/L	10	NA	NA	NA	NA
Nickel	µg/L	20	NA	NA	NA	NA
Potassium	µg/L	5000	NA	NA	NA	NA
Silver	µg/L	5	NA	NA	NA	NA
Sodium	µg/L	1000	NA	NA	NA	NA
Vanadium	µg/L	10	NA	NA	NA	NA
Zinc	µg/L	100	NA	NA	NA	NA
Antimony (AA, Furnace Technique) - SW7041						
Antimony	µg/L	10	NA	NA	NA	NA
Chromium (AA, Furnace Technique) - SW7191						
Chromium (total)	µg/L	5	NA	NA	NA	NA
Lead (AA, Furnace Technique) -SW7421						
Lead	µg/L	2	NA	NA	NA	NA
Mercury in Liquid Waste - SW7470						
Mercury	µg/L	0 2	NA	NA	NA	NA
Selenium (AA, Furnace Technique) - SW7740						
Selenium	µg/L	5	NA	NA	NA	NA
Thallium - SW7841						
Thallium	µg/L	50	NA	NA	NA	NA

6 47 12 139

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	GMI-22-06M N 7/11/00	GMI-22-07M N 7/11/00	HM-123 N 7/12/00	HM-126 N 7/20/00
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 5 U
1,1,1-Trichloroethane	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
1,1,2,2-Tetrachloroethane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
1,1,2-Trichloroethane	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
1,1-Dichloroethane	µg/L	0 4	0 4 U	0 4 U	1	0 4
1,1-Dichloroethene	µg/L	0 5	0 5	0 5 U	3	1
1,1-Dichloropropene	µg/L	0 5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	µg/L	0 5	0 5 U	0 5 U	0.5 U	0 5 U
1,2,3-Trichloropropane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
1,2,4-Trichlorobenzene	µg/L	0 4	0 4 U	0 4 U	0 4 U	0 4 U
1,2,4-Trimethylbenzene	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
1,2-Dibromo-3-Chloropropane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0 5	0 5 U	0 5 U	0 5 U	0.5 U
1,2-Dichlorobenzene	µg/L	0.3	0 3 U	0.3 U	0 3 U	0 3 U
1,2-Dichloroethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 U
1,2-Dichloropropane	µg/L	0 4	0 4 U	0.4 U	0 4 U	0 4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0 5	0 5 U	0 5 R	0.5 U	0 5 U
1,3-Dichlorobenzene	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
1,3-Dichloropropane	µg/L	0 4	0 4 U	0.4 U	0 4 U	0.4 U
1,4-Dichlorobenzene	µg/L	0 3	0 3 U	0 3 U	0.3 U	0 3 U
1-Chlorohexane	µg/L	0.5	0 5 U	0.5 U	0 5 U	0 5 U
2,2-Dichloropropane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0.5 U
2-Chlorotoluene	µg/L	0 4	0.4 U	0 4 U	0 4 U	0.4 U
4-Chlorotoluene	µg/L	0.5	0 5 U	0.5 U	0 5 U	0 5 U
Benzene	µg/L	0 4	0 4 U	0.4 U	0.4 U	0 4 U
Bromobenzene	µg/L	0 3	0 3 U	0 3 U	0 3 U	0 3 U
Bromochloromethane	µg/L	0 4	0.4 U	0.4 U	0.4 U	0 4 U
Bromodichloromethane	µg/L	0 5	0 5 U	0 5 U	0 5 U	0.5 U
Bromoform	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
Bromomethane	µg/L	0 5	0 5 R	0.5 U	0.5 U	0 5 U

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	GMI-22-06M N 7/11/00	GMI-22-07M N 7/11/00	HM-123 N 7/12/00	HM-126 N 7/20/00
Carbon tetrachloride	µg/L	0.5	0 5 R	0.5 U	0.5 U	0 5 U
Chlorobenzene	µg/L	0.4	0 4 U	0.4 U	0.4 U	0.4 U
Chloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0 5 U
Chloroform	µg/L	0.3	0 6	0.3 U	0 7	0 6
Chloromethane	µg/L	0.5	0 5 U	0 5 U	0.5 U	0 5 U
cis-1,2-Dichloroethene	µg/L	0 5	91 *	0.5 U	550 *	70 *
cis-1,3-Dichloropropene	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
Dibromochloromethane	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
Dibromomethane	µg/L	0.5	0.5 U	0.5 U	0 5 U	0 5 U
Dichlorodifluoromethane	µg/L	0.5	0 5 R	0 5 U	0 5 U	0 5 U
Ethylbenzene	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
Hexachlorobutadiene	µg/L	0.5	0 5 U	0 5 R	0.5 U	0.5 U
Isopropylbenzene (cumene)	µg/L	0.5	0 5 U	0 5 U	0.5 U	0.5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
Methylene chloride	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 6 U
Naphthalene	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
n-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0 5 U
n-Propylbenzene	µg/L	0 4	0.4 U	0 4 U	0.4 U	0 4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
sec-Butylbenzene	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 5 U
Styrene	µg/L	0 4	0 4 U	0 4 U	0 4 U	0 4 U
tert-Butylbenzene	µg/L	0 5	0.5 U	0 5 U	0.5 U	0 5 U
Methyl tert-butyl ether	µg/L	0.5	0.5 U	0.5 U	0 5 U	0 5 U
Tetrachloroethene (PCE)	µg/L	0 5	1	0 5 U	0.7	1
Toluene	µg/L	0.5	0 5 U	0 5 U	0 5 U	0.5 U
trans-1,2-Dichloroethene	µg/L	0 5	6	0 5 U	14	3
trans-1,3-Dichloropropene	µg/L	0 5	0 5 U	0.5 U	0.5 U	0 5 U
Trichloroethene (TCE)	µg/L	0 5	540 *	0 5 U	3000 *	1500 *
Trichlorofluoromethane	µg/L	0 5	1 R	0.5 U	0.6	0 5 U
Vinyl acetate	µg/L	2	2 U	2 U	2 U	2 U
Vinyl chloride	µg/L	0 5	0 5 U	0 5 U	2	0 5 U

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	ITMW-01T N 7/13/00	LF03-3D N 7/12/00	LF05-01 N 7/13/00	LF05-5G N 7/11/00
Trace Elements (Metals) by ICP - SW6010						
Aluminum	µg/L	500	500 UJ	NA	NA	NA
Arsenic	µg/L	50	50 UJ	NA	NA	NA
Barium	µg/L	200	98.3 F	NA	NA	NA
Beryllium	µg/L	3	3 UJ	NA	NA	NA
Cadmium	µg/L	5	5 UJ	NA	NA	NA
Calcium	µg/L	500	172000	NA	NA	NA
Cobalt	µg/L	10	10 U	NA	NA	NA
Copper	µg/L	100	100 U	NA	NA	NA
Iron	µg/L	70	70 U	NA	NA	NA
Magneseum	µg/L	500	10900	NA	NA	NA
Manganese	µg/L	20	228	NA	NA	NA
Moylbdenum	µg/L	10	2.9 F	NA	NA	NA
Nickel	µg/L	20	20 UJ	NA	NA	NA
Potassium	µg/L	5000	1610 F	NA	NA	NA
Silver	µg/L	5	5 U	NA	NA	NA
Sodium	µg/L	1000	37500	NA	NA	NA
Vanadium	µg/L	10	10 U	NA	NA	NA
Zinc	µg/L	100	100 U	NA	NA	NA
Antimony (AA, Furnace Technique) - SW7041						
Antimony	µg/L	10	10 UJ	NA	NA	NA
Chromium (AA, Furnace Technique) - SW7191						
Chromium (total)	µg/L	5	5 U	NA	NA	NA
Lead (AA, Furnace Technique) -SW7421						
Lead	µg/L	2	2 U	NA	NA	NA
Mercury in Liquid Waste - SW7470						
Mercury	µg/L	0 2	0.2 U	NA	NA	NA
Selenium (AA, Furnace Technique) - SW7740						
Selenium	µg/L	5	5 UJ	NA	NA	NA
Thallium - SW7841						
Thallium	µg/L	50	50 UJ	NA	NA	NA

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	ITMW-01T N 7/13/00	LF03-3D N 7/12/00	LF05-01 N 7/13/00	LF05-5G N 7/11/00
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0.5 U
1,1,1-Trichloroethane	µg/L	0 5	0 5 U	0 5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5 U	0 5 U	0 5 U	0 5 U
1,1,2-Trichloroethane	µg/L	0 5	0 5 U	0 5 U	0 5 U	0.5 U
1,1-Dichloroethane	µg/L	0 4	0.4 U	0 4 U	0 5	0.4
1,1-Dichloroethene	µg/L	0.5	0 5 U	0 5 U	0 5 U	4 J
1,1-Dichloropropene	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 U
1,2,3-Trichlorobenzene	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
1,2,3-Trichloropropane	µg/L	0 5	0.5 U	0.5 U	0.5 U	0 5 U
1,2,4-Trichlorobenzene	µg/L	0 4	0.4 U	0.4 U	0 4 U	0 4 U
1,2,4-Trimethylbenzene	µg/L	0.5	0.5 U	0.5 U	0 5 U	0 5 U
1,2-Dibromo-3-Chloropropane	µg/L	0.5	0.5 U	0 5 U	0 5 U	0.5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0.5	0.5 U	0 5 U	0 5 U	0 5 U
1,2-Dichlorobenzene	µg/L	0 3	0.3 U	0 3 U	0 3 U	0 3 U
1,2-Dichloroethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 U
1,2-Dichloropropane	µg/L	0.4	0.4 U	0 4 U	0 4 U	0 4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 R
1,3-Dichlorobenzene	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 5 U
1,3-Dichloropropane	µg/L	0.4	0 4 U	0 4 U	0 4 U	0 4 U
1,4-Dichlorobenzene	µg/L	0.3	0 3 U	0 3 U	0 3 U	2
1-Chlorohexane	µg/L	0 5	0 5 U	0 5 U	0.5 U	0 5 U
2,2-Dichloropropane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 U
2-Chlorotoluene	µg/L	0 4	0 4 U	0 4 U	0 4 U	0 4 U
4-Chlorotoluene	µg/L	0 5	0 5 U	0 5 U	0 5 U	0.5 U
Benzene	µg/L	0 4	0 4 U	0 4 U	0 4 U	0 4 U
Bromobenzene	µg/L	0.3	0 3 U	0 3 U	0 3 U	0.3 U
Bromochloromethane	µg/L	0 4	0.4 U	0 4 U	0 4 U	0 4 U
Bromodichloromethane	µg/L	0 5	0.5 U	0.5 U	0 5 U	0 5 U
Bromoform	µg/L	0 5	0.5 U	0.5 U	0 5 U	0.5 U
Bromomethane	µg/L	0 5	0.5 U	0 5 U	0.5 U	0 5 U

647 V2 23

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	ITMW-01T N 7/13/00	LF03-3D N 7/12/00	LF05-01 N 7/13/00	LF05-5G N 7/11/00
Carbon tetrachloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	1
Chloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
Chloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	µg/L	0.5	5	0.5 U	60 *	260 *
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene (cumene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0.5	0.2 F	0.5 U	0.5 U	0.5 U
Methylene chloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
tert-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	µg/L	0.5	0.5 U	2	0.5 U	0.5 U
Tetrachloroethene (PCE)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	µg/L	0.5	0.5 U	0.5 U	4	26
trans-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene (TCE)	µg/L	0.5	13	0.5 U	6	760 *
Trichlorofluoromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl acetate	µg/L	2	2 U	2 U	2 U	2 U
Vinyl chloride	µg/L	0.5	0.5 U	0.5 U	79 *	18 J

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	LF05-5G FD 7/11/00	SPOT35-5 N 7/13/00	USGS071 N 7/12/00	W-153 N 7/12/00
Trace Elements (Metals) by ICP - SW6010						
Aluminum	µg/L	500	NA	NA	1440 J	NA
Arsenic	µg/L	50	NA	NA	50 UJ	NA
Barium	µg/L	200	NA	NA	88 F	NA
Beryllium	µg/L	3	NA	NA	3 UJ	NA
Cadmium	µg/L	5	NA	NA	5 UJ	NA
Calcium	µg/L	500	NA	NA	106000	NA
Cobalt	µg/L	10	NA	NA	10 U	NA
Copper	µg/L	100	NA	NA	100 U	NA
Iron	µg/L	70	NA	NA	976	NA
Magneseum	µg/L	500	NA	NA	4830	NA
Manganese	µg/L	20	NA	NA	35 3	NA
Moylbdenum	µg/L	10	NA	NA	10 U	NA
Nickel	µg/L	20	NA	NA	20 UJ	NA
Potassium	µg/L	5000	NA	NA	1000 F	NA
Silver	µg/L	5	NA	NA	5 U	NA
Sodium	µg/L	1000	NA	NA	29600	NA
Vanadium	µg/L	10	NA	NA	10 U	NA
Zinc	µg/L	100	NA	NA	100 U	NA
Antimony (AA, Furnace Technique) - SW7041						
Antimony	µg/L	10	NA	NA	10 UJ	NA
Chromium (AA, Furnace Technique) - SW7191						
Chromium (total)	µg/L	5	NA	NA	1 8 F	NA
Lead (AA, Furnace Technique) -SW7421						
Lead	µg/L	2	NA	NA	2 UJ	NA
Mercury in Liquid Waste - SW7470						
Mercury	µg/L	0.2	NA	NA	0 2 U	NA
Selenium (AA, Furnace Technique) - SW7740						
Selenium	µg/L	5	NA	NA	5 U	NA
Thallium - SW7841						
Thallium	µg/L	50	NA	NA	50 UJ	NA

647 3 2253

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	LF05-5G FD 7/11/00	SPOT35-5 N 7/13/00	USGS07/ N 7/12/00	W-153 N 7/12/00
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4	0.4 U	0.4 U	0.4
1,1-Dichloroethene	µg/L	0.5	5 J	0.5 R	0.5 U	2 J
1,1-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,2,4-Trimethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0.5	0.5 R	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	µg/L	0.3	2	0.3 U	0.3 U	0.3 U
1-Chlorohexane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 R
2-Chlorotoluene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
4-Chlorotoluene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
Bromochloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 R

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	LF05-5G FD 7/11/00	SPOT35-5 N 7/13/00	USGS07T N 7/12/00	W-153 N 7/12/00
Carbon tetrachloride	µg/L	0 5	0 5 U	0.5 U	0 5 U	0.5 U
Chlorobenzene	µg/L	0.4	1	0.4 U	0.4 U	0 4 U
Chloroethane	µg/L	0.5	0 5 U	0 5 U	0 5 U	0 5 U
Chloroform	µg/L	0.3	0 3 U	0 3 U	0 3 U	0.6
Chloromethane	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
cis-1,2-Dichloroethene	µg/L	0 5	280 *	0.5 U	0 5 U	110 *
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0 5 U	0 5 U	0 5 U
Dibromochloromethane	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
Dibromomethane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0.5 U
Dichlorodifluoromethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 R
Ethylbenzene	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
Hexachlorobutadiene	µg/L	0 5	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene (cumene)	µg/L	0 5	0.5 U	28	0 5 U	0 5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0 5	0 5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	µg/L	0 5	0 5 U	0 5 R	0 5 U	0.5 U
Naphthalene	µg/L	0 5	0.5 U	44 *	0.5 U	0.5 U
n-Butylbenzene	µg/L	0.5	0 5 U	0 5 U	0.5 U	0.5 U
n-Propylbenzene	µg/L	0 4	0.4 U	36	0.4 U	0 4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0 5	0.5 U	0 5 U	0 5 U	0 5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0 5	0 5 U	0 5 U	0 5 U	0 5 U
sec-Butylbenzene	µg/L	0.5	0 5 U	9	0 5 U	0.5 U
Styrene	µg/L	0 4	0 4 U	0.4 U	0.4 U	0 4 U
tert-Butylbenzene	µg/L	0.5	0.5 U	2	0.5 U	0 5 U
Methyl tert-butyl ether	µg/L	0.5	0.5 U	0 5 U	0 5 U	0 5 R
Tetrachloroethene (PCE)	µg/L	0 5	0 5 U	0 5 U	1	5
Toluene	µg/L	0 5	0 5 U	0.5 U	0.5 U	0 5 U
trans-1,2-Dichloroethene	µg/L	0 5	28	0.5 R	0.5 U	1
trans-1,3-Dichloropropene	µg/L	0.5	0 5 U	0.5 U	0 5 U	0 5 U
Trichloroethene (TCE)	µg/L	0 5	790 *	0 5 U	0 5 U	730 *
Trichlorofluoromethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	3
Vinyl acetate	µg/L	2	2 U	2 U	2 U	2 U
Vinyl chloride	µg/L	0.5	19 J	0 5 U	0 5 U	0 5 U

647 227

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLRW015 N 7/10/00	WHGLRW017 N 7/14/00	WHGLRW017 FD 7/14/00	WHGLTA011 N 7/13/00
Trace Elements (Metals) by ICP - SW6010						
Aluminum	µg/L	500	NA	NA	NA	NA
Arsenic	µg/L	50	NA	NA	NA	NA
Barium	µg/L	200	NA	NA	NA	NA
Beryllium	µg/L	3	NA	NA	NA	NA
Cadmium	µg/L	5	NA	NA	NA	NA
Calcium	µg/L	500	NA	NA	NA	NA
Cobalt	µg/L	10	NA	NA	NA	NA
Copper	µg/L	100	NA	NA	NA	NA
Iron	µg/L	70	NA	NA	NA	NA
Magneseum	µg/L	500	NA	NA	NA	NA
Manganese	µg/L	20	NA	NA	NA	NA
Moylbdenum	µg/L	10	NA	NA	NA	NA
Nickel	µg/L	20	NA	NA	NA	NA
Potassium	µg/L	5000	NA	NA	NA	NA
Silver	µg/L	5	NA	NA	NA	NA
Sodium	µg/L	1000	NA	NA	NA	NA
Vanadium	µg/L	10	NA	NA	NA	NA
Zinc	µg/L	100	NA	NA	NA	NA
Antimony (AA, Furnace Technique) - SW7041						
Antimony	µg/L	10	NA	NA	NA	NA
Chromium (AA, Furnace Technique) - SW7191						
Chromium (total)	µg/L	5	NA	NA	NA	NA
Lead (AA, Furnace Technique) -SW7421						
Lead	µg/L	2	NA	NA	NA	NA
Mercury in Liquid Waste - SW7470						
Mercury	µg/L	0 2	NA	NA	NA	NA
Selenium (AA, Furnace Technique) - SW7740						
Selenium	µg/L	5	NA	NA	NA	NA
Thallium - SW7841						
Thallium	µg/L	50	NA	NA	NA	NA

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLRW015 N 7/10/00	WHGLRW017 N 7/14/00	WHGLRW017 FD 7/14/00	WHGLTA011 N 7/13/00
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,1-Dichloroethene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,2,4-Trimethylbenzene	µg/L	0.5	0.5 U	0.5 R	0.5 R	0.5 U
1,2-Dibromo-3-Chloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0.5	0.5 R	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
1-Chlorohexane	µg/L	0.5	0.5 U	0.5 R	0.5 R	0.5 U
2,2-Dichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
4-Chlorotoluene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
Bromochloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U

164 7Y 229

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLRW015 N 7/10/00	WHGLRW017 N 7/14/00	WHGLRW017 FD 7/14/00	WHGLTA011 N 7/13/00
Carbon tetrachloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Chloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
Chloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	µg/L	0.5	10	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	µg/L	0.5	0.5 U	0.5 R	0.5 R	0.5 U
Ethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	µg/L	0.5	0.5 R	0.5 U	0.5 U	0.5 U
Isopropylbenzene (cumene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
tert-Butylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene (PCE)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene (TCE)	µg/L	0.5	26	0.5 U	0.5 U	8
Trichlorofluoromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl acetate	µg/L	2	2 U	2 U	2 U	2 U
Vinyl chloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLTA025 N 7/10/00	WITCTA004 N 7/13/00	WITCTA010 N 7/11/00	WITCTA017 N 7/12/00
Trace Elements (Metals) by ICP - SW6010						
Aluminum	µg/L	500	NA	NA	NA	500 UJ
Arsenic	µg/L	50	NA	NA	NA	50 UJ
Barium	µg/L	200	NA	NA	NA	74 7 F
Beryllium	µg/L	3	NA	NA	NA	3 UJ
Cadmium	µg/L	5	NA	NA	NA	5 UJ
Calcium	µg/L	500	NA	NA	NA	122000
Cobalt	µg/L	10	NA	NA	NA	10 U
Copper	µg/L	100	NA	NA	NA	100 U
Iron	µg/L	70	NA	NA	NA	39 F
Magneseum	µg/L	500	NA	NA	NA	14600
Manganese	µg/L	20	NA	NA	NA	20 U
Moylbdenum	µg/L	10	NA	NA	NA	2 3 F
Nickel	µg/L	20	NA	NA	NA	20 UJ
Potassium	µg/L	5000	NA	NA	NA	5060
Silver	µg/L	5	NA	NA	NA	5 U
Sodium	µg/L	1000	NA	NA	NA	35200
Vanadium	µg/L	10	NA	NA	NA	10 U
Zinc	µg/L	100	NA	NA	NA	100 U
Antimony (AA, Furnace Technique) - SW7041						
Antimony	µg/L	10	NA	NA	NA	10 U
Chromium (AA, Furnace Technique) - SW7191						
Chromium (total)	µg/L	5	NA	NA	NA	5 U
Lead (AA, Furnace Technique) -SW7421						
Lead	µg/L	2	NA	NA	NA	2 U
Mercury in Liquid Waste - SW7470						
Mercury	µg/L	0.2	NA	NA	NA	0 2 U
Selenium (AA, Furnace Technique) - SW7740						
Selenium	µg/L	5	NA	NA	NA	5 UJ
Thallium - SW7841						
Thallium	µg/L	50	NA	NA	NA	50 UJ

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLTA025 N 7/10/00	WITCTA004 N 7/13/00	WITCTA010 N 7/11/00	WITCTA017 N 7/12/00
Volatile Organic Compounds - SW8260B						
1,1,1,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,1-Dichloroethene	µg/L	0.5	0.5 U	1 J	0.5 R	0.5 U
1,1-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 R	0.5 U
1,2,3-Trichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 R	0.4 U
1,2,4-Trimethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0.5	0.5 R	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
1,4-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
1-Chlorohexane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
4-Chlorotoluene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromobenzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U
Bromochloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WHGLTA025 N 7/10/00	WITCTA004 N 7/13/00	WITCTA010 N 7/11/00	WITCTA017 N 7/12/00
Carbon tetrachloride	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	µg/L	0 4	0 4 U	0.4 U	0.4 U	0 4 U
Chloroethane	µg/L	0 5	0 5 U	0.5 U	0.5 U	0 5 U
Chloroform	µg/L	0.3	0 3 U	0 3 U	0 3 U	0 3 U
Chloromethane	µg/L	0.5	0.5 U	0 5 U	0 5 U	0.5 U
cis-1,2-Dichloroethene	µg/L	0.5	2	19	1	0 5 U
cis-1,3-Dichloropropene	µg/L	0.5	0 5 U	0 5 U	0.5 U	0.5 U
Dibromochloromethane	µg/L	0 5	0 5 U	0.5 U	0 5 U	0.5 U
Dibromomethane	µg/L	0 5	0.5 U	0 5 U	0 5 U	0.5 U
Dichlorodifluoromethane	µg/L	0.5	0 5 U	0 5 U	0 5 U	0.5 U
Ethylbenzene	µg/L	0 5	0 5 U	0.5 U	0 5 U	0.5 U
Hexachlorobutadiene	µg/L	0 5	0.5 R	0 5 U	0.5 R	0.5 U
Isopropylbenzene (cumene)	µg/L	0 5	0 5 U	0.5 U	0 6	0.5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0.5	0 5 U	0 5 U	0 5 U	0.5 U
Methylene chloride	µg/L	0 5	0.5 U	0.5 R	0.5 U	0 5 U
Naphthalene	µg/L	0.5	0.5 U	0.5 U	0.5 R	0 5 U
n-Butylbenzene	µg/L	0.5	0 5 U	0.5 U	0.5 U	0 5 U
n-Propylbenzene	µg/L	0 4	0.4 U	0 4 U	0.4 U	0 4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0 5	0 5 U	0.5 U	0 5 U	0 5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0.5	0 5 U	0 5 U	0 5 U	0.5 U
sec-Butylbenzene	µg/L	0 5	0 5 U	0 5 U	0.5 U	0 5 U
Styrene	µg/L	0 4	0 4 U	0.4 U	0 4 U	0 4 U
tert-Butylbenzene	µg/L	0.5	0.5 U	0 5 U	0.5 U	0.5 U
Methyl tert-butyl ether	µg/L	0.5	0 5 U	0 5 U	0.5 U	0 5 U
Tetrachloroethene (PCE)	µg/L	0 5	0 5 U	0.6	0 5 U	0.5 U
Toluene	µg/L	0 5	0.5 U	0.5 U	0 5 U	0.5 U
trans-1,2-Dichloroethene	µg/L	0 5	0 5 U	0 8 J	0.6	0.5 U
trans-1,3-Dichloropropene	µg/L	0 5	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene (TCE)	µg/L	0 5	7	180 *	0 5 U	0.5 U
Trichlorofluoromethane	µg/L	0 5	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl acetate	µg/L	2	2 U	2 U	2 U	2 U
Vinyl chloride	µg/L	0.5	0 5 U	0.5 U	2	0 5 U

1647 12313

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WITCTA024 N 7/12/00	WJETA535 N 7/11/00
Trace Elements (Metals) by ICP - SW6010				
Aluminum	µg/L	500	NA	500 UJ
Arsenic	µg/L	50	NA	50 UJ
Barium	µg/L	200	NA	129 F
Beryllium	µg/L	3	NA	3 UJ
Cadmium	µg/L	5	NA	5 UJ
Calcium	µg/L	500	NA	155000
Cobalt	µg/L	10	NA	10 U
Copper	µg/L	100	NA	100 U
Iron	µg/L	70	NA	70 U
Magneseum	µg/L	500	NA	6930
Manganese	µg/L	20	NA	20 U
Moylbdenum	µg/L	10	NA	10 U
Nickel	µg/L	20	NA	20 UJ
Potassium	µg/L	5000	NA	593 F
Silver	µg/L	5	NA	5 U
Sodium	µg/L	1000	NA	23300
Vanadium	µg/L	10	NA	10 U
Zinc	µg/L	100	NA	100 U
Antimony (AA, Furnace Technique) - SW7041				
Antimony	µg/L	10	NA	10 UJ
Chromium (AA, Furnace Technique) - SW7191				
Chromium (total)	µg/L	5	NA	5 UJ
Lead (AA, Furnace Technique) -SW7421				
Lead	µg/L	2	NA	2 UJ
Mercury in Liquid Waste - SW7470				
Mercury	µg/L	0 2	NA	0 51
Selenium (AA, Furnace Technique) - SW7740				
Selenium	µg/L	5	NA	5 U
Thallium - SW7841				
Thallium	µg/L	50	NA	50 UJ

Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WITCTA024 N 7/12/00	WJETA535 N 7/11/00
Volatile Organic Compounds - SW8260B				
1,1,1,2-Tetrachloroethane	µg/L	0 5	0 5 U	0.5 U
1,1,1-Trichloroethane	µg/L	0.5	0 5 U	0.5 U
1,1,2,2-Tetrachloroethane	µg/L	0.5	0 5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.5	0 5 U	0.5 U
1,1-Dichloroethane	µg/L	0 4	0 4 U	0.4 U
1,1-Dichloroethene	µg/L	0.5	0.5 U	0 5 U
1,1-Dichloropropene	µg/L	0.5	0 5 U	0.5 U
1,2,3-Trichlorobenzene	µg/L	0 5	0 5 U	0.5 U
1,2,3-Trichloropropane	µg/L	0.5	0.5 U	0.5 U
1,2,4-Trichlorobenzene	µg/L	0.4	0.4 U	0 4 U
1,2,4-Trimethylbenzene	µg/L	0.5	0.5 U	0 5 U
1,2-Dibromo-3-Chloropropane	µg/L	0.5	0 5 U	0.5 U
1,2-Dibromoethane (ethylene dibromide)	µg/L	0 5	0.5 U	0.5 U
1,2-Dichlorobenzene	µg/L	0.3	0.3 U	0 3 U
1,2-Dichloroethane	µg/L	0.5	0.5 U	0.5 U
1,2-Dichloropropane	µg/L	0.4	0.4 U	0.4 U
1,3,5-Trimethylbenzene (mesitylene)	µg/L	0.5	0 5 U	0.5 R
1,3-Dichlorobenzene	µg/L	0 5	0.5 U	0.5 U
1,3-Dichloropropane	µg/L	0.4	0 4 U	0.4 U
1,4-Dichlorobenzene	µg/L	0.3	0.3 U	0.3 U
1-Chlorohexane	µg/L	0 5	0.5 U	0.5 U
2,2-Dichloropropane	µg/L	0 5	0 5 U	0 5 U
2-Chlorotoluene	µg/L	0 4	0.4 U	0.4 U
4-Chlorotoluene	µg/L	0.5	0.5 U	0.5 U
Benzene	µg/L	0.4	0 4 U	0.4 U
Bromobenzene	µg/L	0 3	0.3 U	0.3 U
Bromochloromethane	µg/L	0.4	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.5	0.5 U	0 5 U
Bromoform	µg/L	0.5	0.5 U	0.5 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U

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Table B.1
TCE Plume Monitoring Well Laboratory Results
July 2000
NAS Fort Worth JRB

Analyte	UNITS	Reporting Limit	WITCTA024 N 7/12/00	WJETA535 N 7/11/00
Carbon tetrachloride	µg/L	0.5	0.5 U	0.5 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U
Chloroethane	µg/L	0.5	0.5 U	0.5 U
Chloroform	µg/L	0.3	0.3 U	0.3 U
Chloromethane	µg/L	0.5	0.5 U	0.5 U
cis-1,2-Dichloroethene	µg/L	0.5	0.5 U	0.5 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U
Dibromochloromethane	µg/L	0.5	0.5 U	0.5 U
Dibromomethane	µg/L	0.5	0.5 U	0.5 U
Dichlorodifluoromethane	µg/L	0.5	0.5 U	0.5 U
Ethylbenzene	µg/L	0.5	0.5 U	0.5 U
Hexachlorobutadiene	µg/L	0.5	0.5 U	0.5 U
Isopropylbenzene (cumene)	µg/L	0.5	0.5 U	0.5 U
m- & *p*-Xylene (sum of isomers)	µg/L	0.5	0.5 U	0.5 U
Methylene chloride	µg/L	0.5	0.5 U	0.5 U
Naphthalene	µg/L	0.5	0.5 U	0.5 U
n-Butylbenzene	µg/L	0.5	0.5 U	0.5 U
n-Propylbenzene	µg/L	0.4	0.4 U	0.4 U
o-Xylene (1,2-dimethylbenzene)	µg/L	0.5	0.5 U	0.5 U
p-Cymene (*p*-isopropyltoluene)	µg/L	0.5	0.5 U	0.5 U
sec-Butylbenzene	µg/L	0.5	0.5 U	0.5 U
Styrene	µg/L	0.4	0.4 U	0.4 U
tert-Butylbenzene	µg/L	0.5	2	0.5 U
Methyl tert-butyl ether	µg/L	0.5	0.5 U	0.5 U
Tetrachloroethene (PCE)	µg/L	0.5	0.5 U	0.5 U
Toluene	µg/L	0.5	0.5 U	0.5 U
trans-1,2-Dichloroethene	µg/L	0.5	0.5 U	0.5 U
trans-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U
Trichloroethene (TCE)	µg/L	0.5	0.5 U	0.5 U
Trichlorofluoromethane	µg/L	0.5	0.5 U	0.5 U
Vinyl acetate	µg/L	2	2 U	2 U
Vinyl chloride	µg/L	0.5	3	0.5 U

Notes
*Analytical results were taken from the reanalysis of this sample
FD - Field duplicate
N - Original sample
NA - Not analyzed
R - The datum is unusable due to serious deficiencies in the ability to meet QC criteria
U - The analyte was analyzed for, but not detected. The associated numerical value is at the PQL. (Use datum without qualification.)
UJ - The analyte was detected; the associated numerical value is a PQL or MQL, which is estimated due to deficiencies in the QC data
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.

TABLE B.2

DETECTED VOLATILE ORGANIC COMPOUND RESULTS FROM LANDFILL 7 GROUNDWATER INVESTIGATION

Table B.2
Detected Volatile Organic Compound Results From Landfill 7 Groundwater Investigation
July 2000

Well	Analyte	Result (mg/L)
WHGLTA704	Benzene	0.025
	cis-1,2-Dichloroethene	0.0007
	Vinyl Chloride	0.0009
WHGLTA705	*cis*-1,2-Dichloroethene	0.012
	trans-1,2-Dichloroethene	0.003
	Vinyl Chloride	0 002
WHGLTA706	*cis*-1,2-Dichloroethene	0.02
	trans-1,2-Dichloroethene	0 001
	Trichloroethene (TCE)	0.005
	Vinyl Chloride	0.002

Notes:
Underlined results represent values that are greater than or equal to RRS 2 levels.

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE