DRAFT REMEDIAL INVESTIGATION REPORT
WESTERN AVENUE PLUME WQARF SITE
AVONDALE AND GOODYEAR, ARIZONA

Prepared for:

Arizona Department of Environmental Quality
1110 West Washington St.
Phoenix, AZ 85007

Prepared by:

GEOTRANS, INC.
4801 East Washington Street
Suite 260
Phoenix, Arizona 85034
(602) 682-3320

June 13, 2006

REGISTERED GEOLOGIST
CERTIFICATE NO
29376
PAUL R
PLATO
Date Signed 6/13/06
ARIZONA U.S.A.

Christopher Gutmann
Senior Project Hydrologist

Paul R. Plato, R.G.
Senior Hydrogeologist

1303.021.03
P:\WPFILES\AA Projects\1303.021 Western Ave\Revised Final Draft RI 2006.wpd

TABLE OF CONTENTS

ACRONYMS v

EXECUTIVE SUMMARY vii

1.0 INTRODUCTION 1
- 1.1 SITE BACKGROUND 1
- 1.2 OPERATIONAL HISTORY 2

2.0 FIELD INVESTIGATIONS 3
- 2.1 1994 SITE INVESTIGATION 3
- 2.2 1995 EPA/ADEQ PA/SI INVESTIGATION 3
- 2.3 1995 INSTALLATION OF MW-1 AND MW-2 3
- 2.4 1996 - 1999 GROUNDWATER SAMPLING 4
- 2.5 2000 INSTALLATION AND SAMPLING OF MONITORING WELLS 4
  - 2.5.1 Hydropunch Investigation 5
- 2.6 2001 SITE INDUSTRIAL SURVEY AND EPA PA/SI INVESTIGATIONS 6
  - 2.6.1 Former Western Avenue Dry Cleaning 6
  - 2.6.2 Former Aladdin Dry Cleaners 7

3.0 SITE CHARACTERISTICS 9
- 3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY 9
- 3.2 SITE GEOLOGY AND HYDROGEOLOGY 10
- 3.3 HISTORICAL WATER LEVEL DATA 11
  - 3.3.1 Site-Related Water Level Monitoring 11

4.0 RESULTS OF DATA QUALITY ASSESSMENT 13
- 4.1 INTRODUCTION 13
  - 4.1.2 Previously Evaluated Data 13
- 4.2 JANUARY 2004 GROUNDWATER SAMPLING 13
  - 4.2.1 Analytical Results of Duplicate Samples 14
  - 4.2.2 Analytical Results of QA/QC Samples 14
  - 4.2.3 Data Usability 15
- 4.3 JANUARY 2005 GROUNDWATER SAMPLING 15
  - 4.3.1 Analytical Data Evaluation 16
  - 4.3.2 Analytical Results of Duplicate Samples 16
  - 4.3.3 Analytical Results of Quality Assurance/Quality Control Samples 16
  - 4.3.4 Data Usability 17

5.0 NATURE AND EXTENT OF CONTAMINATION 18
- 5.1 CONTAMINANTS OF CONCERN 18
- 5.2 OTHER DETECTED CONTAMINANTS 18
- 5.3 PHYSICAL AND CHEMICAL PROPERTIES OF THE CONTAMINANTS OF CONCERN 18
- 5.4 CONTAMINANT SOURCES 18
- 5.5 SOURCE AREA(S) 19

5.6 DISTRIBUTION AND TRENDS OF SOIL CONTAMINATION 19
5.7 DISTRIBUTION AND TRENDS OF GROUNDWATER CONTAMINATION 19

6.0 FATE AND TRANSPORT 21
6.1 FATE AND TRANSPORT OF PCE IN SOILS 21
6.2 FATE AND TRANSPORT OF PCE IN GROUNDWATER 22
6.2.1 Groundwater Movement 22
6.2.2 Extent of Groundwater Contamination 22
6.2.3 Flow and Transport of Contaminants 22
6.3 NATURAL ATTENUATION EVALUATION 23
6.4 AREAS OF UNCERTAINTY 24

7.0 LAND AND WATER USE 25
7.1 LAND USE 25
7.2 GROUNDWATER USES 25
7.3 SURFACE WATER USES 25

8.0 SUMMARY AND CONCLUSIONS 26

9.0 REFERENCES 27

REGISTERED GEOLOGIST
CERTIFICATE NO
29376
PAUL R
PLATO
Date Signed 6/13/06
ARIZONA U.S.A.

LIST OF TABLES

Table 2-1 Summary of Groundwater Sampling
Table 2-2 Well Location and Construction Information
Table 2-3 Water Level Data
Table 2-4 Original and Duplicate Groundwater Samples, Volatile Organic Compounds
Table 2-5 Original and Duplicate Groundwater Samples, Inorganic Sample Results
Table 2-6 Original and Duplicate Groundwater Samples, Pesticide, SVOC and PCB Sample Results
Table 2-7 Summary of Soil vapor Analytical Results, Western Avenue Dry Cleaners
Table 2-8 Summary of Soil Sample Analytical Results, Western Avenue Dry Cleaners
Table 5-1 Summary of PCE Concentrations
Table 5-2 Potential Users of PCE
Table 5-3 Potential Source Areas

LIST OF FIGURES

Figure 1-1 Western Avenue Plume WQARF Site Area
Figure 1-2 Initial Groundwater Investigation
Figure 2-1 March 1995 PCE Soil Vapor Samples, City of Goodyear Public Works Site
Figure 2-2 Locations of Monitor Wells - Western Avenue Plume WQARF Site
Figure 2-3 Location of PASI Investigations and Historical Dry Cleaner Locations
Figure 2-4 March 1995 PCE Soil Vapor Samples, Western Dry Cleaners

Figure 2-5 August 2001 PCE Soil Vapor Samples, Aladdin Dry Cleaners
Figure 3-1 MW-1 Water Level Elevations and PCE Concentrations
Figure 3-2 MW-2 Water Level Elevations and PCE Concentrations
Figure 3-3 GMW-4 Water Level Elevations and PCE Concentrations
Figure 3-4 GMW-5 Water Level Elevations and PCE Concentrations
Figure 3-5 COG-MW3 Water Level Elevations and PCE Concentrations
Figure 3-6 MW-3 Water Level Elevations and PCE Concentrations
Figure 3-7 MW-4 Water Level Elevations and PCE Concentrations
Figure 3-8 MW-5 Water Level Elevations and PCE Concentrations
Figure 3-9 MW-6 Water Level Elevations and PCE Concentrations
Figure 3-10 MW-7 Water Level Elevations and PCE Concentrations
Figure 3-11 Groundwater Elevations - November 2000
Figure 3-12 Groundwater Elevations -January 2001
Figure 3-13 Groundwater Elevations -April 2001
Figure 3-14 Groundwater Elevations - July 2001
Figure 3-15 Groundwater Elevations - May 2002
Figure 3-16 Groundwater Elevations - July 2002
Figure 3-17 Groundwater Elevations - October 2002
Figure 3-18 Groundwater Elevations - March 2003
Figure 3-19 Groundwater Elevations - January 2004
Figure 3-20 Ground Water Elevations - January 2005
Figure 5-1 November 2004 PGA Water Levels - Potentiometric Surface - Subunit A
Figure 5-2 November 2004 PGA Water Levels - Potentiometric Surface - Subunit C
Figure 5-3 PCE Concentrations - November 2000
Figure 5-4 PCE Concentrations - January 2001
Figure 5-5 PCE Concentrations - April 2001
Figure 5-6 PCE Concentrations - July 2001
Figure 5-7 PCE Concentrations - May 2002
Figure 5-8 PCE Concentrations - August 2002
Figure 5-9 PCE Concentrations - October 2002
Figure 5-10 PCE Concentrations - March 2003
Figure 5-11 PCE Concentrations - January 2004
Figure 5-12 PCE Concentrations - January 2005

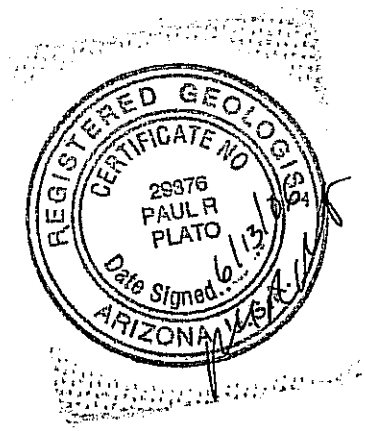
REGISTERED GEOLOGIST
CERTIFICATE NO
29376
PAUL R
PLATO
Date Signed 6/13/06
ARIZONA

LIST OF APPENDICES

Appendix A Soil Boring Logs
Appendix B Geologic Cross Sections
Appendix C Western Avenue Dry Cleaning Soil Vapor Sampling Analytical Results
Appendix D Western Avenue Dry Cleaning Soil Sample Analytical Results
Appendix E Aladdin Dry Cleaning Soil Vapor Sample Analytical Results
Appendix F Groundwater Sample Results for January 2004
Appendix G Arizona Data Qualifiers
Appendix H Groundwater Sample Results for January/February 2005
Appendix I Current and Future Beneficial Land and Water Use

LIST OF ATTACHMENTS

CD containing Analytical Laboratory Reports 2000-2005



ACRONYMS

A.A.C.	Arizona Administrative Code
ACC	Avondale City Cleaners
ADC	Aladdin Dry Cleaning
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
A.R.S.	Arizona Revised Statute
AWQS	Aquifer Water Quality Standards
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAS	Columbia Analytical Services, Inc.
COA	City of Avondale
COC	Contaminant of Concern
COG	City of Goodyear
COGPW	City of Goodyear Public Works
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DNAPL	Dense Non-Aqueous Phase Liquid
EB	Equipment Blank
ft/ft	Feet per Foot
GeoTrans	GeoTrans, Inc.
gpd	Gallons per Day
gpm	Gallons per Minute
LAU	Lower Alluvial Unit
LCS	Laboratory Control Sample
MAU	Middle Alluvial Unit
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
PA Report	Preliminary Assessment Report
PCE	Tetrachloroethene
PA/SI	Preliminary Assessment / Site Inspections
PCB	Polychlorinated Biphenyls
PGA-S	Phoenix Goodyear Airport - South
QA/QC	Quality Assurance / Quality Control
QCMS	Quality Control Matrix Spike
QCDMS	Quality Control Duplicate Matrix Spike
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SVOCs	Semi-Volatile Organic Compound
TASOW	Task Assignment Scope of Work
TB	Trip Blank

ACRONYMS - CONTINUED

TCE	Trichloroethene
THF	THF Drilling, Inc.
UAU	Upper Alluvial Unit
US EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USTs	Underground Storage Tanks
VOCs	Volatile Organic Compounds
WDC	Western Avenue Dry Cleaning
WQARF	Water Quality Assurance Revolving Fund
WSRV	Western Salt River Valley

This report summarizes the findings of the remedial investigation (RI) activities that have been conducted by the Arizona Department of Environmental Quality (ADEQ) from 1993 through the present at the Western Avenue Plume Water Quality Assurance Revolving Fund (WQARF) Site (the Site) located in Avondale and Goodyear, Arizona. GeoTrans, Inc. (GeoTrans) has prepared this Draft RI Report for the Western Avenue WQARF Site to meet the requirements established under Arizona Revised Statues (A.R.S.) to determine appropriate cleanup actions at the Site.

The Site occupies approximately 200 acres along Western Avenue, and is located within the boundaries of the cities of Avondale and Goodyear, Arizona. The Site boundaries are defined by the extent of the groundwater contaminant plume, which generally extends to Hill Drive to the north; 3rd Street to the east; approximately 1000 feet north of State Route 85 to the south; and Litchfield Road to the west. Dissolved tetrachloroethene (PCE) is the contaminant of concern (COC) in the groundwater at the Site.

The alluvial sediments are subdivided into three hydrologic units: the Upper, Middle, and Lower Alluvial units (UAU, MAU and LAU, respectively). The total thickness of alluvial sediments is estimated to exceed 1,200 feet in the vicinity of the Site. The UAU can be subdivided into: Subunit A, Subunit B, and Subunit C. Contamination at the Site is confined to Subunit A, which is the uppermost subunit of the UAU, extending to a depth of approximately 130 feet below ground surface (bgs). It consists of interbedded deposits of alluvial sediments ranging from silt and clay to varying amounts of sand and gravel. Subunit B consists primarily of a thick clay layer, and Subunit C is the lowermost subunit of the UAU, extending to the top of the MAU.

Due to increasing concentrations of PCE in groundwater at the Phoenix Goodyear Airport-South (PGA-S) Superfund Site, the ADEQ collected groundwater samples in June 1994 from three monitoring wells to be analyzed for PCE. Concentrations of PCE reported in all three monitoring wells exceeded the ADEQ Aquifer Water Quality Standard (AWQS) of 5 micrograms per liter (µg/L).

ADEQ has conducted Preliminary Assessment/Site Inspections (PA/SI) investigations at three facilities near the Site, which included soil and soil vapor sampling. Based on analytical data collected during these investigations, the potential source of PCE in soils could not be conclusively identified.

Between April 1996 and April 1999, a total of 11 rounds of groundwater samples were collected by the ADEQ from monitoring wells at the Site. Nine additional rounds of groundwater samples have been collected through January 2004. Analytical data indicates that PCE concentrations have steadily declined since 1995.

In October 2000, GeoTrans installed five additional monitoring wells (designated as MW-3 through MW-7) at the Site on behalf of the ADEQ. These wells were added to the existing monitoring well network, and have been included in the groundwater sampling program since their installation.

In 2001, the ADEQ contracted GeoTrans to conduct a site industrial survey in the vicinity of the

Western Avenue Plume WQARF Site to identify potential sources of PCE. Based on data collected by GeoTrans, six former dry cleaning facilities were identified in the area: the Western Dry Cleaner, Aladdin Cleaners, Avondale City Cleaners, Quinn Cleaners, Goodyear Dry Cleaners, and a dry cleaning facility of unknown name that historically operated at 1072 South Litchfield Road.

PCE concentrations in groundwater samples collected in January 2004 were reported below the AWQS of 5 μg/L. However, the PCE concentration at monitoring well MW-1 was 5.1 in January 2005.

Based on the fact that the PCE plume is defined and stable, in addition to aquifer hydraulics determining the advective movement of the plume, sufficient information is available to proceed with the feasibility study.

1.0 INTRODUCTION

This report summarizes the findings of remedial investigation (RI) activities that have been conducted by the Arizona Department of Environmental Quality (ADEQ) from 1993 through the present at the Western Avenue Plume Water Quality Assurance Revolving Fund (WQARF) Site (the Site) located in Avondale and Goodyear, Arizona (Figure 1-1). GeoTrans, Inc. (GeoTrans), under contract with the ADEQ, has prepared this Draft RI Report for the Western Avenue WQARF Site to meet the requirements established under Arizona Revised Statues (A.R.S.) §49-287.03 and Arizona Administrative Code (A.A.C.) R18-16-406. The purpose of the RI is to collect sufficient information to determine appropriate cleanup actions at the Site. Information collected during the RI includes: the nature, extent and sources of contamination; and the impact of contaminants present on the Site to public health, welfare and the environment. The RI also identifies present and reasonably foreseeable uses of land and water of the State that have been, or are threatened to be, impacted by identified contaminants.

GeoTrans has prepared this report for the ADEQ in accordance with Task Assignment Scope of Work (TASOW) No. 04-0045, including subsequent amendments and agreements.

1.1 SITE BACKGROUND

The Site occupies approximately 200 acres, and is located along Western Avenue, within the boundaries of the cities of Avondale and Goodyear, Arizona (Figure 1-1). The Site boundaries are defined by the extent of the groundwater contaminant plume, which generally extends to Hill Drive to the north, 3rd Street to the east, approximately 1000 feet north of State Route 85 to the south, and Litchfield Road to the west. Dissolved tetrachloroethene (PCE) is the contaminant of concern (COC) in the groundwater at the Site.

In November 1991, the ADEQ conducted a Preliminary Assessment/Site Inspection (PA/SI) at the City of Goodyear Public Works (COGPW). Two monitoring wells, designated as COG-MW1 and COG-MW2, were installed at the COGPW site to investigate a potential release from a 500-gallon and a 1000-gallon capacity underground storage tanks. A third monitoring well (designated as COG-MW3) was installed in February 1993 (Figure 1-2).

In 1994, PCE was detected at concentrations which exceeded the AWQS of 5 μg/L in monitoring wells GMW-3 (7.1 μg/L), GMW-4 (29 μg/L), and GMW-7 (27 μg/L), which are located at the Phoenix Goodyear Airport-South (PGA-S) Superfund Site. GMW-3 is located in the Lockheed facility, just west of Litchfield Road and south of Yuma Road; GMW-4 is located in the Lockheed parking area, south of Calle de Oro; GMW-5 is located east of Litchfield Road, approximately at the center of the Lockheed parking area. In addition, PCE was detected in five groundwater extraction wells, which are operated as part of the PGA-S Superfund Site groundwater pump-and-treat system. COCs identified at the PGA-S Superfund Site include trichloroethene (TCE) and chromium. In response to detections of PCE at and upgradient, of the PGA-S Superfund Site, the ADEQ placed the Western Avenue Site on the WQARF Site Registry in December 1998.

1.2 OPERATIONAL HISTORY

Former and existing dry cleaning facilities located within the area of the Site have been identified as potential sources of PCE contamination in groundwater. Because no specific source area has been identified to date, this section does not present a discussion on the operational history of the contaminant source. Section 2.6 provides a detailed discussion on the most likely areas where PCE contamination could have originated.

Information related to the source of groundwater samples collected, organization conducting the field investigation, analytical methods, and analytical laboratory performing the analysis is presented in Table 2-1. Table 2-2 presents well construction information for wells sampled during the RI, from 1995 through January/February 2005. Table 2-3 presents water level data collected during the RI. Tables 2-4, 2-5 and 2-6 present groundwater quality data collected during this investigation, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, poly-chlorinated biphenyls (PCBs) and inorganic sample results.

2.1 1994 SITE INVESTIGATION

Due to a trend of increasing PCE concentrations in groundwater at the PGA-S Superfund Site, the ADEQ sampled three monitoring wells in June 1994. Concentrations of PCE were reported at 43 micrograms per liter (µg/L) in COG-MW1, 38 µg/L in COG-MW2, and 54 µg/L in COG-MW3 (Figure 1-2). PCE concentrations reported in all three monitoring wells exceeded the 5 µg/L AWQS. The COCs identified at the PGA-S Superfund Site include PCE and chromium.

2.2 1995 EPA/ADEQ PA/SI INVESTIGATION

During a follow-up investigation conducted by the ADEQ at the COGPW site in June 1995, soil samples were collected at seven locations at a depth of 8.5 feet below ground surface (bgs) and 17 feet bgs. Samples were analyzed for VOCs following US EPA Method 8010A/8020A. Analytical data indicated that PCE and/or other target compounds were not present in soil above the method detection limit (MDL) of 4 micrograms per kilogram (µg/Kg).

Eleven soil vapor samples were collected at the COGPW site, and PCE was not detected in samples collected[1]. Concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected. Figure 2-1 presents the PCE concentrations in soil vapor samples collected. Based on data obtained from the investigation, the ADEQ concluded that no release of PCE had occurred in the vadose zone. Detailed information regarding the ADEQ investigation at the COGPW site can be found in the report titled *Preliminary Assessment/Site Inspection Report, City of Goodyear Public Works,* dated June 30, 1995.

2.3 1995 INSTALLATION OF MW-1 AND MW-2

In 1995, Growth Environmental (on behalf of the ADEQ) installed monitoring wells MW-1 (located directly downgradient from the former Western Dry Cleaners facility) and MW-2 (directly downgradient from the former Aladdin Dry Cleaners facility) along Western Avenue. Both MW-1

[1] The detection limit for all samples was 2.0 µg/L, with the exception of sample COG-02, which was 20 µg/L.

and MW-2 are located hydraulically upgradient from the COGPW monitoring wells. In addition, a soil boring was completed to the northeast of MW-1 (designated as SB-3B) and northeast of MW-2 (designated as SB-3A) (Figure 1-2). Prior to abandoning the soil borings, groundwater samples were collected from the open borehole to assess the extent of the PCE plume to the north of Western Avenue. PCE was not detected in groundwater samples collected from soil borings SB-3A and SB-3B, or monitoring well MW-1. PCE concentrations were reported at 51 µg/L in monitoring well MW-2.

2.4 1996 - 1999 GROUNDWATER SAMPLING

Between April 1996 and April 1999, a total of 11 rounds of groundwater samples were collected by the ADEQ from monitoring wells MW-1 and MW-2; monitoring well COG-MW3 was sampled during eight of the sampling events; monitoring wells GMW-4 and GMW-5 (both installed as part of the PGA-S Superfund Site) were sampled during one and 10 sampling events, respectively.

Analytical data indicated that PCE was present in all wells sampled, as follows:

- MW-1: from 87 µg/L (April 1996) to 24 µg/L (April 1999);
- MW-2: from 73 µg/L (April 1996) to 13 µg/L (December 1998);
- COG-MW3: from 82 µg/L (December 1996) to 19 µg/L (December 1998);
- GMW-4: reported at 34 µg/L (sampled on December 1996); and
- GMW-5: from 9.5 µg/L (December 1996) to 5.6 µg/L (December 1997).

2.5 2000 INSTALLATION AND SAMPLING OF MONITORING WELLS

In October 2000, GeoTrans oversaw installation of five monitoring wells (designated as MW-3 through MW-7) at the Site on behalf of the ADEQ. The objective of the monitoring wells installed by GeoTrans was to assess the extent of contamination near the edge of the PCE plume to the east, north, and south, as well as to evaluate PCE concentrations near the suspected center of the plume. Figure 2-2 illustrates locations for these wells, and monitoring well construction details are presented in Table 2-2. A copy of the soil boring logs is included in Appendix A.

The monitoring wells installed by GeoTrans were located as follows:

- Monitoring well MW-3 was installed near the corner of north 5th Street and east Western Avenue (Figure 2-2) to assess the potential upgradient extent of the plume. Monitoring well MW-3 is also located upgradient of MW-2, where PCE concentrations have historically exceeded the ADEQ AWQS of 5 µg/L. The former Aladdin Dry Cleaners was located between MW-2 and MW-3.

- Monitoring well MW-4 was installed near the corner of north 3rd Street and West Madden (Figure 2-2) to assess the northern extent of the PCE plume.

- Monitoring well MW-5 was installed along South 3rd Street (approximately 500 feet south of Western Avenue) to assess the degree of groundwater contamination near the center of

the PCE plume, as well as evaluate natural attenuation processes that may be occurring within this area. Additionally, Hydropunch™ groundwater sampling was performed in an attempt to assess the vertical extent of groundwater contamination in the area.

- Monitoring well MW-6 was installed near the corner of south 3rd Street and west Ely Lane to assess the southern extent of the PCE plume.

- Monitoring well MW-7 was installed approximately 400 feet east of north Litchfield Road and 1000 feet south of Western Avenue, near the upgradient boundary of the PGA-S Superfund Site. This location was anticipated to be in the middle of the horizontal extent of the PCE plume. The objective of this well was to assess the degree of contamination at this location, as well as evaluate natural attenuation processes that may be occurring in the area. Additionally, Hydropunch™ groundwater sampling was performed in an attempt to assess the vertical extent of groundwater contamination within the area.

Drilling was performed by THF Drilling, Inc. (THF) using a Becker Dual Wall Air Percussion drill rig. At each of the five drilling locations, a 9-inch diameter exploration borehole was drilled to a depth of approximately 130 feet bgs. Schedule 40 PVC, 0.020-inch slotted well screen, and blank casing was used in well installation. Colorado Silica Sand (8-12) was added as filter pack. Following well installation, each well was developed through a combination of bailing and pumping. After well development was completed, THF equipped each monitoring well with a dedicated submersible pump. Table 2-2 documents well construction information for wells at the Site. Appendix B contains copies of the geologic cross sections.

2.5.1 Hydropunch Investigation

During completion of soil borings MW-5 and MW-7, depth-specific Hydropunch™ groundwater samples were collected in an attempt to delineate the vertical extent of contaminants within the aquifer. Hydropunch™ groundwater samples were collected as follows:

- MW-5: 65 feet, 95 feet, and 125 feet bgs;
- MW-7: 75 feet, 95 feet, and 115 feet bgs.

Samples were analyzed for VOCs (including PCE) following US EPA Method 8021B. Analytical results for the PCE (detection limit was 0.5 μg/L) are as follows:

- MW-5: 4.1 μg/L at 65 feet bgs; 0.54 μg/L at 95 feet bgs; <0.5 μg/L at 125 feet bgs.
- MW-7: <0.5 μg/L in all three samples collected.

Based on analytical data, the vertical extent of contaminant migration within the Subunit A of the Upper Alluvial Unit (UAU) appears to extend to a depth of less than 95 feet bgs. Because the UAU extends to a depth of approximately130 feet bgs, further groundwater investigations of Subunits B and/or C of the UAU were not performed.

2.6 2001 SITE INDUSTRIAL SURVEY AND EPA PA/SI INVESTIGATIONS

In 2001, the ADEQ contracted GeoTrans to conduct a site industrial survey in the vicinity of the Western Avenue Plume WQARF Site to identify potential sources of the PCE plume. Based on data collected by GeoTrans, the former location of six dry cleaning facilities were identified in the area: the Western Dry Cleaner, Aladdin Cleaners, Avondale City Cleaners, Quinn Cleaners, Goodyear Dry Cleaners, and a dry cleaning facility of unknown name that historically operated at 1072 South Litchfield Road (Figure 2-3).

Based on the location of the above noted potential sources of PCE relative to the location of existing monitoring wells MW-1 and MW-2, additional field investigation was conducted at the former site of the Western Avenue Dry Cleaning (WDC) and the Aladdin Dry Cleaning (ADC) facilities.

2.6.1 Former Western Avenue Dry Cleaning

The former WDC facility was located at 216/218 West Western Avenue. The WDC facility operated approximately 600 feet east (upgradient) of monitoring well MW-1, where the highest concentrations of PCE (up to 87 µg/L in April 1996) have been reported.

According to the Cole Directories, a Chevron gas and service station operated at that location between 1963 and 1985. The Cole Directory indicates that the WDC operated at 218 W. Western Avenue, Avondale, between 1963 and 1985. However, based on the *Preliminary Assessment/Site Inspection Report; Western Dry Cleaners* (PA Report) prepared by the ADEQ in June 1995 (ADEQ 1995), the WDC was located at 216 West Western Avenue in 1978, at the time when Mr. Hong Kim (owner/operator of the WDC) purchased it from Mr. David Waltman. The reason for the discrepancy on the street number for the WDC is currently unknown. On January 21, 1985, Mr. Kim moved the WDC location to the current address of 300 West Western Avenue to expand the customer parking area.

During a site visit conducted by the ADEQ on November 24, 1994, a former gas pump island was observed at the south side of the building, at approximately 25 feet to the east of the eastern end of the building. The gas pumps were not present at the time of the ADEQ field reconnaissance. The PA Report also documents the potential presence of two to three underground storage tanks (USTs) buried on the southeast corner of the lot.

In March 1995, a total of 15 soil vapor samples (including system blanks, ambient air samples, and duplicate samples) were collected by the ADEQ at a depth of 8.5 feet bgs, except for the two soil vapor samples near the buried USTs, which were collected at a depth of 13.5 feet bgs. Samples collected were analyzed for VOCs following US EPA Modified Method 8010/8020. Soil vapor sample results indicated the presence of PCE above the method detection limit in samples WDC-6SV, WDC-7SV, WDC-9SV, and WDC-10SV. The highest concentration was detected in sample WDC-10SV at 5.4 µg/L. Figure 2-4 illustrates the location of the soil vapor samples collected, as well as PCE concentrations reported at each location. A summary of soil vapor analytical data is presented in Table 2-7; a copy of the laboratory analytical data is included in Appendix C.

In March 1995, the ADEQ collected 13 soil samples (including duplicate samples) using a Geoprobe® Large Bore Sampler. Samples were collected at WDC-1, WDC-2, WDC-3, WDC-4,

WDC-5, WDC-6, WDC-7, WDC-8, WDC-9, and WDC-10. Samples were collected at a depth of 10 to 12 feet bgs; in the vicinity of the USTs, soil samples (WDC-4 and WDC-5) were collected at a depth of 15 to 17 feet bgs. Locations of samples collected are shown in Figure 2-4. Soil sample analytical results indicate that all concentrations were below the method detection limit of 4 µg/L. A copy of the analytical report is included in Appendix D.

2.6.2 Former Aladdin Dry Cleaners

The former ADC was located at 322 East Western Avenue. The former ADC is upgradient from monitoring well MW-2, where PCE concentrations were reported up to 76 µg/L in June 2001. The facility operated under the name of Aladdin Cleaners from February 5, 1992, to January 1998. In 1998, the name of the business changed to Estrella Equestrian Laundry. Prior to 1991, a dry cleaning facility by the name of Briteway Cleaners operated at that location (ADEQ, 2001). A fitness spa currently operates at this location.

According to the Aladdin Dry Cleaner's owner, all-dry-cleaning operations were conducted at this address, even though a Cole Directory search indicates that the business was also located at 310 East Western Avenue. The 310 East Western Avenue was apparently the address of the former Aladdin Dry Cleaner's business office.

In March 2001, the ADEQ conducted a PA/SI at the ADC facility. This investigation included collection of 11 soil and 17 soil vapor samples from 10 sampling locations. Samples were collected at depths of 8.5 to 14.5 feet bgs and analyzed for VOCs following Field Analytical Service Program Procedure #902. PCE was not detected in any of the soil samples collected. PCE concentrations in soil vapor samples (collected at a depth of approximately 8.5 feet) ranged from non-detect (sample collected northwest of the parking lot) to 70 µg/L, as displayed in Figure 2-5. The highest concentrations were detected in two soil vapor samples collected approximately 30 feet west of the Aladdin Cleaners building. A summary of soil vapor analytical data collected during this investigation is presented in Table 2-8. A copy of the laboratory analytical report is included in Appendix E.

The ADEQ concluded that the WDC and the ADC did not present a potential source of PCE in groundwater. Although the geometry and behavior of the groundwater plume implies a source in the vicinity of monitoring well MW-1, the location of this source is still undetermined. Detailed information regarding the PA/SI investigations conducted by the ADEQ can be found in the reports titled *Preliminary Assessment /Site Inspection Report, Western Dry Cleaners,* dated June 30, 1995 and *Preliminary Assessment/Site Inspection Report, Aladdin Cleaners,* dated June 15, 2001.

In addition to the two facilities listed above, the following facilities (shown in Figure 2-3) were identified during the industrial survey conducted by GeoTrans:

3. Avondale City Cleaners (ACC) operated at 207 East Western Avenue between 1959 and 1972. The ACC facility was located approximately 50 to 100 feet east (upgradient) of monitoring well MW-2. The ACC operated prior to the promulgation of the Resource Conservation and Recovery Act (RCRA); therefore, records related to chemicals used onsite may not be available.

4. Quinn Cleaners operated at 404 East Western Avenue between 1957 and 1961. The facility was located approximately 700 feet east (upgradient) of groundwater monitoring well MW-2. Quinn Cleaners operated prior to the promulgation of RCRA; therefore, records related to chemicals used onsite may not be available.

5. Two dry cleaners operated in adjacent suites of a shopping plaza between 1995 and 2002: Goodyear Dry Cleaners operated at 1084 South Litchfield Road between 1995 and 2000, and a dry cleaning facility of unknown name operated at 1072 South Litchfield Road between 2001 and 2002. Both locations are hydraulically downgradient from the Western Avenue WQARF Site's monitoring wells, but hydraulically upgradient from the PGA-S Superfund Site monitoring wells.

In summary, the PA/SI investigations conducted by ADEQ indicate that none of the facilities investigated represent a significant source of PCE contamination in soil or groundwater. Although the geometry and behavior of the groundwater plume appears to imply a source(s) in the vicinity of monitoring well MW-1, the specific location(s)/source(s) has not been identified.

3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Site is located on the western portion of the Salt River Valley (WSRV), a broad, relatively level alluvial valley in the Basin and Range physiographic province of Central Arizona. This alluvium represents a combination of deposits from the surrounding mountains and fluvial deposits from the Salt River. A detailed description of the general alluvial basin geology is documented in the United States Geological Survey (USGS) Open-File Report 89-378, *Geohydrology and Water Resources of Alluvial Basins in South-Central Arizona and Parts of Adjacent States* (Anderson et al., 1990).

The USGS divides the stratigraphy of the WSRV into the Mountain Bedrock, Pre-Basin and Range Sediments, Lower Basin-Fill, Upper Basin-Fill, and Stream Alluvium. In upward sequence, the Mountain Bedrock consists of igneous, metamorphic and consolidated sedimentary rocks ranging from Precambrian to Cenozoic in age. The Pre-Basin and Range Sediments consist of moderately to highly consolidated continental deposits of silt, clay gravel and conglomerate, primarily Tertiary in age. Examples of these sediments would be Camelshead Formation and the Tempe Beds, exposed in the Papago Park area of east Phoenix. These sediments generally exceed several thousand feet in thickness. Above the Pre-Basin and Range Sediments lie the Lower Basin-Fill Sediments. The thickness, areal extent, and grain size of the Lower Basin-Fill Sediments are variable, but generally consist of weakly to highly consolidated gravel, sand, silt and clay and may include interbedded evaporate deposits and volcanic rocks at selected locations. The Lower Basin-Fill Sediments typically include 2,000 to 7,000 feet of fine-grained facies of silt and clay at the base, in the center of the basins in which these deposits are found.

The Upper Basin fill is generally composed of unconsolidated to moderately consolidated fanglomerates and alluvial deposits laid down during the last stages of the Basin and Range disturbance. This unit also grades into finer grained facies towards the interiors of the basins, but is generally coarser than the lower unit and with less evaporates. This unit is generally a very good producer of groundwater. Some fine-grained deposits in this unit impede the vertical migration of groundwater, such that perched or semi-perched conditions exist in much of the area near the Site. The upper basin fill is composed mainly of silt, sand, and gravel; locally, relatively thin clay layers can be present. Within the WSRV, the unit is predominantly gravel and sand with some thick zones of cobbles near the present channels of the Salt River. Gravel and sand is also found in areas north and south of the present-day channel, where the ancestral channel was located.

The upper-most geologic unit in the WSRV is the Stream Alluvium, which represents stream channel and related sediments typically up to 1,200 feet thick. This sedimentary unit was deposited after the basins were filled, and during the establishment of the present drainage system. Sediments consist of flood-plain, channel-fill, alluvial-fan, and playa deposits. The stream alluvium is generally unconsolidated, except where cemented by caliche. Grain size ranges from boulder- and cobble-size gravel in the alluvial fans to clays in local playa deposits. In general, sand and gravel are found along the stream channels.

The Arizona Department of Water Resources (ADWR) documented the Site area hydrogeology in a document titled *A Regional Groundwater Flow Model of the Salt River Valley - Phase I Phoenix Active Management Area Hydrogeologic Framework and Basic Data Report* (Corkhill et al., 1993). Although the hydrogeologic stratigraphy generally corresponds to the geologic units devised by the USGS, the correlation is not exact and different unit names are used.

The alluvial sediments (Lower and Upper Basin Fill) are subdivided into three hydrologic units: the Upper, Middle, and Lower Alluvial units (UAU, MAU and LAU, respectively). The total thickness of alluvial sediments is estimated to exceed 1,200 feet in the vicinity of the Site.

The LAU is composed of consolidated sands and gravels. The MAU is also consolidated, but it contains a higher proportion of fine-grain material. Both the MAU and LAU represent depositional environment within closed basin (lake bed) conditions. Although the hydraulic properties of the MAU are less favorable for water production, the MAU is the most productive unit basin-wide. The UAU consists of unconsolidated sands and gravels deposited by flowing drainages, and is the most permeable unit. According to the ADWR, the UAU is typically 300 to 400 feet thick in the WSRV. Where thick saturated sections of the UAU are present, the groundwater production rates are generally very high.

In addition to the UAU, MAU and LAU, several noted geologic units have been classified, including the pre-Basin and Range sedimentary units (Tempe Beds and Camelshead Formation) and the crystalline bedrock. Hydrologically, these units are not significant for groundwater use or production except in a few limited areas of the WSRV.

3.2 SITE GEOLOGY AND HYDROGEOLOGY

The alluvial sediments (which corresponds to the Lower and Upper Basin Fill following the USGS nomenclature) are subdivided into three hydrologic units: the UAU, MAU and LAU, respectively. The total thickness of alluvial sediments is estimated to exceed 1,200 feet in the vicinity of the Site.

The UAU beneath the site extends from ground surface to its contact with the MAU at approximately 360 feet bgs. The UAU consists of poorly to well-sorted deposits of clay, silt, sand, and gravel. Based on particle size distribution and data from geophysical logs, the UAU can be subdivided into: Subunit A, Subunit B, and Subunit C. Coarse-grained sediments (greater than silt size) represent approximately 60 to 70 percent of Subunits A and C, and approximately 20 to 30 percent in Subunit B.

Subunit A is the uppermost subunit of the UAU extending to a depth of approximately 130 feet bgs. It consists of interbedded deposits of alluvial sediments ranging from silt and clay to varying amounts of sand and gravel. Subunit A is considered an unconfined aquifer; the saturated portion, if found, is located within the lower one-half to one-third of the subunit. Water from Subunit A is used for irrigation purposes. Based on aquifer testing conducted as part of the investigation at the PGA-S Superfund Site, the transmissivity of Subunit A is estimated to range from 100 to 80,000 gallons per day per foot (gpd/ft), with an average of 20,000 gpd/ft. The average hydraulic conductivity was determined to be about 400 gallons per day per square foot (gpd/ft^2); the specific yield likely range between 0.05 and 0.15 (CH2M-Hill 1989).

Subunit B consists primarily of a thick clay layer between approximately 130 feet and 240 feet bgs. Current site-specific subsurface data is not sufficient to determine if this subunit is continuous and/or confining below the Site. Subunit B is interpreted to be an aquitard between Subunits A and C. The thickness of the subunit and grain size are the main factors in retarding the vertical groundwater flow between Subunits A and C. Based on aquifer testing conducted at the PGA-S Superfund Site, the average transmissivity of Subunit B is estimated at approximately 2,000 gpd/ft; the average horizontal hydraulic conductivity was estimated at 40 gpd/ft^2. The vertical hydraulic conductivity ranged from 0.04 and 4 gpd/ft^2 (CH2M-Hill 1989).

Subunit C is the lowermost subunit of the UAU and extends from the base of Subunit B (approximately 240 feet bgs) to the top of the MAU, at a depth of approximately 360 feet bgs. Within the UAU, Subunit C is the primary source of groundwater for municipal and agricultural purposes. Subunit C consists of interbedded alluvial sediments ranging from clay to poorly-sorted gravel. The upper half of the subunit generally consists of sandy gravel; the lower half of the subunit (generally finer grained than the upper half of the subunit) consists mainly of interbedded deposits of sand, clay and gravel. Based on studies conducted at the PGA-S Superfund Site, Subunit C is interpreted to be a highly transmissive, leaky confined aquifer. Some aquifer interconnection may take place between Subunit C and thin transmissive sand lenses (where present) within the upper portion of the MAU. Based on aquifer testing conducted at the PGA-S Superfund Site, the estimated transmissivity of Subunit C is estimated to be 120,000 gpd/ft; the average hydraulic conductivity is estimated at 1,000 gpd/ft^2 and 600 gpd/ft^2 for the upper and lower halves of Subunit C, respectively.

3.3 HISTORICAL WATER LEVEL DATA

GeoTrans has completed groundwater monitoring and sampling at the Site since November 2000, including water level measurements, to characterize the nature of contamination at the Site. Results from previous monitoring and groundwater sampling conducted by GeoTrans between November 2000 and March 2003 are documented in several reports, which are referenced in Section 9.0 of this report.

Current water levels are approximately 4 to 14 feet lower than the highest levels noted in early 2001. Table 2-3 presents a summary of water level data for the Site monitoring wells. Water level data from monitoring wells GMW-4, GMW-5, COG-MW3, MW-1 and MW-2 are also available for the period 1995 to 2000. Since the groundwater sampling event conducted in March 2003, groundwater levels have declined approximately 1 to 2 feet. The data also indicate that groundwater flow is and has been generally in a westward direction. Figures 3-1 through 3-10 illustrate water level versus PCE concentrations data collected between 1995 and January 2005 for monitoring wells MW-1, MW-2, GMW-4, GMW-5, COG-MW3, MW-3, MW-4, MW-5, MW-6, and MW-7.

3.3.1 Site-Related Water Level Monitoring

GeoTrans has conducted water level monitoring at the Site since November 2000. Currently, water levels are approximately 4 to 14 feet lower than the highest levels noted in early 2001. Water level data from monitoring wells GMW-4, GMW-5, COG-MW3, MW-1 and MW-2 is also available for the period 1995 to 2000.

Figure 3-11 illustrates water levels for November 2000, which included seven monitoring wells. Water levels were highest at well MW-1, with groundwater flow oriented generally westward. The high water level at MW-1 is questionable, and is not evident in subsequent monitoring rounds. For this reason, contouring of the data were not completed, since this data point appears to be questionable.

Figures 3-12 through 3-20 illustrate water levels for monitoring events between January 2001 through January 2005.

Based on the most recent depth-to-water measurements collected by GeoTrans on January 27, 28, 2005, as well as February 3, 2005, the general groundwater flow direction in Subunit A appears to be toward the west. Figure 3-20 illustrates groundwater levels and flow direction at the Site for January/February 2005. A review of these data indicates that the groundwater gradient in the eastern portion of the Site along Western Avenue was calculated to be approximately 0.002 feet per foot (ft/ft). The groundwater gradient in the western portion of the Site, near Litchfield Road, was calculated to be approximately 0.002 ft/ft.

Based on water level elevations, it appears that north of Western Avenue groundwater flow may have shifted from north-westward to a westward flow. Water level elevations in the southwest portion of the Site, near MW-7, indicate the flow regime changes in this area. A groundwater divide in this area appears to be present, causing the groundwater to flow slightly north of west (north of MW-7), and south of west (south of MW-7). The effects of the groundwater divide were less evident during the January 2004 water level data collection period. The reason for this flow regime is not known at this time. The lack of monitoring wells north and south of Western Avenue, between Central Avenue and 5th Street, precludes a better understanding of the groundwater flow in this particular area. Table 2-3 shows the water levels collected historically through January 2005.

4.1 INTRODUCTION

This section presents a data quality assessment for laboratory analytical results collected during 2004 and 2005. Based on that review, analytical results provided by Columbia Analytical Services Inc. (CAS) are valid within the limitations of a Tier II evaluation. The goal of a Tier II data evaluation is to identify data quality issues, deficiencies, and indicate whether the quality of the data is consistent with its intended use. Tier II data can be used for site assessment investigations.

4.1.1 Analytical Data Evaluation

Analytical data may be qualified for any of the following reasons:

1. Laboratory deviation from the designated method;
2. The data did not meet the designated method criteria; and/or,
3. The professional judgement of the data reviewer.

Data qualifiers are used by the laboratory to describe the analytical results of individual samples. A list of Arizona Data Qualifiers is included with the analytical data report, and is presented in Appendix G. One, none, or a combination of these data qualifiers may appear in the analytical reports to flag the analytical results of an individual sample, based on the reasons given above.

4.1.2 Previously Evaluated Data

As noted, this section presents an evaluation of laboratory analytical results collected during 2004 and 2005. Historically, samples have been collected (and evaluated) by ADEQ (prior to November 2000) and GeoTrans (since November 2000). Copies of analytical reports for samples collected by ADEQ prior to 2000 were provided to GeoTrans during the initial phases of the project. These data have been reviewed and incorporated into this report where relevant, but GeoTrans has not conducted a data validation process for these data. Data collected by GeoTrans since November 2000 have been evaluated as part of each previous report where documented. Copies of laboratory analytical reports for samples collected by GeoTrans are included in a CD attached to this report.

4.2 JANUARY 2004 GROUNDWATER SAMPLING

Groundwater samples collected from seven monitoring wells were submitted to CAS on January 30, 2004, under service request No. X2400084. The seven samples (designated MW-1 through MW-7) were submitted for VOC analysis following US EPA Method 8260B. In addition, a trip blank (TB) and an equipment blank (EB) sample were submitted for quality assurance/quality control (QA/QC) purposes. Laboratory QA/QC samples included a Method Blank, Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS). All samples submitted were analyzed within the holding time requirements recommended by the US EPA. A copy of the laboratory analytical report is included in Appendix F. A review of the analytical report provided by CAS indicates that none of the data were qualified.

4.2.1 Analytical Results of Duplicate Samples

A groundwater duplicate sample was collected at monitoring well COG-MW3, and was labeled ADEQ-MW3. The sample was collected for QA/QC purposes of field analytical data. The analytical report showed no discrepancies in the analytical results between the original sample and its duplicate. The only analyte reported in both samples is tetrachloroethene at a concentration of 4.4 µg/L in sample COG-MW3 and 5 µg/L in its duplicate sample ADEQ-MW3. Based on the good correlation in both samples, and the fact that no other discrepancies were found between the analytical results, it is concluded that the data is representative of site conditions and can be used for their intended purposes.

4.2.2 Analytical Results of QA/QC Samples

Analytical results for the trip blank sample TB (submitted to the laboratory for QA/QC purposes) showed that all VOC concentrations were below the laboratory method reporting limit (MRL) for each of the analytes. However, analytical data for the equipment blank sample EB-1 (submitted as a QA/QC sample) showed the presence of the following analytes:

- 9.9 µg/L bromodichloromethane;
- 5.8 µg/L bromoform;
- 4.7 µg/L chloroform;
- 14 µg/L dibromochloromethane;
- 0.97 µg/L ethylbenzene;
- 2.0 µg/L PCE;
- 1.2 µg/L toluene;
- 2.3 µg/L xylenes (m,p); and,
- 1.5 µg/L xylenes (o).

None of the analytes detected in the equipment blank sample EB-1 (with the exception of PCE) were detected in the groundwater samples collected from the Site monitoring wells or the laboratory QA/QC samples. Therefore, it appears that this issue is specifically related to the decontamination of the field equipment from where the sample was collected, rather than being indicative of additional contaminants present in groundwater. The concentrations of trihalomethane compounds (THMs) suggest that chlorinated water (such as tap water) may not have been removed from the equipment prior to sample collection, or may have been used to collect the sample in place of deionized water. Detectable concentrations of BTEX compounds could have a number of sources, including airborne gasoline vapors, or contact with the gasoline in the generator. The detection of PCE is indicative of inadequate equipment decontamination.

Analytical data for the laboratory Method Blank QA/QC sample were not qualified, and did not show detected concentrations of any of the analytes. The percent recovery for all surrogates were within the acceptable range established for each surrogate. The surrogate percent recovery for the sample batches was also within the established acceptable limits. Surrogate recovery analysis was performed in the following samples: GMW-5, COG-MW3, ADEQ-MW3, Trip Blank, Method Blank, Batch QC, Batch QCMS, Batch QCDMS, LCS, and DLCS. Laboratory QA/QC analytical results are included within the analytical data presented in Appendix F.

4.2.3 Data Usability

As stated in Section 4.2.2, analytes (other than PCE) which were detected in the equipment blank sample (EB-1) were not detected in any other sample collected, or in any of the QA/QC samples analyzed. GeoTrans has undertaken additional field training to address concerns regarding equipment decontamination procedures. Because THM and BTEX compounds were not noted in samples, the issue appears to be confined primarily to PCE detection. From a statistical, quantitative approach, the detection of PCE in the equipment blank would tend to indicate the potential for a positive bias for this round of data.

The EPA webpage guidance on environmental data verification and validation (http://www.epa.gov/QUALITY/qs-docs/g8-final.pdf) suggests on page 61, Step 3:

> *Any QC deficiency may bring particular sample results into question. The data validator should consider the deficiency and make a determination as to whether a particular analytical batch is adversely affected, whether the nonconformance indicates a widespread bias in the analysis that affects all samples, or whether the deficiency has no significant impact on data quality and the sample results can be used as reported. As noted earlier, the purpose of the sampling and analysis effort should be taken into account during the data validation process in order to understand the end-use of the data.*

If a statistical investigation of the data for bias to a normal distribution were completed, it would be significantly complicated by the presence of a declining trend in PCE concentrations. This might tend to invalidate a direct bias determination without accounting for the trend. Additionally the number of data points available for such a statistical analysis is low (8 data points prior to January 2004) thereby weakening the utility for such an evaluation. Additionally, the use of the data for this project is more qualitative, and trend-oriented.

An examination of the historical PCE detections indicates that the sample results from the January 2004 sampling round do not appear to deviate significantly from previous values. Therefore, it appears that the reliability of the samples collected has not been adversely impacted. The fact that the data were not qualified, and that all surrogate recoveries were within the acceptable range established are also indicators that the data collected are reliable. Therefore, the data collected may be used for all purposes within the limitations of a Tier II data deliverable.

4.3 JANUARY 2005 GROUNDWATER SAMPLING

A total of nine groundwater samples were collected by GeoTrans in January 2005. Samples were designated as MW-1 through MW-7, GMW-5, and COG-MW3. Field QA/QC samples were collected as follows: ADEQ MW-1 (sample duplicate of MW-1), ADEQ MW-6 (sample duplicate of MW-6), ADEQG MW-3 (sample duplicate of COG MW-3), and a Trip Blank. The laboratory QA/QC samples included a Method Blank, MS, DMS, LCS, and DLCS. No discrepancies with the accompanying chain of custody were reported by the laboratory. All samples submitted were analyzed within the holding time requirements recommended by the US EPA. A copy of the laboratory analytical report is included in Appendix H.

4.3.1 Analytical Data Evaluation

A review of the analytical report provided by CAS indicates that 1,3-dichloropropane; 1,2-dibromoethane; chlorobenzene; bromobenzene; and 1,3-dichlorobenzene were qualified with one or more of the following qualifiers:

- L1: indicates that the associated blank spike recovery was above the laboratory acceptance limits;
- M1: indicates that the matrix spike recovery was high, however, the method control sample recovery was acceptable; and,
- V8: indicates that the calibration verification recovery was below the method control limit for this analyte; however, the average percent difference or percent drift for all the analytes met method criteria.

These analytes are not COCs at the Site.

4.3.2 Analytical Results of Duplicate Samples

Duplicate groundwater samples were collected at monitoring wells MW-1 (sample duplicate labeled ADEQ-MW1), MW-6 (sample duplicate labeled ADEQ-MW6), and COG-MW3 (sample duplicate labeled ADEQ-MW3). Based on the laboratory analytical report, no discrepancies were reported in the results between samples MW-1 and its duplicate ADEQ-MW1. PCE was the only analyte reported in both samples at concentrations of 5.1 µg/L (MW-1) and 3.9 µg/L (ADEQ-MW1). These concentrations are within an acceptable range between each other, and do not present a concern regarding the validity and representativeness of the data.

Neither sample MW-6 nor its duplicate sample ADEQ-MW6 indicated measureable concentrations of analytes. Analytical results of sample COG-MW3 and its duplicate ADEQ-MW3 indicated PCE at concentrations of 2.1 µg/L in both samples.

4.3.3 Analytical Results of Quality Assurance/Quality Control Samples

QA/QC samples collected in the field included a field equipment blank (EB-1) and a trip blank (TB). Laboratory QA/QC samples included a method blank, matrix spike (QCMS), a duplicate matrix spike (QCDMS), a lab control spike, and a duplicate lab control spike. The laboratory surrogate recovery was within the method control limits. Concentrations of analytes were not detected in the trip blank sample, indicating that no outside contamination was introduced in the samples collected during transportation to the analytical laboratory. None of the analytes were detected in the laboratory QA/QC samples, indicating that no laboratory contamination was introduced in the samples collected during analysis. All the recovery percentages were reported within the method control limits. All concentrations of analytes were reported as none detected; however, several of the analytes were flagged with one or more of the qualifiers discussed in Section 4.3.1. As noted, these analytes are not COCs at the Site.

4.3.4 Data Usability

The reported concentrations of PCE were not qualified by the laboratory; therefore, the analytical data is still considered valid and representative for the Site.

The percent recovery for analytes qualified with either a L1 or M1 was higher than the laboratory acceptance limits, indicating that concentrations reported were higher than actual concentrations present. Based on the fact that these analytes are not COCs at the Site, and that they were not detected in any of the QA/QC samples analyzed, the validity and representativeness of the data is not believed to be compromised.

The calibration verification recovery for analytes qualified with a "V" were below the method control limit; however, as stated in the analytical report, the average percent difference for all analytes met the method criteria. The reason for qualifying the data relates to laboratory instrumentation calibration, and not to the sample collection methodology. None of these analytes were present in groundwater samples collected or are COCs at the Site.

Concentrations for PCE reported for samples analyzed were not qualified and do not appear to be impacted by laboratory instrumentation issues; therefore, the concentrations reported are considered to be valid when used within the limitations of a Tier II data review.

5.0 NATURE AND EXTENT OF CONTAMINATION

5.1 CONTAMINANTS OF CONCERN

PCE is the COC identified at the Site. Table 5-1 presents a summary of PCE concentrations detected at each monitoring well. Since 1990, concentrations of PCE have been detected in groundwater samples collected from several monitoring wells located at the PGA-S Superfund Site, which is located hydraulically downgradient from the Site's western boundary. In 1993, PCE was detected in groundwater samples collected from monitoring wells upgradient from the PGA-S Superfund Site. Since 1993, PCE concentrations in groundwater samples collected from monitoring wells at the PGA-S Superfund Site have consistently exceeded the aquifer water quality standards (AWQS). PCE has also been detected in four groundwater extraction wells operated as part of the PGA-S Superfund Site groundwater pump-and-treat system. No other COCs have been identified in groundwater beneath the Site.

5.2 OTHER DETECTED CONTAMINANTS

Based on the current plume configuration, impacted groundwater at the PGA-S Superfund Site is in general being captured by the pumping wells. Figures 5-1 and 5-2 illustrate water levels for November 2004 in Subunits A and C. To date, TCE and chromium have not been detected at concentrations which exceed their respective AWQS in groundwater samples from the Site. BTEX constituents have been detected at the COGPW facility. Nitrate has been detected at concentrations which exceed AWQS, but nitrate is not a COC. Arsenic has also been detected at concentratiosn which exceed the AWQS, but arsenic is also not considered a COC.

5.3 PHYSICAL AND CHEMICAL PROPERTIES OF THE CONTAMINANTS OF CONCERN

Approximately 60 percent of the PCE used in the US (in 1991), was in the dry cleaning and textile industries. Among other applications, PCE is also used in vapor degreasing and metal cleaning operations, and the production of solvent soaps, adhesives, sealants, and as a solvent in various consumer products. PCE is a colorless, non-flammable liquid that does not occur naturally in the environment. Its solubility is less than 1 milligram per liter (mg/L), and a density of 1.63 grams/milliliter. The density of water is 1 gram/milliliter.

5.4 CONTAMINANT SOURCES

The highest concentrations of PCE in groundwater have been identified in the shallow saturated zone. Based on results of the shallow soil borings and soil vapor investigations conducted by the ADEQ to date, it appears that there is/are no continuing on-site source(s) of VOCs impacting the groundwater. Due to the lack of definitive results from the soil vapor investigations conducted within likely source areas, the source(s) is/are undetermined at this time. It should be emphasized that results of subsurface soil and soil vapor investigations conducted to date have been inconclusive

as far as identifying a source area(s). Based on data obtained from long-term monitoring of groundwater flow, the source(s) is/are suspected to be along Western Avenue.

Dissolved-phase PCE within the shallow aquifer (Subunit A) has migrated off-site; however, the aerial extent of contaminant migration is anticipated to continue to attenuate as concentrations of PCE mix and dilute with uncontaminated groundwater. The anticipated effects of mixing and dilution on the geometry and extent of the plume migration can be verified using groundwater modeling.

5.5 SOURCE AREA(S)

Based on information collected while performing the Site Industrial Survey, GeoTrans identified more than 50 potential locations within the boundaries of the survey area that historically had and/or currently have the potential for using PCE (Table 5-2). Based on the distribution of PCE concentrations in groundwater, the investigation focused along Western Avenue, where the City of Goodyear Public Works Facility is located, and six former dry cleaners operated (Table 5-3) (Figure 2-3). Although PCE has been detected in groundwater at the Site, a source(s) has/have not yet been identified. The exact nature of the operation and/or physical structure where the release originated from is/are currently unknown. Analytical data collected to date indicate that dense non-aqueous phase liquids (DNAPLs) are not present in groundwater.

Based on the distribution of PCE in groundwater, the most probable source areas are former dry cleaning facilities along Western Avenue, possibly the locations of Western Dry Cleaners and Aladdin Dry Cleaners. PCE was detected in soil vapor at each site, although at concentrations which did not indicate a highly contaminated source area. The City of Goodyear Public Works Facility did not have detectable concentrations of PCE in soil vapor, and may not be a source area for PCE contamination.

5.6 DISTRIBUTION AND TRENDS OF SOIL CONTAMINATION

Analytical data collected from previous investigations at the Site show that there are no elevated concentrations of PCE remaining in subsurface soil. Figures 2-1, 2-4 and 2-5 show the locations where previous subsurface soil and soil vapor samples were collected, as well as the PCE concentrations reported. No clear source area for soil contamination has been identified.

5.7 DISTRIBUTION AND TRENDS OF GROUNDWATER CONTAMINATION

Figures 3-1 through 3-10 illustrate PCE concentrations at each monitoring well sampled between 1995 and January 2005. In general, the highest PCE concentrations were detected during the first years of the sampling period. The highest PCE concentration was detected in monitoring well MW-1during the March 1996 sampling event, of 87 µg/L. PCE was also detected at relatively high concentrations in monitoring well MW-2 (73 µg/L) and GMW-4 (34 µg/L). The highest concentration of PCE in monitoring well COG-MW3 (82 µg/L) was detected during the December 1996 sampling event.

Figures 5-3 through 5-12 illustrate PCE concentrations from groundwater sampling conducted from November 2000 through January 2005. Concentrations of PCE in monitoring wells MW-4, MW-5, and MW-7 (constructed in 2000) have generally declined between 2001 and 2004. As of January 2004, no wells exceeded the AWQS for PCE of 5 µg/L. However, results of groundwater samples collected during January 2005 indicate that PCE concentrations in monitoring well MW-1 (5.1 µg/L) exceeded the AWQS of 5 µg/L.

In accordance with the approved scope of work, during the January 2004 sampling event, groundwater samples were collected using both low-flow techniques and standard three well-volume purging. Groundwater samples were collected using low flow sampling techniques from monitoring wells MW-3, MW-4 and MW-5 (January 29, 2004), MW-7 (January 30, 2004), and COG-MW3 (February 1, 2004). PCE was detected in groundwater samples collected from monitoring wells MW-4, MW-5 and COG-MW3 at concentrations of 2.6 µg/L, 2.7 µg/L, and 4.4 µg/L, respectively (Figure 5-11). None of the samples collected contained PCE at concentrations which exceeded the ADEQ AWQS of 5 µg/L.

From January 29 to February 1, 2004 groundwater samples were collected from monitoring wells MW-1, MW-2, MW-6 and GMW-5 after purging three well-volumes and field parameters stabilized. GeoTrans was unable to collect a groundwater sample from monitoring well GMW-4, because its dedicated pump was not operational. PCE was detected in the groundwater sample collected from monitoring well MW-1 at a concentration of 2.9 µg/L (Figure 5-11). A summary of analytical data is presented in Table 2-4. Copies of the laboratory analytical report and the field sampling reports for January/February 2004 are included in Appendix F.

Between January 27 and February 3, 2005, GeoTrans collected groundwater samples from monitoring wells MW-1 through MW-7, COG-3, and GMW-5. PCE concentrations were detected in monitoring well MW-1 at 5.1 µg/L (3.9 µg/L in the duplicate sample); monitoring well MW-2 at 2.1 µg/L; monitoring well MW-4 at 1.9 µg/L; monitoring well MW-5 at 1.4 µg/L; monitoring well MW-7 at 0.81 µg/L; monitoring well COG-3 and its duplicate sample at 2.1 µg/L; and GMW-5 at 0.86 µg/L. A summary of analytical data is presented in Table 2-4. Copies of the laboratory analytical report and the field sampling reports for January/February 2005 are included in Appendix H.

6.0 FATE AND TRANSPORT

6.1 FATE AND TRANSPORT OF PCE IN SOILS

Vertical migration of PCE into the shallow aquifer (Subunit A) is the primary mechanism for groundwater contamination at the Site. The rate of migration is influenced by the physical and chemical properties of PCE and the type of subsurface sediments. Sorption and release from soils is dependent upon organic matter content, temperature, saturation, and salinity. Approximately 97 percent sorption of PCE will take place in unsaturated top soil; however, it is estimated that in saturated deep soils, 26 percent of PCE leaches into the groundwater. Approximately 2 percent of the PCE present in unsaturated top soil will volatilize into soil air. Small amounts of anaerobic microbial degradation may also take place. (http://www.epa.gov/chemfact/s_perchl.txt)

Impacts to the groundwater is likely to be the result of one (or more) of the following mechanisms:

- The amount of PCE released is sufficient to saturate the shallow subsurface sediments and migrate into the groundwater as a DNAPL. As a result, the release point will be a continuous source of PCE into the subsurface soil and shallow aquifer. High concentrations of PCE would be expected in subsurface soils at and/or near the source area;

- PCE is released into the subsurface soil, and migrates into the shallow aquifer by the interaction of percolating surface water and/or infiltration of wastewater leaking from underground sewers; and/or,

- Dissolution of PCE from the gaseous state to a liquid state as it interacts with groundwater or percolating surface water or wastewater.

Based on Site data presented, the first mechanism listed (DNAPL migration) is not supported by the available data. Sufficiently high concentrations of PCE in soils and soil vapor were not identified which would suggest the presence of DNAPL conditions. Additionally, decreasing concentrations of PCE in groundwater suggest that a continuous source (such as a PCE DNAPL) is not present. However, this mechanism may have been operative in the past, prior to the sampling events conducted by ADEQ, and therefore it cannot be ruled out.

The second mechanism presented is supported by the available soil and soil vapor data. PCE was detected in soil vapor at the Western Dry Cleaners and Aladdin Dry Cleaners locations. Concentrations detected at these locations indicated PCE is present in the soils, but not at sufficiently high levels to indicate DNAPL transport. Conceptually, PCE in the vadose zone would be transported by dissolution into percolating waters to groundwater. This mechanism does not contradict soil, soil vapor and groundwater data for the Site.

The third mechanism presented assumes vapor transport of PCE to groundwater. This mechanism is also practical, and because groundwater is fairly shallow at the Site, it is a reasonable transport mechanism.

The actual transport mechanism is likely a combination of the above suggested processes, likely the second and third items presented.

6.2 FATE AND TRANSPORT OF PCE IN GROUNDWATER

Volatilization of PCE into the atmosphere is the main route of removal from water. Hydrolysis occurs very slowly or only under high temperature conditions. The hydrogeology of the aquifer beneath the Site consists of three Subunits. Subunit A consists of alluvial sediments located between the ground surface and approximately 130 feet bgs. Subunit B underlays Subunit A and consists of a thick clay layer, which is generally regarded as an semi-confining layer (CH2MHill, 1989). Subunit C consists of alluvial sediments and is believed to exist between approximately 240 and 360 feet bgs. Water from Subunit A is used for irrigation purposes and groundwater from Subunit C is used for drinking water supply. Based on data collected in January 2005, the depth to groundwater is approximately 65 feet bgs.

6.2.1 Groundwater Movement

The predominant transport mechanism for PCE and other VOCs at the Site is advection. Groundwater is estimated to flow west at a rate of approximately 0.02 to 0.03 ft/day, with PCE transported via advective processes.

6.2.2 Extent of Groundwater Contamination

The Site boundaries are defined by the PCE groundwater contamination plume, which generally extends from Hill Drive to the north, 3rd Street to the east, approximately 1000 feet north of State Route 85 to the south, and Litchfield Road to the west.

6.2.3 Flow and Transport of Contaminants

No well-defined source of PCE in groundwater was been specifically identified at the Site. The highest PCE concentrations have been measured in the shallow saturated zone, in monitoring wells downgradient from Western Dry Cleaning and Aladdin Dry Cleaning locations. Based on the results of the groundwater investigation, it appears that there is not a continuing on-Site source of VOCs to the groundwater (such as a DNAPL), or the source has become isolated within subsurface soils due to declines in groundwater levels.

TCE, PCE, and 1,1-DCE are all hydrophobic chemicals that readily sorb to the organic fraction of the soil matrix. Because of their low solubility, they also sorb to any solid surface to a moderate extent. Sorption retards the rate of transport by advection and serves to disperse a plume that has a discontinuous or variable source by temporarily storing contaminants in the solid phase and subsequently releasing them to cleaner groundwater. Based on the relatively low organic carbon content of the aquifer materials at the Site, sorption onto organic material is expected to play a relatively minor role in the retardation of contaminant transport. Within the shallow aquifer, the decline of the water table into low permeability silts and clay may result in an increased sorption onto mineral faces. This sorption onto aquitard materials may result in low concentrations of PCE in groundwater for an extended period.

COCs identified in the groundwater beneath the PGA-S Superfund Site include TCE and chromium. Currently, two ongoing remedial actions at the PGA-S Superfund Site are actively pumping and treating groundwater from Subunit A and Subunit C using three remediation systems. These systems include:

- The Subunit A system is currently pumping groundwater from 12 extraction wells; the extracted groundwater is treated and subsequently re-injected at 16 injection wells, resulting in no net use of groundwater, with the exception of losses that occur during treatment. The system currently pumps 450 to 550 gallons per minute (gpm) from the shallow (Subunit A) aquifer.

- Two remediation systems are in operation in the Subunit C aquifer, a North System and a South System. The Subunit C – South system currently includes three extraction and three injection wells, operating at a rate of 400 gpm. One of the extraction wells was shutdown in 1999, and one more will probably be shut down in the near future. The system started operation in 1995 and is projected to operate through 2008.

Currently, groundwater transport processes carry PCE westward, where the groundwater enters the PGA-S Superfund Site. A review of the groundwater contours for the PGA-S (Figure 5-1) suggests that PCE contamination is likely captured by the Subunit A groundwater treatment system.

6.3 NATURAL ATTENUATION EVALUATION

Natural attenuation refers to the processes that can reduce the mass, toxicity, mobility, volume and/or contaminant concentration in the groundwater system as a result of biodegradation, dispersion, dilution, sorption, volatilization, chemical or biological stabilization, and/or transformation. Natural attenuation processes affect the fate and transport of chlorinated solvents in all hydrologic systems. When these processes are shown to be capable of attaining site-specific remediation objectives within a reasonable time period when compared to other alternatives, they may be selected as the preferred remedial alternative, or in combination with other remedial technologies.

Natural attenuation mechanisms can be classified as either destructive or nondestructive. Biodegradation is the most important destructive attenuation mechanism. Nondestructive attenuation mechanisms include sorption, dispersion, dilution from recharge, and volatilization.

The decrease in contaminant concentrations observed within Subunit A and the current plume configuration are most likely the result of attenuation mechanisms such as sorption, dilution, volatilization, dispersion, and/or abiotic degradation, as well as a decline in water levels. As a result of the decline in water levels within the shallow saturated system, much of the residual PCE within the shallow plume sorbed on the fine-grained soil and/or volatilized within the vadose zone.

Although chlorinated hydrocarbon concentrations are generally decreasing, preliminary natural attenuation screening for the Site suggests that anaerobic (reductive dechlorination) biodegradation is not the primary cause for the decline observed in PCE concentrations. Based on this information, and in conjunction with the aquifer hydraulics determining the advective movement of the plume,

the fact that the extent of the plume has been defined, and the decreasing concentrations of PCE in groundwater, sufficient information is available to proceed with the feasibility study.

6.4 AREAS OF UNCERTAINTY

The source area(s) for the VOCs detected in groundwater remains in question. Although several PA/SI investigations and an industrial survey have been conducted, specific locations containing sufficient VOC concentrations in soil or soil vapor samples which would define a source area have not been identified. It is likely that implementing further field investigation(s) may fail to conclusively identify a source of PCE contamination.

7.0 LAND AND WATER USE

7.1 LAND USE

Land use in the vicinity of the Site is primarily residential and commercial. In order to evaluate reasonably foreseeable land use within the Western Avenue Plume WQARF Site, documents and maps were obtained from the Cities of Avondale and Goodyear, Arizona. These maps and information outline land use planning and zoning for the Site area, which allows a general discussion of land use as it relates to potential site remediation. Based on this information, in 2003 GeoTrans conducted a complete assessment of the reasonably foreseeable land use. In general, this report focuses on defining existing or future land use which may impede or restrict options for Site remediation or investigation. A copy of the *Current Beneficial Land and Water Use* report is included as Appendix I.

A key land use concern in the vicinity of the Site is the presence of the Lockheed Martin facility, which is located adjacent the Site. This facility may present concerns regarding potential remediation activities, due to its large size and location immediately downgradient of the Site.

7.2 GROUNDWATER USES

GeoTrans obtained and reviewed a copy of the Water Resource Element from the *City of Avondale General Plan, June 17, 2002* and the *Goodyear General Plan Update 2003-2013*. This report outlines the current and projected future sources of water and demands for the cities of Avondale and Goodyear. Using this information, in 2003, GeoTrans conducted a complete assessment of the reasonably foreseeable water use, which is included as part of the *Current Beneficial Land and Water Use* report (Appendix I). In general, this report focuses on defining existing or future water uses which may impede or restrict options for Site remediation or investigation.

7.3 SURFACE WATER USES

There are no permanent sources of surface water located at the Site, other than storm-water runoff. During occasional precipitation events, rainfall drainage is determined by local flood control and storm-water sewers. The nearest natural river channels are the Agua Fria River, located approximately 0.5 miles east of the Site, and the Gila River, which is located south of the Site. Surface water drainage at the Site is likely to the south and east, toward the Gila and Agua Fria rivers.

8.0 SUMMARY AND CONCLUSIONS

The groundwater investigation at the Site has included drilling and installation of five monitoring wells and sampling and monitoring of 11 monitoring wells. Results from these activities have been used to characterize subsurface soils and identify the vertical and horizontal distribution of VOCs in groundwater.

ADEQ has identified PCE as the COC at the Site. In January 2005, PCE was detected in groundwater samples collected from monitoring wells MW-2, MW-4, MW-5, MW-7, GMW-5 and COG-MW3 at concentrations of 2.1 µg/L, 1.9 µg/L, 1.4 µg/L,0.81 µg/L, 0.86 µg/L and 2.1 µg/L, respectively. PCE was detected at a concentration of 5.1 µg/L in a groundwater sample collected from monitoring well MW-1, which exceeds the AWQS of 5 µg/L. All other concentrations of PCE in groundwater samples collected in January 2005 were reported below the AWQS of 5 µg/L.

Since the wells are completed above the base of Subunit-A, the depth of which is estimated at 120 to 150 feet bgs (Bushner, 1992), it is possible that the plume is dropping below the screened interval of the wells; however, it is likely that the plume is attenuating. The bottom of the screened interval for the deepest monitoring wells, MW-1 and MW-2, is at 97 and 95 feet bgs, respectively. The remaining monitoring wells completed in Subunit A are screened to 80 feet bgs. PCE concentrations in the deep wells do not vary significantly from the shallow wells, suggesting that vertical changes in the plume are not significant.

The decrease in contaminant concentrations observed within Subunit A, as well as the current plume definition, are the result of attenuation mechanisms such as sorption, dilution, volatilization, dispersion, and/or abiotic degradation. The current plume definition and general lack of further plume migration in Subunit A has been attained through the decline in water levels, which has resulted in much of the residual PCE being sorbed on the fine-grained soil, and/or being volatilized within the vadose zone.

Based on the fact that the PCE plume is defined and stable, in addition to aquifer hydraulics determining the advective movement of the plume, sufficient information is available to proceed with the feasibility study.

ADEQ, 1995. Preliminary Assessment/Site Inspection Report - Western Dry Cleaners 300 West Western Avenue, Avondale, Arizona, June 30, 1995.

ADEQ, 2001. Preliminary Assessment/Site Inspection Report - Aladdin Cleaners 322 E. Western Ave., Avondale, Arizona, August 15, 2001.

Bushner, Greg L., 1992. Phoenix-Goodyear Airport Groundwater Flow and Contaminant Transport Model, October, 1992.

CH2M-HILL, 1989, Public Comment Draft Remedial Investigation/Feasibility Study, Phoenix Goodyear Airport, June 1989.

GeoTrans, 2001. Groundwater Monitoring and Sampling Results - November 2000, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, May 31, 2001.

GeoTrans, 2001a. Groundwater Monitoring and Sampling Results - January 2001, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, June 1, 2001.

GeoTrans, 2002. Groundwater Monitoring and Sampling Results - April 2001, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, January 25, 2002.

GeoTrans, 2002a. Groundwater Monitoring and Sampling Results, First Yearly Report (November 2000 through July 2001), Western Avenue Plume WQARF Site, Avondale and Goodyear, Arizona, August 27, 2002.

GeoTrans, 2002b. Groundwater Monitoring and Sampling Results - October 2001, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, August 27, 2002.

GeoTrans, 2002c. Groundwater Monitoring and Sampling Results - May 2002, Western Avenue WQARF Site, Avondale and Goodyear, Arizona. August 28, 2002.

GeoTrans, 2003. Groundwater Monitoring and Sampling Results - August 2002, Western Avenue WQARF Site, Avondale and Goodyear, Arizona. March 19, 2003.

GeoTrans, 2003a. Groundwater Monitoring and Sampling Results - October 2002, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, March 21, 2003.

GeoTrans, 2003a. Groundwater Monitoring and Sampling Results - March 2003, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, June 19, 2003.

GeoTrans, 2003a. Industrial Survey Report, Western Avenue WQARF Site, Avondale and Goodyear, Arizona, May 6, 2003.

HSI GeoTrans, 2000. Workplan for the Western Avenue Plume WQARF Registry Site, Avondale and Goodyear, Arizona, August 18.

United States Environmental Protection Agency, 1994. Office of Pollution Prevention and Toxics, Chemical Summary for Perchloroethylene, August. (http://www.epa.gov/chemfact/s_perchl.txt)

United States Environmental Protection Agency, 1995. Region 9, Quick Reference Advisory, Use of Low-Flow Methods for Ground Water Purging and Sampling: An Overview, December.

United States Environmental Protection Agency, 1996. Office of Research and Development, Ground Water Issue, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, April.

United States Environmental Protection Agency, 1998. Office of Research and Development, Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, September.

Table 2-1
Summary of Groundwater Sampling Events
Western Avenue Plume WQARF Site

Year	Sampler	Date(s) Sample Collected	Laboratory	US EPA Method(s)	Wells
1995	ADEQ	6/30, 7/6, 7/7, 7/10	Thermo Analytical	601/602	MW-1, MW-2, MW-3A, MW-3B
1996	ADEQ	3/25, 3/26	McKenzie, ADHS	601/602, 200.7	MW-1, MW-2, GMW-4, GMW-5
	ADEQ	6/25	Del Mar	601/602	MW-1, MW-2, GMW-5
	ADEQ	9/27	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	12/19	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
1997	ADEQ	3/6	Del Mar, ADHS	601/602, 608, 625, 200.7	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	6/19	ADHS	601/602	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	9/27	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	12/15	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
1998	ADEQ	3/16	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	6/17	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
	ADEQ	12/21	Del Mar	601/602	MW-1, MW-2, COG-MW3
1999	ADEQ	3/17	Del Mar	601/602	MW-1, MW-2, COG-MW3, GMW-5
2000	GeoTrans	11/27, 11/28, 11/30	Del Mar	8260B, 200.7, 245.1, 300.0, 350.3, 415.1, SM 2320B	MW-3 through MW-7, COG #1, COG-MW-3
2001	GeoTrans	1/8 - 1/11	Del Mar	8260B, 200.7, 245.1, 300.0, 350.3, 415.1, SM 2320B	MW-1 through MW-7, GMW-5, COG-MW-3, Avondale School Well
	GeoTrans	4/24 - 4/27	Del Mar	8260B, 200.7, 245.1, 300.0, 350.3, 415.1, SM 2320B, RSKSOP-175	MW-1 through MW-7, GMW-4, GMW-5, COG-MW-3, COG#1
	GeoTrans	6/25	Columbia Analytical	601/602 Passive Diffusion	MW-1, MW-2, GMW-5
	GeoTrans	7/25 - 7/27	Del Mar	8260B, 200.7, 245.1, 300.0, 350.3, 415.1, SM 2320B, RSKSOP-175	MW-1 through MW-7, GMW-4, GMW-5, COG-MW-3, COG#1
	GeoTrans	10/29 - 10/31	Del Mar	8260B, 200.7, 245.1	MW-1 through MW-7, GMW-4, GMW-5, COG-MW-3, COG#1
2002	GeoTrans	5/14 - 5/15	Columbia Analytical, MWH	8260B, 7060A, 8011	MW-1, MW-3 thru MW-7, GMW-4, GMW-5, COG-MW-3
	GeoTrans	8/13, 8/30	Columbia Analytical	8260B	MW-1, MW-2, MW-5, GMW-4, GMW-5, COG-MW-3
	GeoTrans	10/30 - 10/31	Columbia Analytical	8260B, 7060A, 8011	MW-1, MW-2, MW-5, GMW-4, GMW-5, COG-MW-3
2003	GeoTrans	3/13 - 3/14	Columbia Analytical	8260B	MW-1, MW-5, GMW-4, COG-MW-3
2004	GeoTrans	1/29, 1/30, 2/3	Columbia Analytical	8260B	MW-1 through MW-7, GMW-5, COG-MW-3
2005	GeoTrans	1/27, 1/28, 2/3	Columbia Analytical	8260B	MW-1 through MW-7, GMW-5, COG-MW-3

Notes:
WQARF: Water Quality Assurance Fund
ADEQ: Arizona Department of Environmental Quality
ADHS: Arizona Department of Health Services

Table 2-2
Well Location and Construction Information
Western Avenue WQARF Site

Well ID	Easting (ft)	Northing (ft)	MP Elevation (ft)	Date Drilled (mo/yr)	Method	ADWR 55-File #	Total Depth of Well	Screened Interval (feet bgs)	Casing Diameter (in)	Pump Type	Pump Depth (ft)	Notes
MW-1	566606.4	886240.7	964.66	Jul-95	Hollow Stem Auger	55-550228	97	37 - 97	4	None	-	Pump not installed
MW-2	568611.8	886246.4	973.17	Jul-95	Hollow Stem Auger	55-550229	95	35 - 95	4	None	-	Pump not installed
MW-3	569419.7	886279.5	971.52	Oct-00	Becker	55-583231	80	45 - 80	4	2-Inch Electric	70	
MW-4	566936.8	887001.3	966.57	Oct-00	Becker	55-583232	80	45 - 80	4	2-Inch Electric	70	
MW-5	566944.4	885807.4	966.83	Oct-00	Becker	55-583229	80	45 - 80	4	2-Inch Electric	70	
MW-6	566969.9	884725.1	968.70	Oct-00	Becker	55-583230	80	45 - 80	4	None	-	Pump not installed
MW-7	565858.6	885089.2	960.85	Oct-00	Becker	55-583228	80	45 - 80	4	2-Inch Electric	64	
COG #1	566083.0	886341.0	NA	NA	NA	55-609571	NA	NA	6	Turbine	NA	Believed to be completed in Subunit C
COG-MW1	565858.0	885921.0	964.03	Sep-91	Hollow Stem Auger	55-532957	75	45-75	4	Bladder	NA	Easting and Northing estimated from maps
COG-MW2	565828.0	885909.0	964.77	Sep-91	Hollow Stem Auger	55-532958	75	45-75	4	Bladder	NA	Easting and Northing estimated from maps
COG-MW3	565718.0	885984.0	964.53	Feb-93	Air Rotary	55-537835	83	43 - 83	4	Bladder	NA	
GMW-4	565842.1	885738.9	965.00	Oct-86	Mud Rotary	55-515525	78.5	57.5 - 78.5	4	Electric Submersible	NA	
GMW-5	565868.3	884444.2	959.45	Oct-86	Mud Rotary	55-515520	73.5	52.5 - 73.5	4	Electric Submersible	NA	

Notes:
NA: Information Not Available
Easting and Northing are State Plane Arizona Central Zone NAD83

Table 2-3
Water Level Data
Western Avenue WQARF Site

Well Name	Date Measured	Top of Screen (feet BGS)	Bottom of Screen (feet BGS)	Reference Elevation (feet-AMSL)	Depth to Water (feet BGS)	Water Level Elevation (feet AMSL)
COG-MW3	2/20/1996	43	83	964.53	53.12	911.41
COG-MW3	3/6/1997	43	83	964.53	57.45	907.08
COG-MW3	6/19/1997	43	83	964.53	59.64	904.89
COG-MW3	9/17/1997	43	83	964.53	62.25	902.28
COG-MW3	12/15/1997	43	83	964.53	61.60	902.93
COG-MW3	11/30/2000	43	83	964.53	63.50	901.03
COG-MW3	1/11/2001	43	83	964.53	58.86	905.67
COG-MW3	2/27/2001	43	83	964.53	57.96	906.57
COG-MW3	4/27/2001	43	83	964.53	57.71	906.82
COG-MW3	7/27/2001	43	83	964.53	58.75	905.78
COG-MW3	11/1/2001	43	83	964.53	60.09	904.44
COG-MW3	7/30/2002	43	83	964.53	62.81	901.72
COG-MW3	10/30/2002	43	83	964.53	64.02	900.51
COG-MW3	2/11/2003	43	83	964.53	63.41	901.12
COG-MW3	3/13/2003	43	83	964.53	62.84	901.69
COG-MW3	1/30/2004	43	83	964.53	64.61	899.92
COG-MW3	2/3/2005	43	83	964.53	66.36	898.17
GMW-4	2/20/1996	57.5	78.5	965.00	53.70	911.30
GMW-4	1/10/2001	57.5	78.5	965.00	59.42	905.58
GMW-4	2/27/2001	57.5	78.5	965.00	58.63	906.37
GMW-4	4/25/2001	57.5	78.5	965.00	58.20	906.80
GMW-4	7/30/2001	57.5	78.5	965.00	59.31	905.69
GMW-4	11/1/2001	57.5	78.5	965.00	60.58	904.42
GMW-4	5/14/2002	57.5	78.5	965.00	61.38	903.62
GMW-4	7/30/2002	57.5	78.5	965.00	63.34	901.66
GMW-4	10/31/2002	57.5	78.5	965.00	64.52	900.48
GMW-4	2/11/2003	57.5	78.5	965.00	63.91	901.09
GMW-4	3/13/2003	57.5	78.5	965.00	63.32	901.68
GMW-5	2/20/1996	52.5	73.5	959.45	48.28	911.17
GMW-5	6/25/1996	52.5	73.5	959.45	80.19	879.26
GMW-5	3/6/1997	52.5	73.5	959.45	51.06	908.39
GMW-5	6/19/1997	52.5	73.5	959.45	53.18	906.27
GMW-5	9/17/1997	52.5	73.5	959.45	55.22	904.23
GMW-5	12/15/1997	52.5	73.5	959.45	54.85	904.60
GMW-5	1/9/2001	52.5	73.5	959.45	53.45	906.00
GMW-5	2/28/2001	52.5	73.5	959.45	53.98	905.47
GMW-5	4/25/2001	52.5	73.5	959.45	52.40	907.05

BGS = below ground surface
AMSL=above mean sea level

Table 2-3
Water Level Data
Western Avenue WQARF Site

Well Name	Date Measured	Top of Screen (feet BGS)	Bottom of Screen (feet BGS)	Reference Elevation (feet-AMSL)	Depth to Water (feet BGS)	Water Level Elevation (feet AMSL)
GMW-5	7/30/2001	52.5	73.5	959.45	53.46	905.99
GMW-5	11/1/2001	52.5	73.5	959.45	54.83	904.62
GMW-5	5/14/2002	52.5	73.5	959.45	55.47	903.98
GMW-5	7/30/2002	52.5	73.5	959.45	57.27	902.18
GMW-5	10/31/2002	52.5	73.5	959.45	58.51	900.94
GMW-5	2/11/2003	52.5	73.5	959.45	58.03	901.42
GMW-5	3/13/2003	52.5	73.5	959.45	57.42	902.03
GMW-5	1/30/2004	52.5	73.5	959.45	58.88	900.57
MW-1	2/20/1996	37	97	964.66	51.06	913.60
MW-1	6/28/1996	37	97	964.66	53.56	911.10
MW-1	3/6/1997	37	97	964.66	54.77	909.89
MW-1	6/19/1997	37	97	964.66	57.00	907.66
MW-1	9/17/1997	37	97	964.66	59.07	905.59
MW-1	12/15/1997	37	97	964.66	58.52	906.14
MW-1	11/27/2000	37	97	964.66	55.52	909.14
MW-1	1/10/2001	37	97	964.66	58.26	906.40
MW-1	2/27/2001	37	97	964.66	55.75	908.91
MW-1	4/27/2001	37	97	964.66	55.66	909.00
MW-1	7/30/2001	37	97	964.66	56.88	907.78
MW-1	11/1/2001	37	97	964.66	58.32	906.34
MW-1	5/14/2002	37	97	964.66	59.22	905.44
MW-1	7/30/2002	37	97	964.66	61.18	903.48
MW-1	10/30/2002	37	97	964.66	62.33	902.33
MW-1	2/11/2003	37	97	964.66	61.80	902.86
MW-1	3/13/2003	37	97	964.66	61.18	903.48
MW-1	1/29/2004	37	97	964.66	62.70	901.96
MW-1	1/28/2005	37	97	964.66	64.72	899.94
MW-2	2/20/1996	35	95	973.17	52.06	921.11
MW-2	6/28/1996	35	95	973.17	55.37	917.80
MW-2	3/6/1997	35	95	973.17	57.94	915.23
MW-2	6/19/1997	35	95	973.17	60.58	912.59
MW-2	9/17/1997	35	95	973.17	62.60	910.57
MW-2	12/15/1997	35	95	973.17	62.62	910.55
MW-2	1/10/2001	35	95	973.17	57.74	915.43
MW-2	2/27/2001	35	95	973.17	57.69	915.48
MW-2	4/27/2001	35	95	973.17	58.00	915.17
MW-2	7/30/2001	35	95	973.17	60.56	912.61

BGS = below ground surface
AMSL=above mean sea level

Table 2-3
Water Level Data
Western Avenue WQARF Site

Well Name	Date Measured	Top of Screen (feet BGS)	Bottom of Screen (feet BGS)	Reference Elevation (feet-AMSL)	Depth to Water (feet BGS)	Water Level Elevation (feet AMSL)
MW-2	11/1/2001	35	95	973.17	62.53	910.64
MW-2	5/14/2002	35	95	973.17	64.41	908.76
MW-2	7/30/2002	35	95	973.17	66.24	906.93
MW-2	10/30/2002	35	95	973.17	67.46	905.71
MW-2	2/11/2003	35	95	973.17	67.61	905.56
MW-2	3/13/2003	35	95	973.17	66.31	906.86
MW-2	1/29/2004	35	95	973.17	68.05	905.12
MW-2	1/28/2005	35	95	973.17	69.80	903.37
MW-3	11/28/2000	45	80	971.52	63.51	908.01
MW-3	1/9/2001	45	80	971.52	51.39	920.13
MW-3	2/27/2001	45	80	971.52	51.41	920.11
MW-3	4/27/2001	45	80	971.52	52.30	919.22
MW-3	7/30/2001	45	80	971.52	58.83	912.69
MW-3	11/1/2001	45	80	971.52	58.34	913.18
MW-3	5/14/2002	45	80	971.52	61.18	910.34
MW-3	7/30/2002	45	80	971.52	62.91	908.61
MW-3	10/30/2002	45	80	971.52	64.18	907.34
MW-3	2/11/2003	45	80	971.52	64.61	906.91
MW-3	3/13/2003	45	80	971.52	63.03	908.49
MW-3	1/29/2004	45	80	971.52	65.01	906.51
MW-3	1/28/2005	45	80	971.52	66.58	904.94
MW-4	11/28/2000	45	80	966.57	63.55	903.02
MW-4	1/9/2001	45	80	966.57	57.71	908.86
MW-4	2/27/2001	45	80	966.57	57.73	908.84
MW-4	4/27/2001	45	80	966.57	57.67	908.90
MW-4	7/30/2001	45	80	966.57	59.16	907.41
MW-4	11/1/2001	45	80	966.57	60.64	905.93
MW-4	5/14/2002	45	80	966.57	61.65	904.92
MW-4	7/30/2002	45	80	966.57	63.80	902.77
MW-4	10/30/2002	45	80	966.57	64.97	901.60
MW-4	2/11/2003	45	80	966.57	64.22	902.35
MW-4	3/13/2003	45	80	966.57	63.57	903.00
MW-4	1/29/2004	45	80	966.57	64.95	901.62
MW-4	1/27/2005	45	80	966.57	67.05	899.52
MW-5	11/28/2000	45	80	966.83	59.92	906.91
MW-5	1/8/2001	45	80	966.83	58.29	908.54
MW-5	2/27/2001	45	80	966.83	57.32	909.51

BGS = below ground surface
AMSL=above mean sea level

Table 2-3
Water Level Data
Western Avenue WQARF Site

Well Name	Date Measured	Top of Screen (feet BGS)	Bottom of Screen (feet BGS)	Reference Elevation (feet-AMSL)	Depth to Water (feet BGS)	Water Level Elevation (feet AMSL)
MW-5	4/27/2001	45	80	966.83	57.17	909.66
MW-5	7/30/2001	45	80	966.83	58.37	908.46
MW-5	11/1/2001	45	80	966.83	59.88	906.95
MW-5	5/14/2002	45	80	966.83	60.92	905.91
MW-5	7/30/2002	45	80	966.83	62.65	904.18
MW-5	10/30/2002	45	80	966.83	63.98	902.85
MW-5	2/11/2003	45	80	966.83	63.56	903.27
MW-5	3/13/2003	45	80	966.83	62.87	903.96
MW-5	1/29/2004	45	80	966.83	64.37	902.46
MW-5	1/27/2005	45	80	966.83	66.31	900.52
MW-6	11/28/2000	45	80	968.70	61.30	907.40
MW-6	1/8/2001	45	80	968.70	59.87	908.83
MW-6	2/27/2001	45	80	968.70	58.81	909.89
MW-6	4/27/2001	45	80	968.70	58.53	910.17
MW-6	7/30/2001	45	80	968.70	59.62	909.08
MW-6	11/1/2001	45	80	968.70	61.11	907.59
MW-6	5/14/2002	45	80	968.70	61.97	906.73
MW-6	7/30/2002	45	80	968.70	63.68	905.02
MW-6	10/30/2002	45	80	968.70	65.00	903.70
MW-6	2/11/2003	45	80	968.70	64.82	903.88
MW-6	3/13/2003	45	80	968.70	64.25	904.45
MW-6	1/29/2004	45	80	968.70	65.52	903.18
MW-6	.1/27/05	45	80	968.70	67.35	901.35
MW-7	11/27/2000	45	80	960.85	55.52	905.33
MW-7	1/8/2001	45	80	960.85	54.19	906.66
MW-7	2/27/2001	45	80	960.85	53.17	907.68
MW-7	4/27/2001	45	80	960.85	52.88	907.97
MW-7	7/30/2001	45	80	960.85	53.75	907.10
MW-7	11/1/2001	45	80	960.85	55.15	905.70
MW-7	5/14/2002	45	80	960.85	55.83	905.02
MW-7	7/30/2002	45	80	960.85	57.74	903.11
MW-7	10/30/2002	45	80	960.85	59.00	901.85
MW-7	2/11/2003	45	80	960.85	58.41	902.44
MW-7	3/13/2003	45	80	960.85	57.82	903.03
MW-7	1/30/2004	45	80	960.85	59.41	901.44
MW-7	1/28/2005	45	80	960.85	61.25	899.60

BGS = below ground surface
AMSL=above mean sea level

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG #1 COG #1 FO 11/30/2000 11:45:00	COG #1 COG A FD 11/30/2000 15:00:00	COG #1 COG #1 FO 01/11/2001 09:30:00	COG #1 COG-1 FO 04/27/2001 08:16:00	COG #1 COG#1 FO 07/27/2001 10:26:00	COG #1 COG-1 FO 10/30/2001 13:24:00	COG-MW2 GDTR-MW-2-5-9 FO 05/09/1996 15:55:00	COG-MW3 COG MW3 FO 09/27/1996 11:13:00	COG-MW3 COG MW3 FO 12/19/1996 11:37:00	COG-MW3 COG MW3 FO 03/06/1997 11:40:00	COG-MW3 COG MW3 FO 12/15/1997 12:10:00	COG-MW3 COG MW3 FO 04/16/1998 13:15:00	COG-MW3 COG MW3 FO 06/17/1998 13:30:00	COG-MW3 COG MW3 FO 12/21/1998 12:20:00	COG-MW3 COG MW3 FO 04/17/1999 09:35:00	COG-MW3 COG-MW3 FO 11/30/2000 14:25:00	COG-MW3 COG MW3 FO 01/11/2001 11:21:00	COG-MW3 COG Pump #1 FD 01/11/2001 08:00:00	COG-MW3 COG-MW3 FO 04/26/2001 15:04:00	COG-MW3 COG-MW3 FO 07/27/2001 11:46:00	COG-MW3 COG-MW3 FO 10/31/2001 08:36:00	COG-MW3 ADEQG-MW3 FD 10/31/2001 07:36:00	COG-MW3 COG-MW3 FO 05/15/2002 10:45:00	COG-MW3 COG-MW-3 FO 08/13/2002 13:40:00	COG-MW3 COG-MW3 FO 10/30/2002 13:37:00
1,1,1,2-Tetrachloroethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	NE	<10	<10	<10	<10	<10	<10	<50									<10	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	330									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	330									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	0.2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	9	<5.0	<2.0	<2.0	<2.0
1,2-Dibromoethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<1	<5	<5	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,2-Dichloropropane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	120									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<1	<5	<5	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
1,3-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	75	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<1	<5	<5	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
2,2-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2-Butanone	NE	<10	<10	<10	<10	<10	<10										<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0
2-Chloroethyl Vinyl Ether	NE								<2.5	<13	<13															
2-Chlorotoluene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
2-Hexanone	NE	<10	<10	<10	<10	<10	<10										<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0
4-Chlorotoluene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
4-Methyl-2-Pentanone	NE	<10	<10	<10	<10	<10	<10										<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0
Acetone	NE	<20	<20	<20	<20	<20	<20										<20	<20	<20	<20	<20	<20	<20	<10	<10	<10
Benzene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	110	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Bromobenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Bromochloromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Bromodichloromethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Bromoform	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Bromomethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<200	<1	<5	<5	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Carbon disulfide	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0										<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0
Carbon tetrachloride	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Chlorobenzene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Chloroethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<200	<2.5	<13	<13	<5	<5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Chloroform	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0
Chloromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<1	<5	<5	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	70	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Dibromochloromethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Dibromomethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Dichlorodifluoromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0
Ethylbenzene	700	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	590	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Freon 113	NE																							<1.0	<1.0	<1.0
Hexachloro-1,3-butadiene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Isopropylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
m,p-Xylenes	NE							1100																<1.0	<1.0	<1.0
Methyl iodide	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0										<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl tert-butyl ether	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0										<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<200	<5	<25	<25	<20	<20	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Naphthalene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	110									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0
n-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
n-Propylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
o-Xylene	NE							710																<0.5	<0.5	<0.5
p-Isopropyltoluene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50									<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
sec-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Styrene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0										<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
tert-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50									<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5
Tetrachloroethene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**50**	**24**	**82**	**70**	**31**	**33**	**29**	**19**	**29**	**12**	**20**	**20**	**22**	**17**	**13**	**11**	**14**	**11**	**11**
Toluene	1000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1400	0.7	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Total Xylenes	10000	<10	<10	<10	<10	<10	<10		<1.5	<7.5	<7.5	<3	<3	<1.5	<1.5	<1.5	<10	<10	<10	<10	<10	<10	<10			
trans-1,2-Dichloroethene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0
Trichloroethene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<0.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5
Trichlorofluoromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<100	<0.5	<2.5	<2.5	<1	<1	<0.5	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0
Vinyl acetate	NE	<5.0	<5.0	<5.0	<25	<25	<25										<5.0	<5.0	<5.0	<25	<25	<25	<25	<3.0	<3.0	<3.0
Vinyl chloride	2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<1	<5	<5	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG-MW3 ADEQG-MW3 FD 10/30/2002 14:47:00	COG-MW3 COG-MW3 FO 03/14/2003 09:36:00	COG-MW3 ADEQG-MW3 FD 03/14/2003 10:36:00	COG-MW3 COG-MW3 FO 02/03/2004 09:48:00	COG-MW3 ADEQ-MW3 FD 02/03/2004 09:48:00	COG-MW3 COG-MW3 FO 02/03/2005 13:27:00	COG-MW3 ADEQG-MW3 FD 02/03/2005 14:27:00	GMW-4 GMW-4-1 FO 03/25/1996 09:10:00	GMW-4 GMW-4 FO 04/25/2001 12:41:00	GMW-4 ADEQG-MW-4 FD 04/25/2001 14:01:00	GMW-4 GMW-4 FO 07/26/2001 13:40:00	GMW-4 ADEQG-MW4 FD 07/26/2001 14:40:00	GMW-4 GMW-4 FO 10/30/2001 10:12:00	GMW-4 ADEQG-MW4 FD 10/30/2001 08:12:00	GMW-4 GMW-4 FO 05/14/2002 15:21:00	GMW-4 ADEQG-MW4 FD 05/14/2002 16:21:00	GMW-4 GMW-4 FO 08/30/2002 08:47:00	GMW-4 ADEQG-MW4 FD 08/30/2002 09:37:00	GMW-4 ADEQG-MW4 FD 10/31/2002 08:57:00	GMW-4 GMW-4 FO 10/31/2002 07:57:00	GMW-4 GMW-4 FO 03/13/2003 13:09:00	GMW-4 ADEQG-MW4 FD 03/13/2003 14:09:00	GMW-5 GMW-5-1 FO 03/25/1996 09:45:00	GMW-5 GMW-5 FO 06/25/1996 11:34:00	GMW-5 GMW-5 FO 09/27/1996 11:58:00
1,1,1,2-Tetrachloroethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,1,1-Trichloroethane	200	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
1,1-Dichloroethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
1,1-Dichloropropene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,2,3-Trichlorobenzene	NE	<0.5	<0.50	<0.50	<1.0	<1.0	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,2,3-Trichloropropane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5		<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
1,2,4-Trichlorobenzene	70	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,2,4-Trimethylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,2-Dibromo-3-chloropropane	0.2	<2.0	<5.0	<5.0	<5.0	<5.0	<2	<2		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0			
1,2-Dibromoethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,2-Dichlorobenzene	600	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<1	<1
1,2-Dichloroethane	5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
1,2-Dichloropropane	5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
1,3-Dichlorobenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<1	<1
1,3-Dichloropropane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
1,4-Dichlorobenzene	75	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<1	<1
2,2-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
2-Butanone	NE	<5.0	<8.0	<8.0	<8.0	<8.0	<10	<10		<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<8.0	<8.0			
2-Chloroethyl Vinyl Ether	NE								<1															<1	<2.5	<2.5
2-Chlorotoluene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
2-Hexanone	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<10		<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0			
4-Chlorotoluene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
4-Methyl-2-Pentanone	NE	<5.0	<8.0	<8.0	<8.0	<8.0	<10	<10		<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<8.0	<8.0			
Acetone	NE	<10	<10	<10	<20	<20	<10	<10		<20	<20	<20	<20	<20	<20	<10	<10	<10	<10	<10	<10	<10	<10			
Benzene	5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Bromobenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Bromochloromethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Bromodichloromethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Bromoform	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Bromomethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1	<1
Carbon disulfide	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Carbon tetrachloride	5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Chlorobenzene	100	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Chloroethane	NE	<1.0	<1.0	<1.0	<2.0	<2.0	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<2.5	<2.5
Chloroform	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
Chloromethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<1	<1
cis-1,2-Dichloroethene	70	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Dibromochloromethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Dibromomethane	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Dichlorodifluoromethane	NE	<3.0	<3.0	<3.0	<3.0	<3.0	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<0.5		
Ethylbenzene	700	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Freon 113	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2								<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Hexachloro-1,3-butadiene	NE	<0.5	<0.50	<0.50	<1.0	<1.0	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Isopropylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
m,p-Xylenes	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1							<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1		
Methyl iodide	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<10		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Methyl tert-butyl ether	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Methylene Chloride	5	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<5	<5
Naphthalene	NE	<3.0	<3.0	<3.0	<3.0	<3.0	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0			
n-Butylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
n-Propylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
o-Xylene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5		
p-Isopropyltoluene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
sec-Butylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Styrene	100	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
tert-Butylbenzene	NE	<0.5	<0.50	<0.50	<0.50	<0.50	<1	<1		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50			
Tetrachloroethene	5	**12**	**7.5**	**7.2**	4.4	**5**	2.1	2.1	**34**	**13**	**13**	**11**	**10**	**9.7**	**9.9**	**8.9**	**9.2**	**7.1**	**7.2**	**6.4**	**6.6**	4.1	3.9	**8.2**	**12**	**9.7**
Toluene	1000	<0.5	0.86	0.55	<0.50	<0.50	<0.5	<0.5	0.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Total Xylenes	10000									<10	<10	<10	<10	<10	<10										<1.5	<1.5
trans-1,2-Dichloroethene	100	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
Trichloroethene	5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<0.5
Trichlorofluoromethane	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<0.5
Vinyl acetate	NE	<3.0	<3.0	<3.0	<3.0	<3.0	<10	<10		<25	<25	<25	<25	<25	<25	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0			
Vinyl chloride	2	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	GMW-5 GMW-5 FO 12/19/1996 12:56:00	GMW-5 GMW-5 FO 03/06/1997 09:54:00	GMW-5 GMW-5 FO 09/17/1997 09:32:00	GMW-5 GMW-5 FO 12/15/1997 10:28:00	GMW-5 GMW-5 FO 04/16/1998 10:36:00	GMW-5 GMW-5 FO 06/17/1998 11:58:00	GMW-5 GMW-5 FO 04/17/1999 13:05:00	GMW-5 GMW-5 FO 01/09/2001 15:28:00	GMW-5 GMW-5 FO 04/25/2001 15:47:00	GMW-5 GMW-5 FO 07/26/2001 17:24:00	GMW-5 GMW-5 FO 10/30/2001 11:05:00	GMW-5 GMW-5 FO 05/14/2002 14:04:00	GMW-5 GMW-5 FO 08/13/2002 12:05:00	GMW-5 GMW-5 FO 10/31/2002 09:03:00	GMW-5 GMW-5 FO 02/03/2004 08:33:00	GMW-5 GMW-5 FO 01/27/2005 11:15:00	MW-1 MW-1 FO 06/30/1995	MW-1 COA MW1-1 FO 03/25/1996 13:15:00	MW-1 COA MW1-2 FD 03/25/1996 13:15:00	MW-1 COA MW1 FO 06/25/1996 09:35:00	MW-1 COA MW10 FD 06/25/1996 09:40:00	MW-1 COA MW1 FO 09/27/1996 13:28:00	MW-1 COA MW10 FD 09/27/1996 13:38:00	MW-1 COA MW1 FO 12/19/1996 09:49:00	MW-1 COA MW1 FO 03/06/1997 12:50:00
1,1,1,2-Tetrachloroethane	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,1,1-Trichloroethane	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,1,2,2-Tetrachloroethane	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,1,2-Trichloroethane	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,1-Dichloroethane	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,1-Dichloroethene	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,1-Dichloropropene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,2,3-Trichlorobenzene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<1										
1,2,3-Trichloropropane	NE								<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1										
1,2,4-Trichlorobenzene	70								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,2,4-Trimethylbenzene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,2-Dibromo-3-chloropropane	0.2								<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<5.0	<5										
1,2-Dibromoethane	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,2-Dichlorobenzene	600	<1	<1	<1	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<5	<5	<1	<1	<5	<5
1,2-Dichloroethane	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,2-Dichloropropane	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
1,3,5-Trimethylbenzene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
1,3-Dichlorobenzene	NE	<1	<1	<1	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<5	<5	<1	<1	<5	<5
1,3-Dichloropropane	NE								<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1										
1,4-Dichlorobenzene	75	<1	<1	<1	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<5	<5	<1	<1	<5	<5
2,2-Dichloropropane	NE								<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2										
2-Butanone	NE								<10	<10	<10	<10	<5.0	<5.0	<5.0	<8.0	<8										
2-Chloroethyl Vinyl Ether	NE	<2.5	<2.5	<2.5															<1	<1	<13	<13	<2.5	<2.5	<13	<13
2-Chlorotoluene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
2-Hexanone	NE								<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5										
4-Chlorotoluene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
4-Methyl-2-Pentanone	NE								<10	<10	<10	<10	<5.0	<5.0	<5.0	<8.0	<8										
Acetone	NE								<20	<20	<20	<20	<10	<10	<10	<20	<20										
Benzene	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Bromobenzene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
Bromochloromethane	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
Bromodichloromethane	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Bromoform	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Bromomethane	NE	<1	<1	<1	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<5	<5	<1	<1	<5	<5
Carbon disulfide	NE								<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2										
Carbon tetrachloride	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<2	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Chlorobenzene	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Chloroethane	NE	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<2.0	<2	<1.0	<0.5	<0.5	<13	<13	<2.5	<2.5	<13	<13
Chloroform	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Chloromethane	NE	<1	<1	<1	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2	<1.0	<0.5	<0.5	<5	<5	<1	<1	<5	<5
cis-1,2-Dichloroethene	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
cis-1,3-Dichloropropene	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Dibromochloromethane	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Dibromomethane	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
Dichlorodifluoromethane	NE								<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3		<0.5	<0.5							
Ethylbenzene	700	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Freon 113	NE												<1.0	<1.0	<1.0	<1.0	<1										
Hexachloro-1,3-butadiene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<1.0	<1										
Isopropylbenzene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
m,p-Xylenes	NE												<1.0	<1.0	<1.0	<1.0	<1	<1.0	<1	<1							
Methyl iodide	NE								<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4										
Methyl tert-butyl ether	NE								<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1										
Methylene Chloride	5	<5	<5	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2	<5.0	<2	<2	<25	<25	<5	<5	<25	<25
Naphthalene	NE								<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3										
n-Butylbenzene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
n-Propylbenzene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
o-Xylene	NE												<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5							
p-Isopropyltoluene	NE								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
sec-Butylbenzene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
Styrene	100								<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5										
tert-Butylbenzene	NE								<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.5										
Tetrachloroethene	5	**9.5**	**8.9**	**7**	**5.6**	4.8	4.8	4.8	2.6	3.3	<2.0	2.2	2.4	2.5	2.5	2.4	0.86	<1.0	**87**	**75**	**78**	**80**	**66**	**64**	**74**	**72**
Toluene	1000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	0.6	0.6	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Total Xylenes	10000	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<10	<10	<10	<10						<1.0			<7.5	<7.5	<1.5	<1.5	<7.5	<7.5
trans-1,2-Dichloroethene	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
trans-1,3-Dichloropropene	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Trichloroethene	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.5	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Trichlorofluoromethane	NE	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<0.5	<0.5	<2.5	<2.5	<0.5	<0.5	<2.5	<2.5
Vinyl acetate	NE								<5.0	<25	<25	<25	<3.0	<3.0	<3.0	<3.0	<4										
Vinyl chloride	2	<1	<1	<1	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<1	<1	<5	<5	<1	<1	<5	<5

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	MW-1 COA MW1A FD 03/06/1997 13:20:00	MW-1 COA MW1 FO 09/17/1997 12:38:00	MW-1 COA MW1A FD 09/17/1997 12:00:00	MW-1 COA MW1 FO 12/15/1997 11:50:00	MW-1 COA MW1A FD 12/15/1997 12:10:00	MW-1 COA MW1 FO 04/16/1998 11:33:00	MW-1 COA MW1A FD 04/16/1998 12:04:00	MW-1 COA MW1 FO 06/17/1998 14:47:00	MW-1 COA MW1A FD 06/17/1998 15:12:00	MW-1 COA MW1 FO 12/21/1998 13:50:00	MW-1 COA MW1 FO 04/17/1999 08:10:00	MW-1 COA MW1A FD 04/17/1999 08:15:00	MW-1 COA MW1 FO 01/10/2001 13:30:00	MW-1 COA-MW1 FO 04/26/2001 09:36:00	MW-1 COA-MW1-3WV FD 04/26/2001 10:11:00	MW-1 COA-MW1 FO 07/26/2001 18:58:00	MW-1 COA-MW1 FO 10/29/2001 17:33:00	MW-1 MW-1 FO 05/15/2002 13:52:00	MW-1 MW-1 FO 08/13/2002 15:05:00	MW-1 MW-1 FO 10/30/2002 11:06:00	MW-1 MW-1 FO 03/13/2003 09:51:00	MW-1 MW-1 FO 01/29/2004 12:17:00	MW-1 MW-1 FO 01/28/2005 11:39:00	MW-1 ADEQ MW-1 FD 01/28/2005 12:00:00	MW-2 6-29-WS-1 FO 06/29/1995 14:30:00
1,1,1,2-Tetrachloroethane	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,1,1-Trichloroethane	200	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,1,2,2-Tetrachloroethane	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
1,1,2-Trichloroethane	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
1,1-Dichloroethane	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,1-Dichloroethene	7	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
1,1-Dichloropropene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,2,3-Trichlorobenzene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<1.0	<1	<1	
1,2,3-Trichloropropane	NE													<10	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	
1,2,4-Trichlorobenzene	70													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,2,4-Trimethylbenzene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,2-Dibromo-3-chloropropane	0.2													<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<5.0	<5.0	<5	<5	
1,2-Dibromoethane	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,2-Dichlorobenzene	600	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,2-Dichloroethane	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,2-Dichloropropane	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,3,5-Trimethylbenzene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
1,3-Dichlorobenzene	NE	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
1,3-Dichloropropane	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	
1,4-Dichlorobenzene	75	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
2,2-Dichloropropane	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2	
2-Butanone	NE													<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<8.0	<8.0	<8	<8	
2-Chloroethyl Vinyl Ether	NE	<13	<6.3	<6.3																						
2-Chlorotoluene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
2-Hexanone	NE													<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<5	
4-Chlorotoluene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
4-Methyl-2-Pentanone	NE													<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<8.0	<8.0	<8	<8	
Acetone	NE													<20	<20	<20	<20	<20	<10	<10	<10	<10	<20	<20	<20	
Benzene	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	2.6
Bromobenzene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
Bromochloromethane	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
Bromodichloromethane	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Bromoform	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	0.5	<0.50	<0.5	<0.5	<1.0
Bromomethane	NE	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
Carbon disulfide	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2	
Carbon tetrachloride	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<2	<2	<1.0
Chlorobenzene	100	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Chloroethane	NE	<13	<6.3	<6.3	<5	<5	<5	<5	<5	<5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2	<2	<1.0
Chloroform	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	14
Chloromethane	NE	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2	<1.0
cis-1,2-Dichloroethene	70	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
cis-1,3-Dichloropropene	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Dibromochloromethane	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	5.1
Dibromomethane	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
Dichlorodifluoromethane	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3	<3	
Ethylbenzene	700	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Freon 113	NE																		<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	
Hexachloro-1,3-butadiene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<1.0	<1	<1	
Isopropylbenzene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
m,p-Xylenes	NE																		<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	
Methyl iodide	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4	<4	
Methyl tert-butyl ether	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	
Methylene Chloride	5	<25	<25	<25	<20	<20	<20	<20	<20	<20	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<2	<5.0
Naphthalene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3	<3	
n-Butylbenzene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
n-Propylbenzene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
o-Xylene	NE																		<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
p-Isopropyltoluene	NE													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
sec-Butylbenzene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
Styrene	100													<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
tert-Butylbenzene	NE													<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	
Tetrachloroethene	5	**64**	**41**	**40**	**40**	**38**	**43**	**41**	**36**	**36**	**16**	**24**	**24**	**8.6**	**15**	**18**	**11**	**6.7**	**12**	**13**	**7.5**	**5.5**	4.9	**5.1**	3.9	3.6
Toluene	1000	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Total Xylenes	10000	<7.5	<3.8	<3.8	<3	<3	<3	<3	<3	<3	<1.5	<1.5	<1.5	<10	<10	<10	<10	<10								<1.0
trans-1,2-Dichloroethene	100	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
trans-1,3-Dichloropropene	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
Trichloroethene	5	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<0.5	<1.0
Trichlorofluoromethane	NE	<2.5	<1.3	<1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0
Vinyl acetate	NE													<5.0	<25	<25	<25	<25	<3.0	<3.0	<3.0	<3.0	<3.0	<4	<4	
Vinyl chloride	2	<5	<2.5	<2.5	<2	<2	<2	<2	<2	<2	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1.0

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	MW-2 MW-2 FO 07/10/1995 11:35:00	MW-2 COA MW2-1 FO 03/25/1996 16:55:00	MW-2 COA MW2 FO 06/25/1996 10:37:00	MW-2 COA MW2 FO 09/27/1996 12:35:00	MW-2 COA MW2 FO 12/19/1996 13:39:00	MW-2 COA MW2A FD 12/19/1996 14:00:00	MW-2 COA MW2 FO 03/06/1997 08:30:00	MW-2 COA MW2 FO 09/17/1997 13:12:00	MW-2 COA MW2 FO 12/15/1997 11:10:00	MW-2 COA MW2 FO 04/16/1998 10:52:00	MW-2 COA MW2 FO 06/17/1998 14:11:00	MW-2 COA MW2 FO 12/21/1998 13:15:00	MW-2 COA MW2 FO 04/17/1999 12:22:00	MW-2 COA MW2 FO 01/10/2001 10:15:00	MW-2 COA Pump FD 01/10/2001 10:15:00	MW-2 COA-MW2 FO 04/27/2001 10:39:00	MW-2 ADEQ-MW2-3WV FD 04/27/2001 10:59:00	MW-2 COA-MW2-3WV FD 04/27/2001 10:42:00	MW-2 COA-MW2 FO 07/27/2001 13:38:00	MW-2 ADEQA-MW2 FD 07/27/2001 14:38:00	MW-2 COA-MW2 FO 10/30/2001 09:00:00	MW-2 MW-2 FO 08/13/2002 10:05:00	MW-2 MW-2 FO 10/30/2002 14:51:00	MW-2 MW-2 FO 01/29/2004 14:05:00	MW-2 MW-2 FO 01/28/2005 13:00:00
1,1,1,2-Tetrachloroethane	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
1,1,1-Trichloroethane	200	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,1,2,2-Tetrachloroethane	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1
1,1,2-Trichloroethane	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1
1,1-Dichloroethane	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,1-Dichloroethene	7	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1
1,1-Dichloropropene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,2,3-Trichlorobenzene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<1.0	<1
1,2,3-Trichloropropane	NE														<10	<10	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1
1,2,4-Trichlorobenzene	70														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
1,2,4-Trimethylbenzene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,2-Dibromo-3-chloropropane	0.2														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<5.0	<5
1,2-Dibromoethane	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,2-Dichlorobenzene	600	<1.0	<0.5	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,2-Dichloroethane	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,2-Dichloropropane	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,3,5-Trimethylbenzene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,3-Dichlorobenzene	NE	<1.0	<0.5	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
1,3-Dichloropropane	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1
1,4-Dichlorobenzene	75	<1.0	<0.5	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
2,2-Dichloropropane	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2
2-Butanone	NE														<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<8.0	<8
2-Chloroethyl Vinyl Ether	NE		<1	<13	<6.3	<13	<13	<13	<5																	
2-Chlorotoluene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
2-Hexanone	NE														<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5
4-Chlorotoluene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
4-Methyl-2-Pentanone	NE														<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<8.0	<8
Acetone	NE														<20	<20	<20	<20	<20	<20	<20	<20	<10	<10	<20	<20
Benzene	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Bromobenzene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
Bromochloromethane	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
Bromodichloromethane	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Bromoform	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
Bromomethane	NE	<1.0	<0.5	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1
Carbon disulfide	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2
Carbon tetrachloride	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<2
Chlorobenzene	100	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Chloroethane	NE	<1.0	<0.5	<13	<6.3	<13	<13	<13	<5	<5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<2.0	<2
Chloroform	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1
Chloromethane	NE	<1.0	<0.5	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2
cis-1,2-Dichloroethene	70	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
cis-1,3-Dichloropropene	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Dibromochloromethane	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Dibromomethane	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Dichlorodifluoromethane	NE		<0.5												<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3
Ethylbenzene	700	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Freon 113	NE																						<1.0	<1.0	<1.0	<1
Hexachloro-1,3-butadiene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<1.0	<1
Isopropylbenzene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
m,p-Xylenes	NE		<1																				<1.0	<1.0	<1.0	<1
Methyl iodide	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4
Methyl tert-butyl ether	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1
Methylene Chloride	5	<5.0	<2	<25	<13	<25	<25	<25	<20	<20	<10	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<2
Naphthalene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3
n-Butylbenzene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
n-Propylbenzene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
o-Xylene	NE		<0.5																				<0.5	<0.5	<0.50	<0.5
p-Isopropyltoluene	NE														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
sec-Butylbenzene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
Styrene	100														<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
tert-Butylbenzene	NE														<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.50	<0.5
Tetrachloroethene	5	**51**	**73**	**76**	**69**	**72**	**60**	**57**	**31**	**25**	**19**	**16**	**13**	**16**	2.2	2.2	**5**	**7.3**	**7.5**	3.2	4.3	4.5	3.9	2.9	3.4	2.1
Toluene	1000	<1.0	0.6	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Total Xylenes	10000	<1.0		<7.5	<3.8	<7.5	<7.5	<7.5	<3	<3	<1.5	<1.5	<1.5	<1.5	<10	<10	<10	<10	<10	<10	<10	<10				
trans-1,2-Dichloroethene	100	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
trans-1,3-Dichloropropene	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1
Trichloroethene	5	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.50	<0.5
Trichlorofluoromethane	NE	<1.0	<0.5	<2.5	<1.3	<2.5	<2.5	<2.5	<1	<1	<0.5	<0.5	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1
Vinyl acetate	NE														<5.0	<5.0	<25	<25	<25	<25	<25	<25	<3.0	<3.0	<3.0	<4
Vinyl chloride	2	<1.0	<1	<5	<2.5	<5	<5	<5	<2	<2	<1	<1	<1	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	MW-3 MW3 FO 11/28/2000 15:01:00	MW-3 COA MW3 FO 01/09/2001 12:13:00	MW-3 COA-MW3 FO 04/24/2001 12:21:00	MW-3 COA-MW3-3WV FD 04/24/2001 12:47:00	MW-3 COA-MW3 FO 07/25/2001 13:10:00	MW-3 COA-MW3 FO 10/29/2001 13:22:00	MW-3 MW-3 FO 05/15/2002 15:25:00	MW-3 MW-3 FO 01/29/2004 15:35:00	MW-3 MW-3 FO 01/28/2005 09:25:00	MW-4 MW4 FO 11/28/2000 16:45:00	MW-4 COA MW4 FO 01/09/2001 13:58:00	MW-4 COA-MW4 FO 04/24/2001 16:17:00	MW-4 COA-MW4-3WV FD 04/24/2001 16:28:00	MW-4 ADEQA-MW4-3WV FD 04/24/2001 16:48:00	MW-4 COA-MW4 FO 07/25/2001 15:28:00	MW-4 COA-MW4 FO 10/29/2001 14:19:00	MW-4 ADEQA-MW4 FD 10/29/2001 09:19:00	MW-4 MW-4 FO 05/15/2002 14:35:00	MW-4 MW-4 FO 01/29/2004 16:12:00	MW-4 MW-4 FO 01/27/2005 15:38:00	MW-5 MW5 FO 11/28/2000 11:30:00	MW-5 COA MW5 FO 01/08/2001 13:48:00	MW-5 COA-MW5 FO 04/26/2001 16:42:00	MW-5 ADEQA-MW5-3WV FD 04/26/2001 16:42:00	MW-5 COA-MW5-3WV FD 04/26/2001 16:52:00
1,1,1,2-Tetrachloroethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,2,2-Tetrachloroethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,2-Trichloroethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,2,3-Trichlorobenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,3-Trichloropropane	NE	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1	<10	<10	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1	<10	<10	<10	<10	<10
1,2,4-Trichlorobenzene	70	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dibromo-3-chloropropane	0.2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dichlorobenzene	600	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dichloroethane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dichloropropane	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,3,5-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,3-Dichlorobenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
1,3-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0
1,4-Dichlorobenzene	75	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
2,2-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0
2-Butanone	NE	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<10	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether	NE																									
2-Chlorotoluene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	NE	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5	<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5	<10	<10	<10	<10	<10
4-Chlorotoluene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	NE	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<10	<10	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<10	<10	<10	<10	<10
Acetone	NE	<20	<20	<20	<20	<20	<20	<10	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<10	<20	<20	<20	<20	<20	<20	<20
Benzene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Bromobenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromodichloromethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon disulfide	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<2	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0
Chloromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	70	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Dibromomethane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Dichlorodifluoromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	700	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Freon 113	NE							<1.0	<1.0	<1									<1.0	<1.0	<1					
Hexachloro-1,3-butadiene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
Isopropylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
m,p-Xylenes	NE							<1.0	<1.0	<1									<1.0	<1.0	<1					
Methyl iodide	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4	<2.0	<2.0	<2.0	<2.0	<2.0
Methyl tert-butyl ether	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0
Naphthalene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0
n-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
n-Propylbenzene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	NE							<0.5	<0.50	<0.5									<0.5	<0.50	<0.5					
p-Isopropyltoluene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
sec-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
tert-Butylbenzene	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1.9	2.6	1.9	2.7	**5.5**	**8.9**	**8.7**	**8.6**
Toluene	1000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Total Xylenes	10000	<10	<10	<10	<10	<10	<10				<10	<10	<10	<10	<10	<10	<10	<10				<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
trans-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0
Trichloroethene	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0
Trichlorofluoromethane	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl acetate	NE	<5.0	<5.0	<25	<25	<25	<25	<3.0	<3.0	<4	<5.0	<5.0	<25	<25	<25	<25	<25	<25	<3.0	<3.0	<4	<5.0	<5.0	<25	<25	<25
Vinyl chloride	2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-4
Original and Duplicate Groundwater Samples
Volatile Organic Compounds
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	MW-5 COA-MW5 FO 07/25/2001 17:13:00	MW-5 ADEQ-MW5 FD 07/25/2001 19:13:00	MW-5 COA-MW5 FO 10/29/2001 18:09:00	MW-5 MW-5 FO 05/15/2002 13:20:00	MW-5 ADEQA-MW5 FD 05/15/2002 13:21:00	MW-5 MW-5 FO 08/13/2002 10:45:00	MW-5 ADEQA-MW5 FD 08/13/2002 11:45:00	MW-5 MW-5 FO 10/30/2002 12:33:00	MW-5 MW-5 FO 03/13/2003 10:46:00	MW-5 MW-5 FO 01/29/2004 16:53:00	MW-5 MW-5 FO 01/27/2005 16:28:00	MW-6 MW6 FO 11/28/2000 13:45:00	MW-6 COA MW6 FO 01/08/2001 15:17:00	MW-6 COA-MW6 FO 04/25/2001 10:28:00	MW-6 COA-MW6-3WV FD 04/25/2001 10:40:00	MW-6 COA-MW6 FO 07/26/2001 08:30:00	MW-6 COA-MW6 FO 10/29/2001 15:40:00	MW-6 MW-6 FO 05/15/2002 12:31:00	MW-6 MW-6 FO 01/30/2004 10:48:00	MW-6 MW-6 FO 01/27/2005 17:25:00	MW-6 ADEQ MW-6 FD 01/27/2005 17:40:00	MW-7 COA-MW7 FO 11/27/2000 16:30:00	MW-7 COA MW7 FO 01/08/2001 11:55:00	MW-7 COA-MW7 FO 04/25/2001 19:11:00	MW-7 COA-MW7-3WV FD 04/25/2001 19:17:00
1,1,1,2-Tetrachloroethane	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	200	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,1,2,2-Tetrachloroethane	NE	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<1	<2.0	<2.0	<2.0	<2.0
1,1,2-Trichloroethane	5	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<1	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethene	7	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
1,1-Dichloropropene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,2,3-Trichlorobenzene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
1,2,3-Trichloropropane	NE	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<10	<10	<10	<10	<10	<10	<1.0	<1.0	<1	<1	<10	<10	<10	<10
1,2,4-Trichlorobenzene	70	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,2-Dibromo-3-chloropropane	0.2	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5	<5	<5.0	<5.0	<5.0	<5.0
1,2-Dibromoethane	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,2-Dichlorobenzene	600	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,2-Dichloroethane	5	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,2-Dichloropropane	5	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,3,5-Trimethylbenzene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,3-Dichlorobenzene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
1,3-Dichloropropane	NE	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<1	<2.0	<2.0	<2.0	<2.0
1,4-Dichlorobenzene	75	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
2,2-Dichloropropane	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2	<2.0	<2.0	<2.0	<2.0
2-Butanone	NE	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<8.0	<8.0	<8	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<8	<10	<10	<10	<10
2-Chloroethyl Vinyl Ether	NE																									
2-Chlorotoluene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
2-Hexanone	NE	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5	<10	<10	<10	<10	<10	<10	<5.0	<5.0	<5	<5	<10	<10	<10	<10
4-Chlorotoluene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	NE	<10	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<8.0	<8.0	<8	<10	<10	<10	<10	<10	<10	<5.0	<8.0	<8	<8	<10	<10	<10	<10
Acetone	NE	<20	<20	<20	<10	<10	<10	<10	<10	<10	<20	<20	<20	<20	<20	<20	<20	<20	<10	<20	<20	<20	<20	<20	<20	<20
Benzene	5	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Bromobenzene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
Bromochloromethane	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
Bromodichloromethane	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Bromoform	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
Bromomethane	NE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
Carbon disulfide	NE	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<2	<5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	5	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<2	<2	<5.0	<5.0	<5.0	<5.0
Chlorobenzene	100	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Chloroethane	NE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<2.0	<2	<2	<5.0	<5.0	<5.0	<5.0
Chloroform	NE	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<1	<2.0	<2.0	<2.0	<2.0
Chloromethane	NE	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2	<2	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	70	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
cis-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Dibromomethane	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Dichlorodifluoromethane	NE	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<3	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	700	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Freon 113	NE				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1							<1.0	<1.0	<1	<1				
Hexachloro-1,3-butadiene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
Isopropylbenzene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
m,p-Xylenes	NE				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1							<1.0	<1.0	<1	<1				
Methyl iodide	NE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4	<4	<2.0	<2.0	<2.0	<2.0
Methyl tert-butyl ether	NE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.6	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	5	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<2	<2	<5.0	<5.0	<5.0	<5.0
Naphthalene	NE	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3	<3	<5.0	<5.0	<5.0	<5.0
n-Butylbenzene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
n-Propylbenzene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
o-Xylene	NE				<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5							<0.5	<0.50	<0.5	<0.5				
p-Isopropyltoluene	NE	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
sec-Butylbenzene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
Styrene	100	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
tert-Butylbenzene	NE	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.50	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5	3.4	3.4	3	3.5	3.5	2.9	2.9	2.9	1.9	2.7	1.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Toluene	1000	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Total Xylenes	10000	<10	<10	<10									<10	<10	<10	<10	<10	<10					<10	<10	<10	<10
trans-1,2-Dichloroethene	100	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
trans-1,3-Dichloropropene	NE	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1	<1	<2.0	<2.0	<2.0	<2.0
Trichloroethene	5	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.50	<0.5	<0.5	<2.0	<2.0	<2.0	<2.0
Trichlorofluoromethane	NE	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0
Vinyl acetate	NE	<25	<25	<25	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<4	<5.0	<5.0	<25	<25	<25	<25	<3.0	<3.0	<4	<4	<5.0	<5.0	<25	<25
Vinyl chloride	2	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1	<1	<5.0	<5.0	<5.0	<5.0

NOTE: Blank cells indicate that analysis
for the given compound was not conducted
during the round.

All results in micrograms per liter
Bold results exceed Aquifer Water Quality Standards
FO = Field Original Sample
FD = Field Duplicate Sample
< = Less than listed concentration (ug/L)
NE = Not Established

Table 2-5
Original and Duplicate Groundwater Samples
Inorganic Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG #1 COG #1 FO 11/30/2000 11:45:00	COG #1 COG #1 FO 01/11/2001 09:30:00	COG #1 COG-1 FO 04/27/2001 08:16:00	COG #1 COG#1 FO 07/27/2001 10:26:00	COG #1 COG-1 FO 10/30/2001 13:24:00	COG-MW3 COG-MW3 FO 11/30/2000 14:25:00	COG-MW3 COG MW3 FO 01/11/2001 11:21:00	COG-MW3 COG-MW3 FO 04/26/2001 15:09:00	COG-MW3 COG-MW3 FO 07/27/2001 11:46:00	COG-MW3 COG-MW3 FO 10/31/2001 08:36:00	GMW-4 GMW-4 FO 04/25/2001 12:41:00	GMW-4 GMW-4 FO 07/26/2001 13:40:00
Ammonia as Nitrogen	NE	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5
Antimony	0.006	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bicarbonate Alkalinity	NE	NA	NA	NA	NA	NA	250	NA	210	220	NA	230	230
Cadmium	0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005
Calcium	NE	NA	110	130	NA	NA	120	120	120	NA	NA	130	NA
Carbonate Alkalinity	NE	NA	NA	NA	NA	NA	<5.0	210	<5.0	<5.0	NA	<5.0	<5.0
Chromium	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	<0.01
Copper	NE	0.035	0.031	0.046	<0.02	<0.02	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Organic Carbon	NE	NA	NA	NA	NA	NA	<1.0	<1.0	1.3	<1.0	NA	1.3	1.6
Lead	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	NE	NA	<0.02	<0.02	NA	NA	33	<0.02	<0.02	NA	NA	<0.02	NA
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.002	<0.0002	<0.0002	<0.0002
Nickel	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as Nitrogen	10	NA	NA	NA	NA	NA	NA	NA	NA	7.3	NA	NA	8.6
Selenium	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate	NE	NA	NA	NA	NA	NA	150	150	160	140	NA	180	170
Thallium	0.002	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon	NE	NA	NA	NA	NA	NA	<1.0	1.2	1.2	<1.0	NA	1.1	<1.0
Total Recoverable Petroleum Hydrocarbons	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NE	<0.05	<0.05	<0.05	<0.05	<0.05	0.068	<0.05	<0.05	<0.05	0.12	0.072	<0.05

Bold font indicates concentrations above the applicable Aquifer Water Quality Standard.

All results in milligrams per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
NA: Not Analyzed
< = Less than listed concentration (mg/L)

Table 2-5
Original and Duplicate Groundwater Samples
Inorganic Sample Results
Western Avenue WQARF Plume Site

Component	GMW-4 GMW-4 FO 10/30/2001 10:12:00	GMW-5 GMW-5 FO 01/09/2001 15:28:00	GMW-5 GMW-5 FO 04/25/2001 15:47:00	GMW-5 GMW-5 FO 07/26/2001 17:24:00	GMW-5 GMW-5 FO 10/30/2001 11:05:00	GMW-5 GMW-5 FO 05/14/2002 14:04:00	GMW-5 GMW-5 FO 10/31/2002 09:03:00	MW-1 COA MW1 FO 01/10/2001 13:30:00	MW-1 COA-MW1 FO 04/26/2001 09:36:00	MW-1 COA-MW1 FO 07/26/2001 18:58:00	MW-1 COA-MW1 FO 10/29/2001 17:33:00	MW-2 COA MW2 FO 01/10/2001 10:15:00
Ammonia as Nitrogen	NA	<0.5	<0.5	<0.5	NA	NA	NA	<0.5	<0.5	<0.5	NA	<0.5
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	**0.093**	<0.05	<0.05	<0.05	0.005	**0.01**	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	<0.004	<0.004	<0.004	<0.004	<0.004	NA	NA	<0.004	<0.004	<0.004	<0.004	<0.004
Bicarbonate Alkalinity	NA	NA	210	210		NA	NA	NA	260	270	NA	NA
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	NA	NA	230	NA	NA	NA	NA	140	150	NA	NA	NA
Carbonate Alkalinity	NA	200	<5.0	<5.0	NA	NA	NA	310	<5.0	<5.0	NA	210
Chromium	<0.01	0.045	<0.01	<0.01	<0.01	NA	NA	<0.01	<0.01	0.016	0.063	0.031
Copper	0.044	<0.02	<0.02	<0.02	<0.02	NA	NA	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Organic Carbon	NA	2.1	1.2	1.3		NA	NA	<1.0	1.8	1.2	NA	1.1
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	NA	NA	<0.02	NA	NA	NA	NA	<0.02	<0.02	NA	NA	NA
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as Nitrogen	NA	NA	NA	**12**	NA	NA	NA	NA	NA	**10**	NA	NA
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate	NA	300	320	340	NA	NA	NA	160	180	220	NA	90
Thallium	<0.05	<0.05	<0.05	<0.05	<0.05	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon	NA	<1.0	1.5	<1.0	NA	NA	NA	4.9	1.4	1.1	NA	<1.0
Total Recoverable Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	0.13	3.6	0.22	0.23	0.41	NA	NA	<0.05	<0.05	<0.05	0.062	<0.05

Bold font indicates concentrations above the applicable Aquifer Water Quality Standard.

All results in milligrams per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
NA: Not Analyzed
< = Less than listed concentration (mg/L)

Table 2-5
Original and Duplicate Groundwater Samples
Inorganic Sample Results
Western Avenue WQARF Plume Site

Component	MW-2 COA Pump FD 01/10/2001 10:15:00	MW-2 COA-MW2 FO 04/27/2001 10:39:00	MW-2 COA-MW2 FO 07/27/2001 13:38:00	MW-2 COA-MW2 FO 10/30/2001 09:00:00	MW-3 MW3 FO 11/28/2000 15:01:00	MW-3 COA MW3 FO 01/09/2001 12:13:00	MW-3 COA-MW3 FO 04/24/2001 12:21:00	MW-3 COA-MW3 FO 04/24/2001 12:20:00	MW-3 COA-MW3 FO 07/25/2001 13:10:00	MW-3 COA-MW3 FO 10/29/2001 13:22:00	MW-4 MW4 FO 11/28/2000 16:45:00	MW-4 COA MW4 FO 01/09/2001 13:58:00
Ammonia as Nitrogen	NA	<0.5	<0.5	NA	<0.5	<0.5	0.73	NA	<0.5	NA	<0.5	<0.5
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Beryllium	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	NA	<0.004	<0.004	<0.004	<0.004
Bicarbonate Alkalinity	NA	220	220	NA	210	NA	200	NA	200	NA	190	NA
Cadmium	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
Calcium	NA	94	NA	NA	110	NA	110	NA	NA	NA	130	NA
Carbonate Alkalinity	NA	<5.0	<5.0	NA	<5.0	210	<5.0	NA	<5.0	NA	<5.0	200
Chromium	0.026	<0.01	0.04	0.011	<0.01	0.024	<0.01	NA	<0.01	0.012	<0.01	<0.01
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA	<0.02	<0.02	<0.02	<0.02
Dissolved Organic Carbon	NA	1.5	1.5	NA	1	1	1.3	1.3	2.3	NA	<1.0	1.5
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Manganese	NA	<0.02	NA	NA	<0.02	NA	<0.02	NA	NA	NA	<0.02	NA
Mercury	<0.0002	<0.0002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Nitrate as Nitrogen	NA	NA	5.7	NA	NA	NA	NA	NA	7.4	NA	NA	NA
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005	<0.005	<0.005	<0.005
Sulfate	NA	91	110	NA	79	150	120	NA	86	NA	240	150
Thallium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon	NA	1.2	<1.0	NA	<1.0	<1.0	1.4	1.4	<1.0	NA	<1.0	<1.0
Total Recoverable Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.056	NA	0.052	0.083	<0.05	<0.05

Bold font indicates concentrations above the applicable Aquifer Water Quality Standard.

All results in milligrams per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
NA: Not Analyzed
< = Less than listed concentration (mg/L)

Table 2-5
Original and Duplicate Groundwater Samples
Inorganic Sample Results
Western Avenue WQARF Plume Site

Component	MW-4 COA-MW4 FO 04/24/2001 16:17:00	MW-4 COA-MW4 FO 07/25/2001 15:28:00	MW-4 COA-MW4 FO 10/29/2001 14:19:00	MW-5 MW5 FO 11/28/2000 11:30:00	MW-5 COA MW5 FO 01/08/2001 13:48:00	MW-5 COA-MW5 FO 04/26/2001 16:42:00	MW-5 COA-MW5 FO 07/25/2001 17:13:00	MW-5 COA-MW5 FO 10/29/2001 18:09:00	MW-6 MW6 FO 11/28/2000 13:45:00	MW-6 COA MW6 FO 01/08/2001 15:17:00	MW-6 COA-MW6 FO 04/25/2001 10:28:00	MW-6 COA-MW6 FO 07/26/2001 08:30:00
Ammonia as Nitrogen	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bicarbonate Alkalinity	200	200	NA	210	NA	220	220	NA	190	NA	210	210
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	120	NA	NA	140	NA	120	NA	NA	210	NA	200	NA
Carbonate Alkalinity	<5.0	<5.0	NA	<5.0	210	<5.0	<5.0	NA	<5.0	200	<5.0	<5.0
Chromium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	0.033	0.026
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Organic Carbon	1.8	1.4	NA	1.8	<1.0	1.6	1.2	NA	<1.0	2.6	1.5	1.9
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	<0.02	NA	NA	<0.02	NA	<0.02	NA	NA	0.076	NA	<0.02	NA
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as Nitrogen	NA	7.6	NA	NA	NA	NA	7	NA	NA	NA	NA	7.4
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate	150	140	NA	190	180	170	160	NA	260	260	260	260
Thallium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon	1.7	<1.0	NA	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	1.4	<1.0
Total Recoverable Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.075	<0.05

Bold font indicates concentrations above the applicable Aquifer Water Quality Standard.

All results in milligrams per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
NA: Not Analyzed
< = Less than listed concentration (mg/L)

Table 2-5
Original and Duplicate Groundwater Samples
Inorganic Sample Results
Western Avenue WQARF Plume Site

Component	MW-6 COA-MW6 FO 10/29/2001 15:40:00	MW-7 COA-MW7 FO 11/27/2000 16:30:00	MW-7 COA MW7 FO 01/08/2001 11:55:00	MW-7 COA-MW7 FO 04/25/2001 19:11:00	MW-7 COA-MW7 FO 07/26/2001 10:20:00	MW-7 COA-MW7 FO 10/29/2001 16:45:00
Ammonia as Nitrogen	NA	<0.5	<0.5	<0.5	<0.5	NA
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bicarbonate Alkalinity	NA	180	NA	190	200	NA
Cadmium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	NA	220	NA	200	NA	NA
Carbonate Alkalinity	NA	<5.0	190	<5.0	<5.0	NA
Chromium	<0.01	0.015	<0.01	<0.01	<0.01	<0.01
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dissolved Organic Carbon	NA	1.1	<1.0	1.4	1.1	NA
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	NA	<0.02	NA	<0.02	NA	NA
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate as Nitrogen	NA	NA	NA	NA	8.9	NA
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate	NA	260	250	250	230	NA
Thallium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Organic Carbon	NA	<1.0	<1.0	1.5	<1.0	NA
Total Recoverable Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA
Zinc	0.051	<0.05	<0.05	<0.05	<0.05	0.074

Bold font indicates concentrations above the applicable Aquifer Water Quality Standard.

All results in milligrams per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
NA: Not Analyzed
< = Less than listed concentration (mg/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG-MW3 ADEQ-MW3 FD 5/15/2002 10:45:00	COG-MW3 COG MW3 FO 4/6/1997 11:40:00	COG-MW3 COG MW3 FO 4/6/1997 12:50:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:01	GMW-4 GMW-4 FO 5/14/2002 15:21:00	GMW-4 GMW-4 FO 5/14/2002 15:21:01	GMW-4 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW-5 FO 5/14/2002 14:04:00
1,1-Dichloro-2,2-Bis(P-Chlorophenyl)Ethane	NE		<0.1							<0.1	
1,2,4-Trichlorobenzene	70		<10						<10		
1,2-Dibromoethane	NE	<0.01				<0.01		<0.01			
1,2-Dichlorobenzene	600									<10	
1,3-Dichlorobenzene	NE									<10	
1,4-Dichlorobenzene	75									<10	
2,4,5-Trichlorophenol	NE		<20							<20	
2,4,6-Trichlorophenol	NE			<20						<20	
2,4-Dichlorophenol	NE		<10							<10	
2,4-Dimethylphenol	NE		<20							<20	
2,4-Dinitrophenol	NE		<100							<100	
2,4-Dinitrotoluene	NE		<10							<10	
2,6-Dinitrotoluene	NE		<10							<10	
2-Methylnaphthalene	NE		<10							<10	
2-Nitrophenol	NE		<10							<10	
3,3'-Dichlorobenzidine	NE		<40							<40	
4,6-Dinitro-o-cresol	NE		<40							<40	
4-Bromophenyl Phenyl Ether	NE		<10							<10	
4-Chloro-M-Cresol	NE		<20							<20	
4-Chlorophenyl phenyl ether	NE		<10							<10	
4-Nitrophenol	NE		<100							<100	
6,9-Methano-2,4,3-Benzodioxathiepin, 6,7,8,9,10,10	NE		<0.1							<0.1	
Acenaphthene	NE		<10							<10	
Acenaphthylene	NE		<10							<10	
Aldrin	NE		<0.1							<0.1	
alpha-Hexachlorocyclohexane	NE		<0.05							<0.05	
Aniline	NE		<10							<10	
Anthracene	NE		<10							<10	
Arochlor 1016	0.5		<1							<1	
Arochlor 1221	0.5		<1							<1	
Arochlor 1232	0.5		<1							<1	
Arochlor 1242	0.5		<1							<1	
Arochlor 1248	0.5		<1							<1	
Arochlor 1254	0.5		<1							<1	
Arochlor 1260	0.5		<1							<1	

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG-MW3 ADEQ-MW3 FD 5/15/2002 10:45:00	COG-MW3 COG MW3 FO 4/6/1997 11:40:00	COG-MW3 COG MW3 FO 4/6/1997 12:50:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:01	GMW-4 GMW-4 FO 5/14/2002 15:21:00	GMW-4 GMW-4 FO 5/14/2002 15:21:01	GMW-4 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW-5 FO 5/14/2002 14:04:00
Azobenzene	NE		<20							<20	
Benz(a)anthracene	NE		<10							<10	
Benzene, 1,1'-(Dichloroethenylidene)Bis(4-Chloro	NE		<0.05							<0.05	
Benzidine	NE		<100							<100	
Benzo(a)pyrene	0.2		<10							<10	
Benzo(b)fluoranthene	NE		<10							<10	
Benzo(ghi)Perylene	NE		<10							<10	
Benzo(k)fluoranthene	NE		<10							<10	
Benzoic Acid, Tech	NE		<100							<100	
Benzyl Alcohol	NE		<20							<20	
beta-Hexachlorocyclohexane	NE		<0.05							<0.05	
Bis(2-chloroethoxy) methane	NE		<10							<10	
Bis(2-chloroethyl) ether	NE		<10							<10	
Bis(2-chloroisopropyl)ether	NE		<10							<10	
Butyl Benzyl Phthalate	NE		<20							<20	
Chlordane	2		<0.15							<0.15	
Chrysene	NE		<10							<10	
Delta-Hexachlorocyclohexane	NE		<0.4							<0.4	
Di(2-ethylhexyl)phthalate	NE		<20							<20	
Dibenz(a,h)anthracene	NE		<20							<20	
Dibenzofuran	NE		<10							<10	
Dibromochloropropane	NE	<0.01			<0.01		<0.01				<0.01
Dibutyl phthalate	NE		<20							<20	
Dichlorodiphenyltrichloroethane	NE		<0.1							<0.1	
Dieldrin	NE		<0.1							<0.1	
Diethyl Glycol Monoethyl Ether Acetate	NE		<10							<10	
Dimethyl phthalate	NE		<10							<10	
Dioctyl Phthalate	NE		<40							<40	
Endosulfan I	NE		<0.15							<0.15	
Endosulfan Sulfate	NE		<0.75							<0.75	
Endrin	2		<0.1							<0.1	
Endrin Aldehyde	NE		<0.25							<0.25	
Fluoranthene	NE		<10							<10	
Fluorene	NE		<10							<10	
Heptachlor	NE		<0.1							<0.1	

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	COG-MW3 ADEQ-MW3 FD 5/15/2002 10:45:00	COG-MW3 COG MW3 FO 4/6/1997 11:40:00	COG-MW3 COG MW3 FO 4/6/1997 12:50:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:00	COG-MW3 COG-MW3 FO 5/15/2002 10:45:01	GMW-4 GMW-4 FO 5/14/2002 15:21:00	GMW-4 GMW-4 FO 5/14/2002 15:21:01	GMW-4 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW5 FO 4/6/1997 09:54:00	GMW-5 GMW-5 FO 5/14/2002 14:04:00
Heptachlor Epoxide	0.2		<0.1							<0.1	
Hexachloro-1,3-butadiene	NE		<10							<10	
Hexachlorobenzene	NE		<10							<10	
Hexachlorocyclopentadiene	NE		<40							<40	
Hexachloroethane	NE		<10							<10	
Indeno[1,2,3-cd]pyrene	NE		<20							<20	
Isophorone	NE		<10							<10	
Lindane	0.2		<0.05							<0.05	
Methoxychlor	40		<10							<10	
M-Nitroaniline	NE		<20							<20	
Naphthalene	NE		<10							<10	
Naphthalene, 2-Chloro	NE		<10							<10	
Nitrobenzene	NE		<40							<40	
N-Nitroso-di-n-propylamine	NE		<10							<10	
N-Nitrosodiphenylamine	NE		<10							<10	
o-Cresol	NE		<10							<10	
O-Nitroaniline	NE		<20							<20	
p-Chloroaniline	NE		<10							<10	
p-Cresol	NE		<10							<10	
Pentachlorophenol	NE		<40							<40	
Phenanthrene	NE		<10							<10	
Phenol	NE		<10							<10	
Phenol 2-Chloro-2-Chlorophenol	NE		<10							<10	
p-Nitroaniline	NE		<100							<100	
Pyrene	NE		<10							<10	
Toxaphene	3		<0.5							<0.5	

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	GMW-5 GMW-5 FO 5/14/2002 14:04:01	MW-1 COA MW1 FO 4/6/1997 12:50:00	MW-1 COA MW1A FD 4/6/1997 13:20:00	MW-1 COA-MW1 FO 5/15/2002 13:52:00	MW-2 COA MW2 FO 4/6/1997 08:30:00	MW-3 COA-MW3 FO 5/15/2002 15:25:00	MW-4 COA-MW4 FO 5/15/2002 14:35:00	MW-5 COA-MW5 FO 5/15/2002 13:20:00	MW-6 COA-MW6 FO 5/15/2002 12:31:00	MW-7 COA-MW7 FO 5/15/2002 11:45:00
1,1-Dichloro-2,2-Bis(P-Chlorophenyl)Ethane	NE		<0.1	<0.1		<0.1					
1,2,4-Trichlorobenzene	70		<10	<10		<10					
1,2-Dibromoethane	NE	<0.01			<0.01		<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	600										
1,3-Dichlorobenzene	NE										
1,4-Dichlorobenzene	75										
2,4,5-Trichlorophenol	NE		<20	<20		<20					
2,4,6-Trichlorophenol	NE		<20	<20		<20					
2,4-Dichlorophenol	NE		<10	<10		<10					
2,4-Dimethylphenol	NE		<20	<20		<20					
2,4-Dinitrophenol	NE		<100	<100		<100					
2,4-Dinitrotoluene	NE		<10	<10		<10					
2,6-Dinitrotoluene	NE		<10	<10		<10					
2-Methylnaphthalene	NE		<10	<10		<10					
2-Nitrophenol	NE		<10	<10		<10					
3,3'-Dichlorobenzidine	NE		<40	<40		<40					
4,6-Dinitro-o-cresol	NE		<40	<40		<40					
4-Bromophenyl Phenyl Ether	NE		<10	<10		<10					
4-Chloro-M-Cresol	NE		<20	<20		<20					
4-Chlorophenyl phenyl ether	NE		<10	<10		<10					
4-Nitrophenol	NE		<100	<100		<100					
6,9-Methano-2,4,3-Benzodioxathiepin, 6,7,8,9,10,10	NE		<0.1	<0.1		<0.1					
Acenaphthene	NE		<10	<10		<10					
Acenaphthylene	NE		<10	<10		<10					
Aldrin	NE		<0.1	<0.1		<0.1					
alpha-Hexachlorocyclohexane	NE		<0.05	<0.05		<0.05					
Aniline	NE		<10	<10		<10					
Anthracene	NE		<10	<10		<10					
Arochlor 1016	0.5		<1	<1		<1					
Arochlor 1221	0.5		<1	<1		<1					
Arochlor 1232	0.5		<1	<1		<1					
Arochlor 1242	0.5		<1	<1		<1					
Arochlor 1248	0.5		<1	<1		<1					
Arochlor 1254	0.5		<1	<1		<1					
Arochlor 1260	0.5		<1	<1		<1					

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	GMW-5 GMW-5 FO 5/14/2002 14:04:01	MW-1 COA MW1 FO 4/6/1997 12:50:00	MW-1 COA MW1A FD 4/6/1997 13:20:00	MW-1 COA-MW1 FO 5/15/2002 13:52:00	MW-2 COA MW2 FO 4/6/1997 08:30:00	MW-3 COA-MW3 FO 5/15/2002 15:25:00	MW-4 COA-MW4 FO 5/15/2002 14:35:00	MW-5 COA-MW5 FO 5/15/2002 13:20:00	MW-6 COA-MW6 FO 5/15/2002 12:31:00	MW-7 COA-MW7 FO 5/15/2002 11:45:00
Azobenzene	NE		<20	<20		<20					
Benz(a)anthracene	NE		<10	<10		<10					
Benzene, 1,1'-(Dichloroethenylidene)Bis(4-Chloro	NE		<0.05	<0.05		<0.05					
Benzidine	NE		<100	<100		<100					
Benzo(a)pyrene	0.2		<10	<10		<10					
Benzo(b)fluoranthene	NE		<10	<10		<10					
Benzo(ghi)Perylene	NE		<10	<10		<10					
Benzo(k)fluoranthene	NE		<10	<10		<10					
Benzoic Acid, Tech	NE		<100	<100		<100					
Benzyl Alcohol	NE		<20	<20		<20					
beta-Hexachlorocyclohexane	NE		<0.05	<0.05		<0.05					
Bis(2-chloroethoxy) methane	NE		<10	<10		<10					
Bis(2-chloroethyl) ether	NE		<10	<10		<10					
Bis(2-chloroisopropyl)ether	NE		<10	<10		<10					
Butyl Benzyl Phthalate	NE		<20	<20		<20					
Chlordane	2		<0.15	<0.15		<0.15					
Chrysene	NE		<10	<10		<10					
Delta-Hexachlorocyclohexane	NE		<0.4	<0.4		<0.4					
Di(2-ethylhexyl)phthalate	NE		<20	<20		<20					
Dibenz(a,h)anthracene	NE		<20	<20		<20					
Dibenzofuran	NE		<10	<10		<10					
Dibromochloropropane	NE				<0.01		<0.01	<0.01	<0.01	<0.01	<0.01
Dibutyl phthalate	NE		<20	<20		<20					
Dichlorodiphenyltrichloroethane	NE		<0.1	<0.1		<0.1					
Dieldrin	NE		<0.1	<0.1		<0.1					
Diethyl Glycol Monoethyl Ether Acetate	NE		<10	<10		<10					
Dimethyl phthalate	NE		<10	<10		<10					
Dioctyl Phthalate	NE		<40	<40		<40					
Endosulfan I	NE		<0.15	<0.15		<0.15					
Endosulfan Sulfate	NE		<0.75	<0.75		<0.75					
Endrin	2		<0.1	<0.1		<0.1					
Endrin Aldehyde	NE		<0.25	<0.25		<0.25					
Fluoranthene	NE		<10	<10		<10					
Fluorene	NE		<10	<10		<10					
Heptachlor	NE		<0.1	<0.1		<0.1					

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-6
Original and Duplicate Groundwater Samples
Pesticide, SVOC and PCB Sample Results
Western Avenue WQARF Plume Site

Component	Aquifer Water Quality Standard	GMW-5 GMW-5 FO 5/14/2002 14:04:01	MW-1 COA MW1 FO 4/6/1997 12:50:00	MW-1 COA MW1A FD 4/6/1997 13:20:00	MW-1 COA-MW1 FO 5/15/2002 13:52:00	MW-2 COA MW2 FO 4/6/1997 08:30:00	MW-3 COA-MW3 FO 5/15/2002 15:25:00	MW-4 COA-MW4 FO 5/15/2002 14:35:00	MW-5 COA-MW5 FO 5/15/2002 13:20:00	MW-6 COA-MW6 FO 5/15/2002 12:31:00	MW-7 COA-MW7 FO 5/15/2002 11:45:00
Heptachlor Epoxide	0.2		<0.1	<0.1		<0.1					
Hexachloro-1,3-butadiene	NE		<10	<10		<10					
Hexachlorobenzene	NE		<10	<10		<10					
Hexachlorocyclopentadiene	NE		<40	<40		<40					
Hexachloroethane	NE		<10	<10		<10					
Indeno[1,2,3-cd]pyrene	NE		<20	<20		<20					
Isophorone	NE		<10	<10		<10					
Lindane	0.2		<0.05	<0.05		<0.05					
Methoxychlor	40		<10	<10		<10					
M-Nitroaniline	NE		<20	<20		<20					
Naphthalene	NE		<10	<10		<10					
Naphthalene, 2-Chloro	NE		<10	<10		<10					
Nitrobenzene	NE		<40	<40		<40					
N-Nitroso-di-n-propylamine	NE		<10	<10		<10					
N-Nitrosodiphenylamine	NE		<10	<10		<10					
o-Cresol	NE		<10	<10		<10					
O-Nitroaniline	NE		<20	<20		<20					
p-Chloroaniline	NE		<10	<10		<10					
p-Cresol	NE		<10	<10		<10					
Pentachlorophenol	NE		<40	<40		<40					
Phenanthrene	NE		<10	<10		<10					
Phenol	NE		<10	<10		<10					
Phenol 2-Chloro-2-Chlorophenol	NE		<10	<10		<10					
p-Nitroaniline	NE		<100	<100		<100					
Pyrene	NE		<10	<10		<10					
Toxaphene	3		<0.5	<0.5		<0.5					

All results in micrograms per liter
FO = Field Original Sample
FD = Field Duplicate Sample
NE: Not Established
Blank Cells Are Compounds Not Analyzed
< = Less than listed concentration (ug/L)

Table 2-7
SUMMARY OF SOIL GAS ANALYTICAL RESULTS
Western Avenue Dry Cleaners
Avondale, Arizona

Analyte	Method	SAMPLE ID														
		WDC-1SV	WDC-2SV	WDC-3SV	WDC-4SV	WDC-5SV	WDC-6SV	WDC-7SV	WDC-8SV	WDC-9SV	WDC-10SV	WDC-13SV	WDC-14SV	WDC-15SV	WDC-16SV	WDC-17SV
Dichlorodifluoromethane/ Chloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane/ Chloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichlorofluoromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methylene Chloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloropropane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromodichloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,3-Dichloropropene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,3-Dichloropropene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2-Trichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene	8010	1.5/1.3	1.2/1.0	<2	1.1/1.0	<2	3.2/2.9	4.0/3.9	<2	3.5/3.4	5.4/5.3	<2	1.2/1.0	5.3/5.2	<2	<2
Dibromochloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromoform	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2,2-Tetrachloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,3-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chlorobenzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
p,m-Xylene	8020	<2	<2	3.3/3.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	8020	<2	<2	2.6/3.6	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

NOTE:
Concentrations are in micrograms per liter (µg/L)
< = less than listed concentration
1.5/1.3: reported duplicate samples

Table 2-7
SUMMARY OF SOIL GAS ANALYTICAL RESULTS
Western Avenue Dry Cleaners
Avondale, Arizona

Analyte	Method	SAMPLE ID														
		WDC-1SV	WDC-2SV	WDC-3SV	WDC-4SV	WDC-5SV	WDC-6SV	WDC-7SV	WDC-8SV	WDC-9SV	WDC-10SV	WDC-13SV	WDC-14SV	WDC-15SV	WDC-16SV	WDC-17SV
Dichlorodifluoromethane/ Chloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane/ Chloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichlorofluoromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methylene Chloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,2-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon tetrachloride	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloropropane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromodichloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,3-Dichloropropene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,3-Dichloropropene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2-Trichloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene	8010	1.5/1.3	1.2/1.0	<2	1.1/1.0	<2	3.2/2.9	4.0/3.9	<2	3.5/3.4	5.4/5.3	<2	1.2/1.0	5.3/5.2	<2	<2
Dibromochloromethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromoform	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2,2-Tetrachloroethane	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,3-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	8010	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chlorobenzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	8020	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
p,m-Xylene	8020	<2	<2	3.3/3.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	8020	<2	<2	2.6/3.6	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

NOTE:
Concentrations are in micrograms per liter (µg/L)
< = less than listed concentration
1.5/1.3: reported duplicate samples

Table 2-8
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
Western Avenue Dry Cleaners
Avondale, Arizona

Analyte	Method	SRL		Minimum GPL	SAMPLE ID														
		Res	NR		WDC-1S	WDC-1D	WDC-2S	WDC-3S	WDC-4D	WDC-5D	WDC-6S	WDC-7S	WDC-8S	WDC-9S	WDC-10S	WDC-11S	WDC-12S	WDC-14S	WDC-15S
1,1,1-Trichloroethane (TCA)	8010	1200	1200	1.0	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,1,2,2-Tetrachloroethane	8010	0.42*	9.3	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,1,2-Trichloroethane	8010	0.74*	16	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,1-Dichloroethane	8010	506	1700	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,1-Dichloroethene (1,1-DCE)	8010	120	410	0.81	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,2-Dichlorobenzene	8010	600	600	o-72 / p-9.3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,2-Dichloroethane (1,2-DCA)	8010	0.28* / 8.5	6	0.21	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,2-Dichloropropane	8010	0.34*	7.4	0.28	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,3-Dichlorobenzene	8010	530	600	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
1,4-Dichlorobenzene	8010	3.5*	79	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Benzene	8020	0.61	1.3	0.71	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bromodichloromethane	8010	0.8*	18	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bromoform	8010	69*	2200	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Bromomethane/ Chloroethane	8010	3.9	13	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Carbon tetrachloride	8010	0.25*	5.5	1.6	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Chlorobenzene	8010	150	530	22	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Chlorobenzene	8020	150	530	22	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Chloroform	8010	NE	4.7	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
cis-1,2-Dichloroethene	8010	43	150	4.9	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
cis-1,3-Dichloropropene	8010	0.79*	18	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dibromochloromethane	8010	1.1*	26	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dichlorodifluoromethane/ Chloromethane	8010	94	310	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Ethylbenzene	8020	1900	7400	120	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Methylene Chloride	8010	9.3*	210	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
o-Xylene	8020	270	420	2200 (Total)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
p,m-Xylene	8020	270	420	2200 (Total)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Tetrachloroethene (PCE)	8010	0.51*	13	1.3	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Toluene	8020	520	520	400	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
trans-1,2-Dichloroethene	8010	69	230	8.4	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
trans-1,3-Dichloropropene	8010	0.79*	18	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Trichloroethene (TCE)	8010	1.1*	23	0.61	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Trichlorofluoromethane	8010	2000	1300	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Vinyl Chloride	8010	0.085*	0.75	NE	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

NOTE: All Concentrations are milligrams per liter (mg/L)
< = less than listed concentration
* = 10^{-6} Carcinogenic Risk Target (10^{-5} Risk Target is 10 times higher concentration)
NE = No regulatory concentration level established

Table 5-1
Summary of PCE Groundwater Concentrations
Western Avenue WQARF Site

Month/Year	COG #1	COG-MW3	GMW-4	GMW-5	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	School Well
Jun-95	NS	NS	NS	NS	ND	3.6	NS	NS	NS	NS	NS	NS
Jul-95	NS	NS	NS	NS	NS	**51**	NS	NS	NS	NS	NS	NS
Mar-96	NS	NS	**34**	**8.2**	**87**	**73**	NS	NS	NS	NS	NS	NS
Jun-96	NS	NS	NS	**12**	**78**	**76**	NS	NS	NS	NS	NS	NS
Oct-96	NS	**24**	NS	**9.7**	**66**	**69**	NS	NS	NS	NS	NS	NS
Dec-96	NS	**82**	NS	**9.5**	**74**	**72**	NS	NS	NS	NS	NS	NS
Mar-97	NS	**70**	NS	**8.9**	**72**	**57**	NS	NS	NS	NS	NS	NS
Jun-97	NS	**47**	NS	**8.2**	**44**	**38**	NS	NS	NS	NS	NS	NS
Sep-97	NS	NS	NS	**7**	**41**	**31**	NS	NS	NS	NS	NS	NS
Sep-97	NS	NS	NS	NS	NS	**69**	NS	NS	NS	NS	NS	NS
Dec-97	NS	**31**	NS	**5.6**	**40**	**25**	NS	NS	NS	NS	NS	NS
Mar-98	NS	**33**	NS	4.8	**43**	**19**	NS	NS	NS	NS	NS	NS
Jun-98	NS	**29**	NS	4.8	**36**	**16**	NS	NS	NS	NS	NS	NS
Dec-98	NS	**19**	NS	NS	**16**	**13**	NS	NS	NS	NS	NS	NS
Mar-99	NS	**29**	NS	4.8	**24**	**16**	NS	NS	NS	NS	NS	NS
Nov-00	ND	**12**	NS	NS	NS	NS	ND	ND	2.7	ND	ND	NS
Jan-01	ND	**20**	NS	2.6	**8.6**	2.2	ND	ND	**5.5**	ND	ND	ND
Apr-01	ND	**22**	**13**	3.3	**15**	5	ND	ND	**8.9**	ND	ND	NS
Jul-01	ND	**17**	**11**	ND	**11**	3.2	ND	ND	3.4	ND	ND	NS
Oct-01	ND	**13**	**9.7**	2.2	**6.7**	4.5	ND	ND	3	ND	ND	NS
May-02	NS	**14**	**8.9**	2.4	**12**	NS	ND	1.9	3.5	ND	0.97	NS
Aug-02	NS	**11**	**7.1**	2.5	**13**	3.9	NS	NS	2.9	NS	NS	NS
Oct-02	NS	**11**	**6.6**	2.5	**7.5**	2.9	NS	NS	2.9	NS	NS	NS
Mar-03	NS	**7.5**	4.1	NS	**5.5**	NS	NS	NS	1.9	NS	NS	NS
Jan-04	NS	4.4	NS	2.4	4.9	3.4	ND	2.6	2.7	ND	2.5	NS
Jan-05	NS	NS	NS	0.86	5.1	2.1	ND	1.9	1.4	ND	0.81	NS

School Well = Avondale Elementary School
ND = Not Detected
NS = Not Sampled
All results in micrograms per liter (µg/l)
Bold results exceed AWQS of 5 µg/l

TABLE 5-2
POTENTIAL USERS OF PCE
CITY DIRECTORY SEARCH RESULTS
WESTERN AVENUE WQARF SITE

ADDRESS	City, Zip	COMPANY NAME	COMPANY NAME 2	COMPANY NAME 3	COMPANY NAME 4	COMPANY NAME 5
110 E. Western Avenue	Goodyear, 85338	Out West Printing				
129 E. Western Avenue	Goodyear, 85338	Goodale True Value	Goodyear Auto Clinic	Watkins Motor Co		
14000 W. Yuma Road	Goodyear, 85338	Goodyear Fire Department				
Approximately 1030 S. Litchfield Road	Goodyear, 85338	Ken's Carwash				
1072 S. Litchfield Road	Goodyear, 85338	**Dry Cleaner**				
1084 S. Litchfield Road	Goodyear, 85338	**Goodyear Laundry & Cleaners**				
978 S. Camino Oro Dr.	Goodyear, 85338	Unimast, Inc.	AZ Metal Processing			
1045 S. Camino Oro Dr.	Goodyear, 85338	Custom Auto Detailer				
1146 S. Camino Oro Dr.	Goodyear, 85338	Goodyear Equipment City	Jerry's Auto			
201 N. Camino Oro (also see 1045 S. Camino Oro)	Goodyear, 85338	Custom Auto Detailer				
110 E. Western Avenue	Avondale, 85323	Out West Printing				
111 E. Western Avenue	Avondale, 85323	Litchfield Construction Co./Litchfield Electric	Westsider Newspaper			
206 E. Western Avenue	Avondale, 85323	Carnes Automotive Repair Shop	Slims Mobil Serv	Lauer Service Stat		
207 E. Western Avenue	Avondale, 85323	**Avondale City Cleaners**				
214 E. Western Avenue	Avondale, 85323	Michael's Custom Woodworks/Salcedo Design	Avondale Electric Service			
215 E. Western Avenue	Avondale, 85323	Rod Shop Customs	Avondale Motor Co.			
322 E. Western Avenue	Avondale, 85323	**Briteway Laundry**	**Peacock Laundromat**			
401 E. Western Avenue	Avondale, 85323	Betts Enterprises				
404 E. Western Avenue	Avondale, 85323	**Quinn Cleaners**				
528 E. Western Avenue	Avondale, 85323	J&S Precision				
604 E. Western Avenue	Avondale, 85323	Westside Taxi Servc & AB Amusements				
610 E. Western Avenue	Avondale, 85323	Stans Chevron Service	Rygiel Stan & Sons Chevron Station			
617 E. Western Avenue	Avondale, 85323	Avondale Auto	AZ Serv. Station & Fernandez Garage			

Note:
Bold: Used to identify name of former drycleaner.
PCE = Tetrachloroethene
WQARF: Water Quality Assurance Revolving Fund

TABLE 5-2
POTENTIAL USERS OF PCE
CITY DIRECTORY SEARCH RESULTS
WESTERN AVENUE WQARF SITE

ADDRESS	City, Zip	COMPANY NAME	COMPANY NAME 2	COMPANY NAME 3	COMPANY NAME 4	COMPANY NAME 5
700 E. Western Avenue	Avondale, 85323	Stan's Chevron Station				
706 E. Western Avenue	Avondale, 85323	Avondale Safety Services	Spears Safety Services	Riefkohl Safety Srv		
707 E. Western Avenue	Avondale, 85323	W. Valley Signs & Designs				
710 E. Western Avenue	Avondale, 85323	Avondale 66 Serv	Chet's Service	Rightlys Service	Spears Mobil Service	
722 E. Western Avenue	Avondale, 85323	ASC Parts/Avondale Service Center/Sonshine	ASC Parts/Avondale Service Center/Sonshine			
730 E. Western Avenue	Avondale, 85323	Fowlers Garage & Service.				
810 E. Western Avenue	Avondale, 85323	EZ Towing/Estrella Mountain Automotive/Ryder Truck Rental				
102 W. Western Avenue	Avondale, 85323	Union Oil Station				
214 W. Western Avenue	Avondale, 85323	Estrella Golf Carts				
216 W. Western Avenue	Avondale, 85323	Gill Joe Enterprises	**Western Cleaners**			
218 W. Western Avenue	Avondale, 85323	Work-N-Fun Carts	Estrella Golf Carts	**Western Dry Cleaners**		
208 W. Western Avenue	Avondale, 85323	Sessions Serv & Garage	Ludlow Garage & Flying A Service.			
238 W. Western Avenue	Avondale, 85323	Sessions Tire & Auto Service/AZ Golf Cart Co.	Sessions Garage	Session Brothers Repair		
300 W. Western Avenue	Avondale, 85323	Sunset Self Service	Various Chevron Stations	**Western Dry Cleaners**		
32 N. Dysart Road (also N. 8th St.	Avondale, 85323	Westside Transmission				
200 N. Dysart	Avondale, 85323	Avondale Motorama				
310 N. Dysart Road	Avondale, 85323	USA Motorsports				
210 N. Central Avenue	Avondale, 85323	J&L Golf Cars/USA Collisions/West Valley Collision				
215 E. Main St	Avondale, 85323	Tom's Radiator Shop	Tom & Andy's Welding Shop	Childers Radiator Shop	Bill's Radiator Shop	Kirby & Jordans Garage
604 E. Main St	Avondale, 85323	Rhodes Automotive				
702 E. Main St	Avondale, 85323	Custom Woodwork				

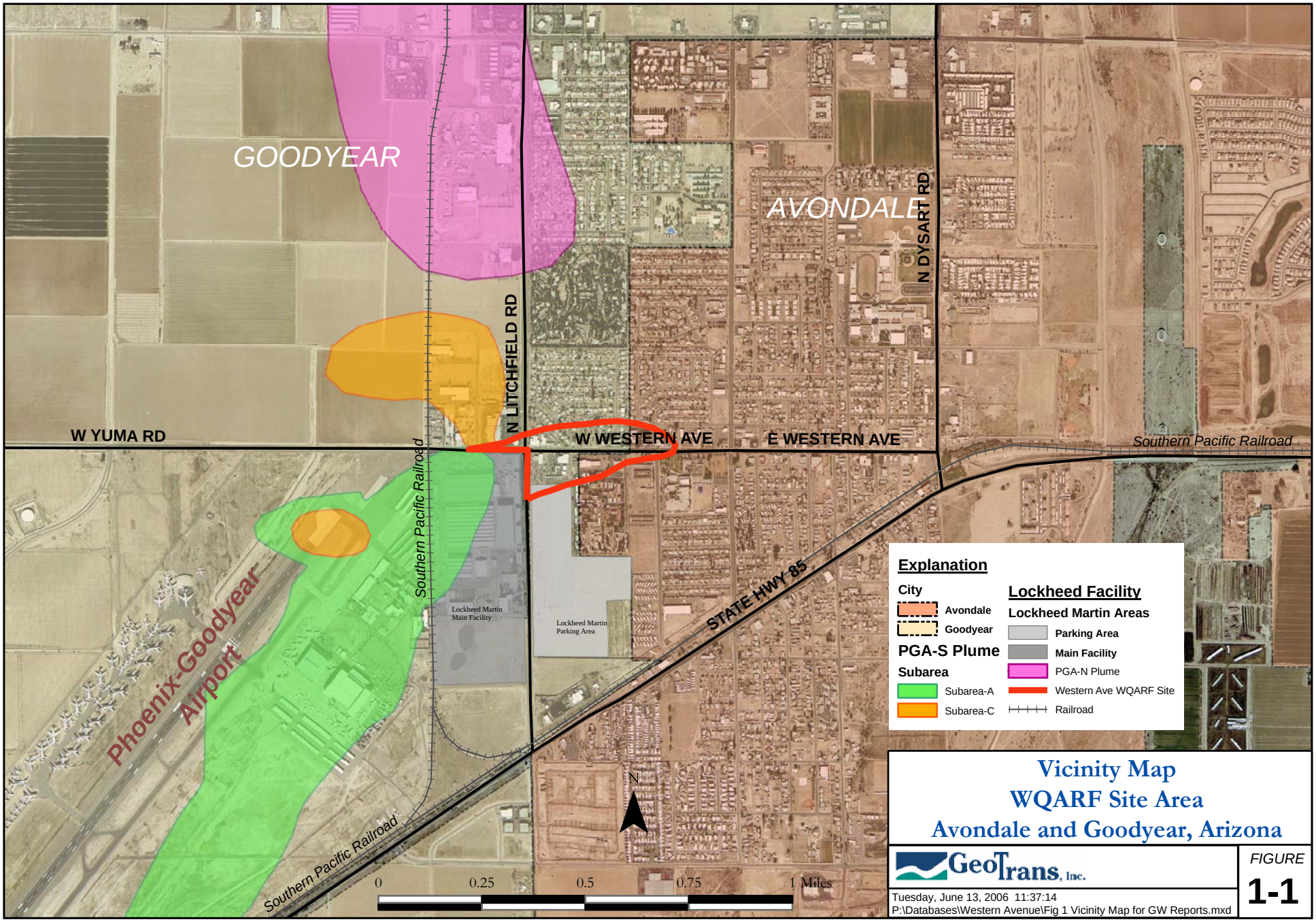
Note:
Bold: Used to identify name of former drycleaner.
PCE = Tetrachloroethene
WQARF: Water Quality Assurance Revolving Fund

TABLE 5-2
POTENTIAL USERS OF PCE
CITY DIRECTORY SEARCH RESULTS
WESTERN AVENUE WQARF SITE

ADDRESS	City, Zip	COMPANY NAME	COMPANY NAME 2	COMPANY NAME 3	COMPANY NAME 4	COMPANY NAME 5
722 E. Main St	Avondale, 85323	Latino Auto Repair	Romero's Cabinet Shop			
742 E. Main St	Avondale, 85323	Vern Lewis Welding Supply				
748 E. Main St	Avondale, 85323	Tom, Dick, & Harry's Service Station & Café				
2 W. Main St		Crawford's Combat Service Station	Sunset Service Station			
10 W. Main St	Avondale, 85323	Woody's Tires				
121 W. Main Street	Avondale, 85323	Malco Service Station				
45 S. 3rd Ave	Avondale, 85323	Avondale Elementary School				
439 S. 3rd Ave	Avondale, 85323	Field Lining Systems	Deena Inc.	Beam Corp	Avondale Electrical Service	
3 S. 4th St.	Avondale, 85323	Porters Mower Service				
1 N. 8th Street	Avondale, 85323	Arizona Aircraft Parts	Aero Tech Inc	Normandie Iron & Metal		

Note:
Bold: Used to identify name of former drycleaner.
PCE = Tetrachloroethene
WQARF: Water Quality Assurance Revolving Fund

TABLE 5-3 - POTENTIAL SOURCE AREAS		
RELATIVE PRIORITY	**FACILITY NAME**	**FACILITY ADDRESS (Approximate years of Operation)**
1	Western Dry Cleaners	216 West Western Avenue (1959-1961)
1	Western Dry Cleaners	218 West Western Avenue (1962-1985)
1	Avondale City Cleaners	207 East Western Avenue (1959-1972)
2	Quinn Cleaners	404 East Western Avenue (1957-1961)
3	Goodyear Dry Cleaners	1084 South Litchfield Road (1995-2000)
3	Unknown Dry Cleaners	1072 South Litchfield Road (2001-2002)

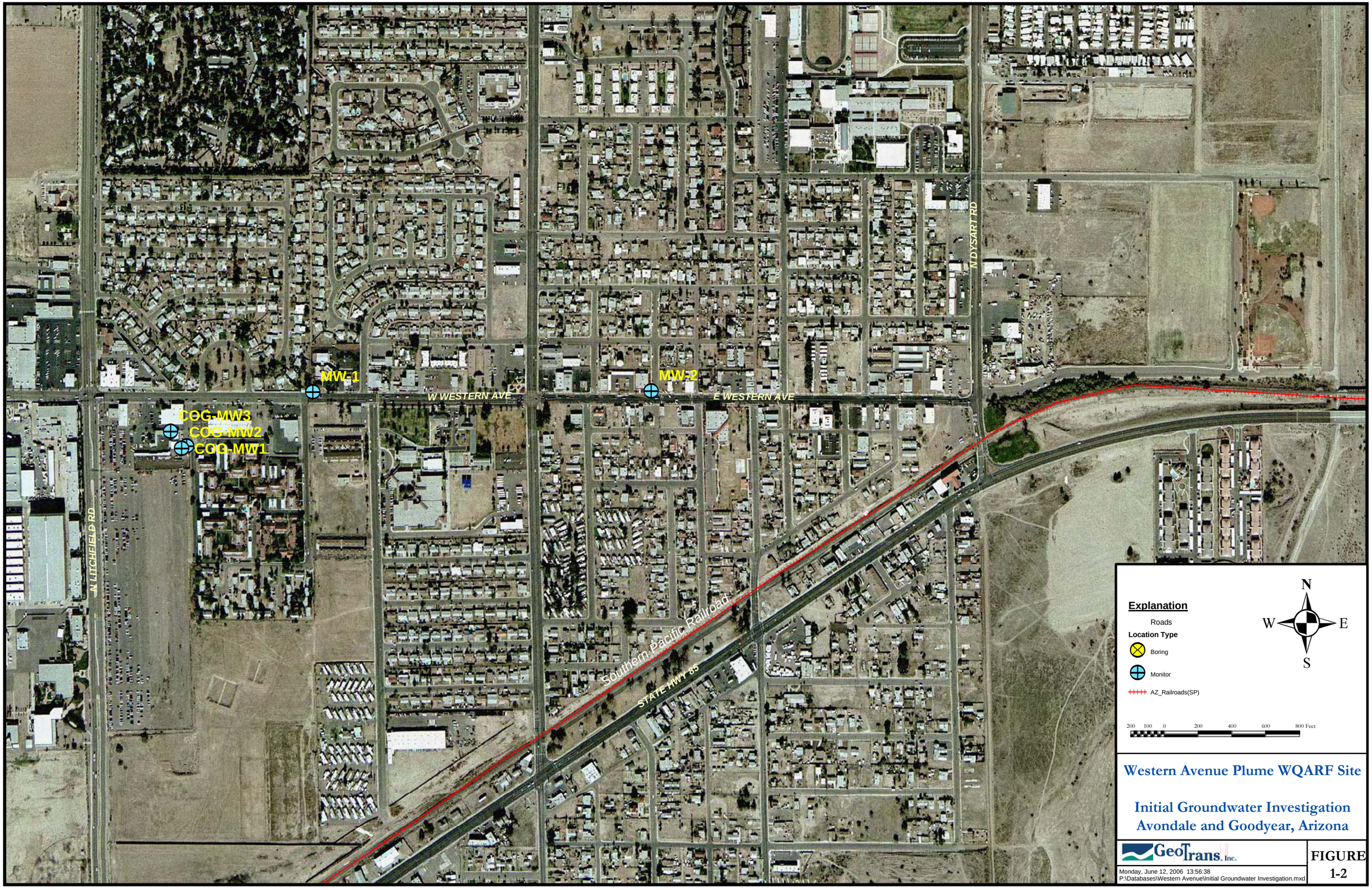


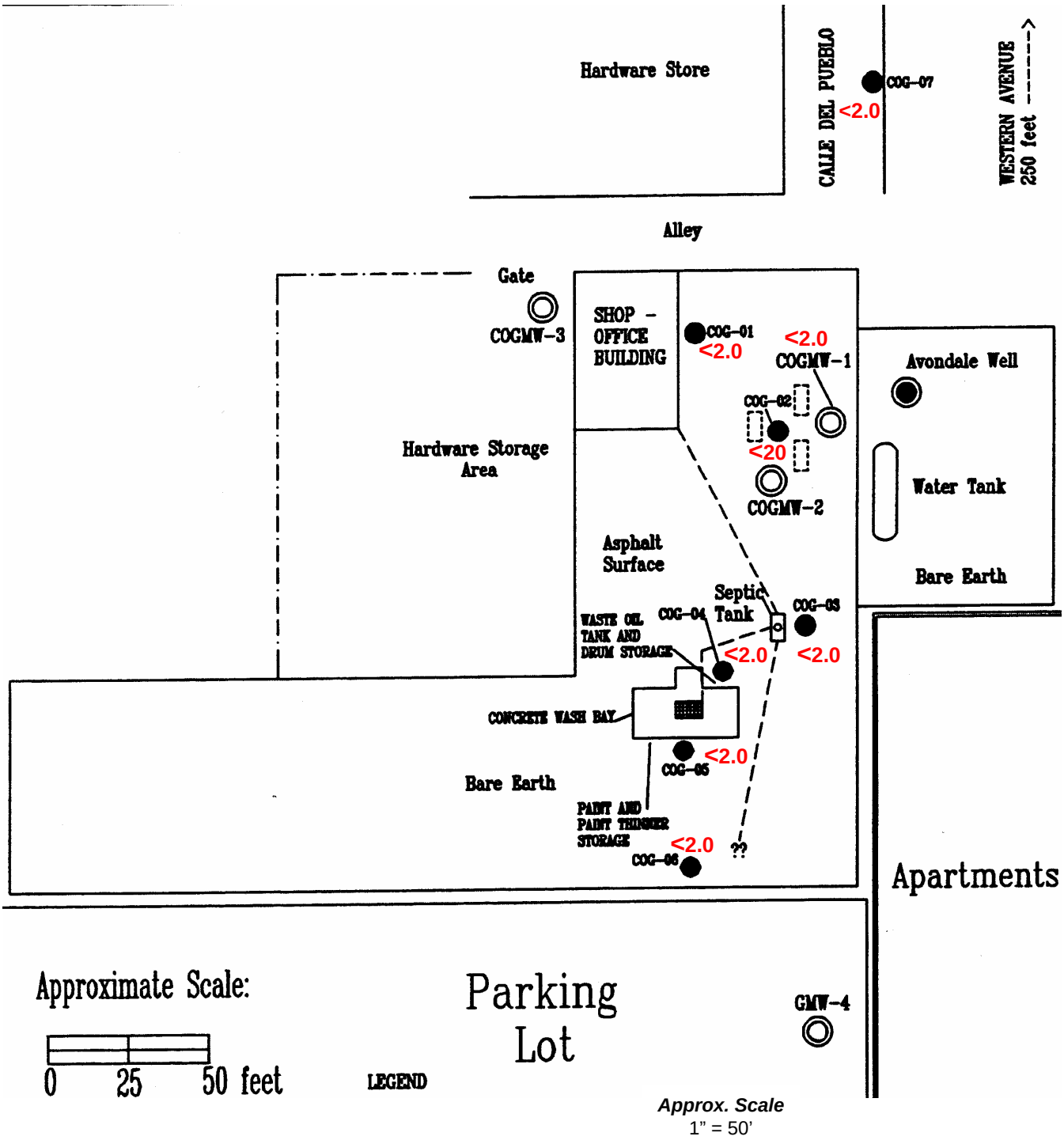
Vicinity Map
WQARF Site Area
Avondale and Goodyear, Arizona

GeoTrans, Inc.

Tuesday, June 13, 2006 11:37:14
P:\Databases\Western Avenue\Fig 1 Vicinity Map for GW Reports.mxd

FIGURE
1-1


MW-1
MW-2
COG-MW3
COG-MW2
COG-MW1
W WESTERN AVE
E WESTERN AVE
N DYSART RD
N LITCHFIELD RD
Southern Pacific Railroad
STATE HWY 85
Explanation
Roads
Location Type
Boring
Monitor
AZ_Railroads(SP)
N
W
E
S
200 100 0 200 400 600 800 Feet
Western Avenue Plume WQARF Site
Initial Groundwater Investigation
Avondale and Goodyear, Arizona
GeoTrans, Inc.
Monday, June 12, 2006 13:56:38
P:\Databases\Western Avenue\Initial Groundwater Investigation.mxd
FIGURE
1-2



COG-01 Soil/Soil Gas Sample Location

<2.0 Results in Micrograms per liter

PCE = Tetrachloroethene

TITLE: **MARCH 1995 PCE SOIL VAPOR SAMPLES**
City of Goodyear Public Works Site
Western Avenue Plume WQARF Site

LOCATION: **200 South Calle Del Pueblo**
Goodyear, Arizona 85338

GeoTrans, Inc.

CHECKED:	
DRAFTED:	P. Plato
PROJ.:	1303.016.03
DATE:	06/30/05

FIGURE: **2-1**

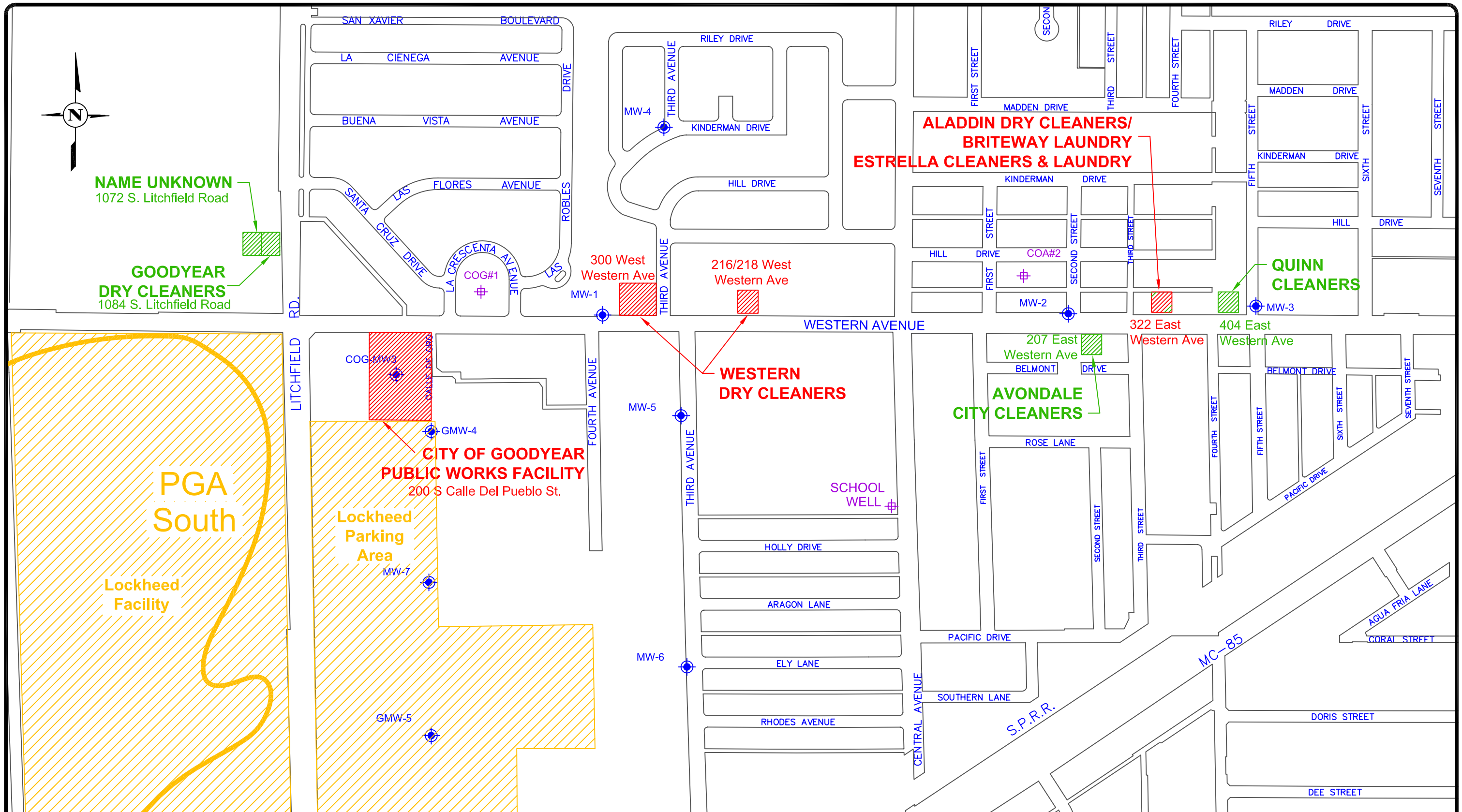
Locations of Monitor Wells
Western Avenue Plume WQARF Site
Avondale and Goodyear, Arizona

GeoTrans, Inc.

June 29, 2005

FIGURE 2-2

Fig 3 Monitor Wells.mxd



EXPLANATION

- SUBUNIT A MONITOR WELL
- PRODUCTION WELL
- KNOWN HISTORICAL DRY CLEANER LOCATION
- PA/SI INVESTIGATION COMPLETED

0 400 800

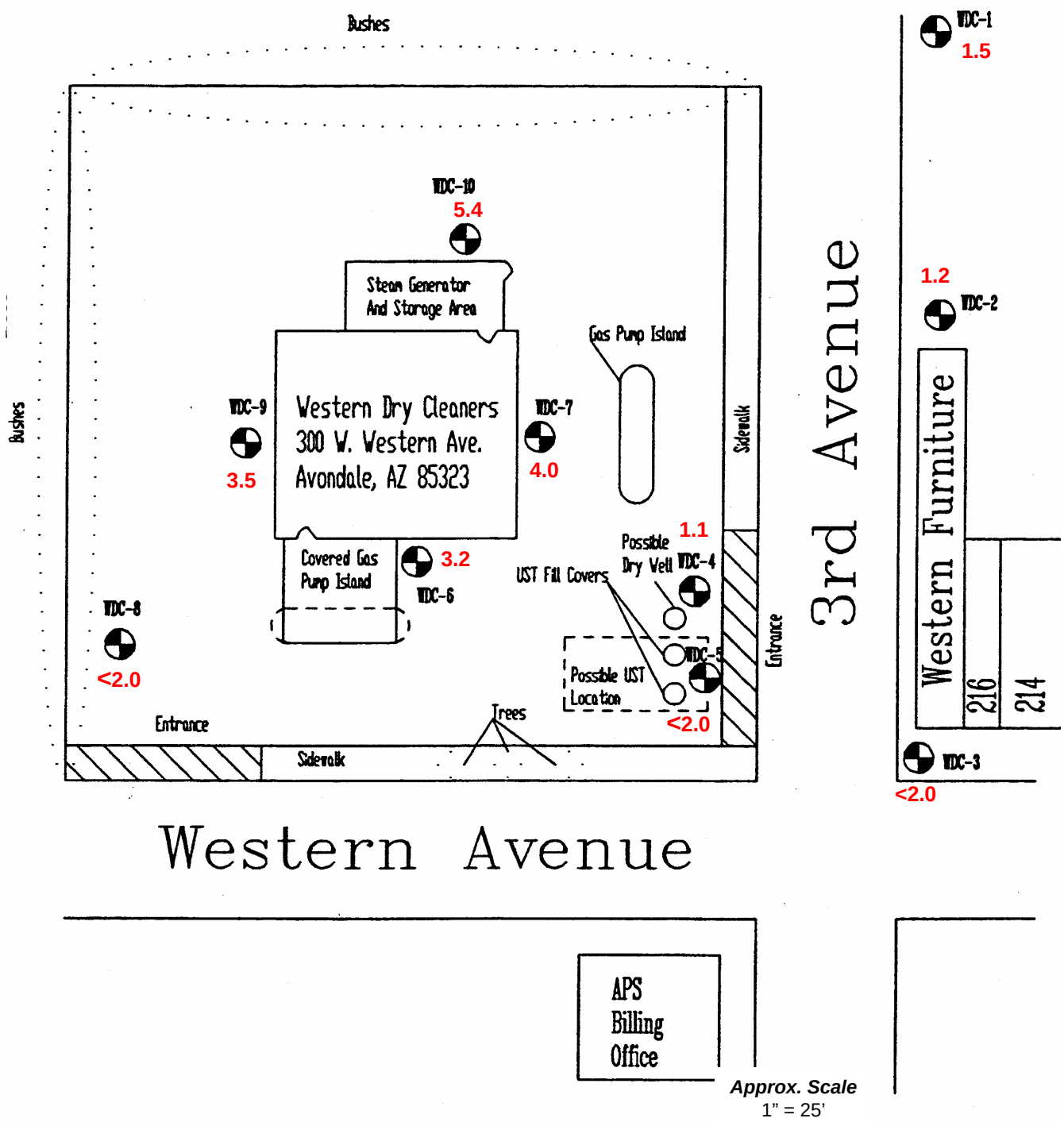
APPROXIMATE SCALE IN FEET

TITLE: LOCATION OF PA/SI INVESTIGATIONS AND OTHER HISTORICAL DRY CLEANER LOCATIONS

LOCATION: WESTERN AVENUE WQARF SITE

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	PRP	FIGURE
DRAFTED	PRP	2-3
PROJECT	1303.010.03	
DATE	6/30/05	



WDC-2 Soil/Soil Gas Sample Location

<2.0 Results in Micrograms per liter

PCE = Tetrachloroethene

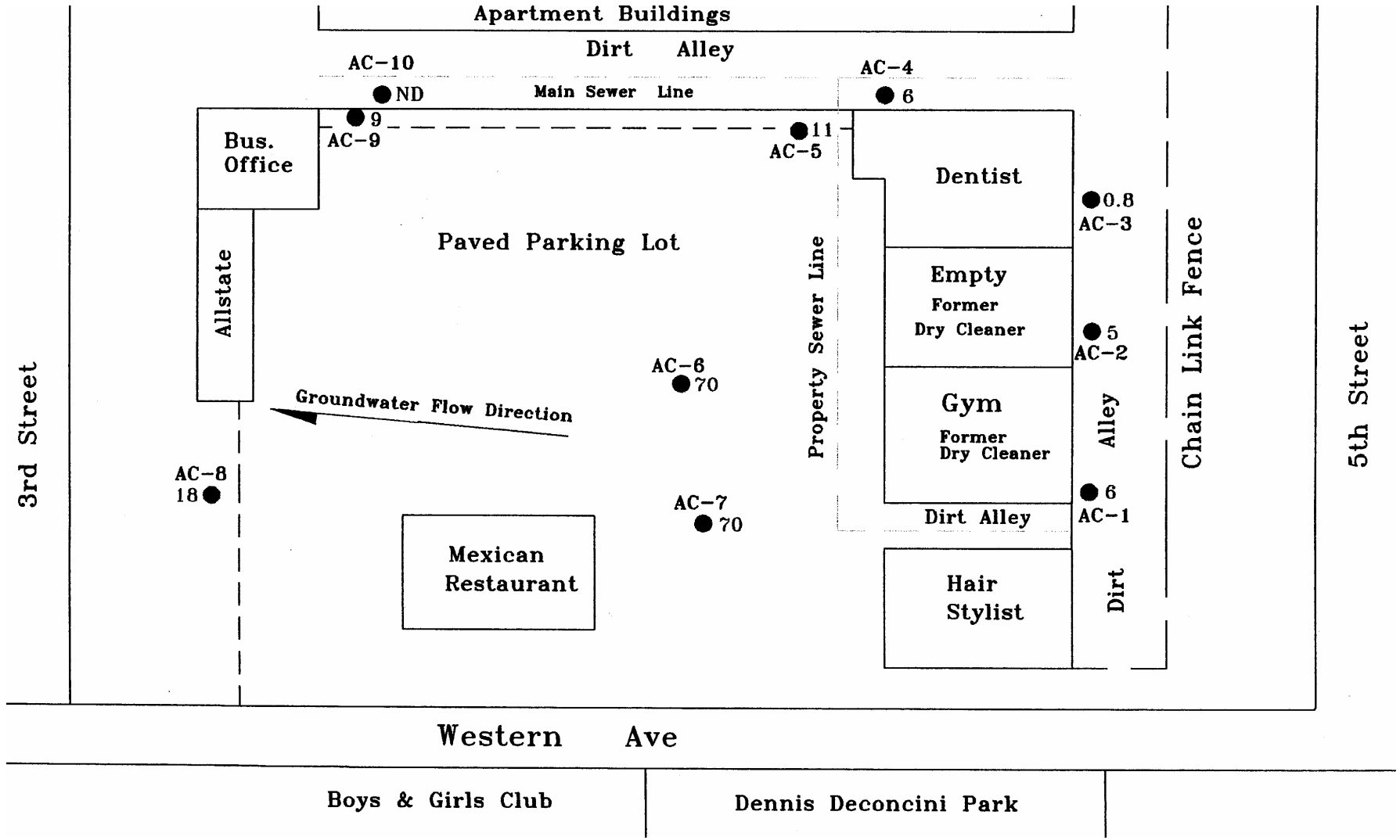
TITLE: **MARCH 1995 PCE SOIL VAPOR SAMPLES**
WESTERN DRY CLEANERS
Western Avenue Plume WQARF Site

LOCATION: **300 West Western Avenue**
Avondale, Arizona 85323

GeoTrans, Inc.

CHECKED:	
DRAFTED:	P. Plato
PROJ.:	1303.016.03
DATE:	06/30/05

FIGURE: **2-4**



AC-7
70
Soil/Soil Gas Sample Location

Samples collected by ADEQ PASI Program
Soil Vapor results are micrograms per liter
All soil samples less than method detection limit for PCE

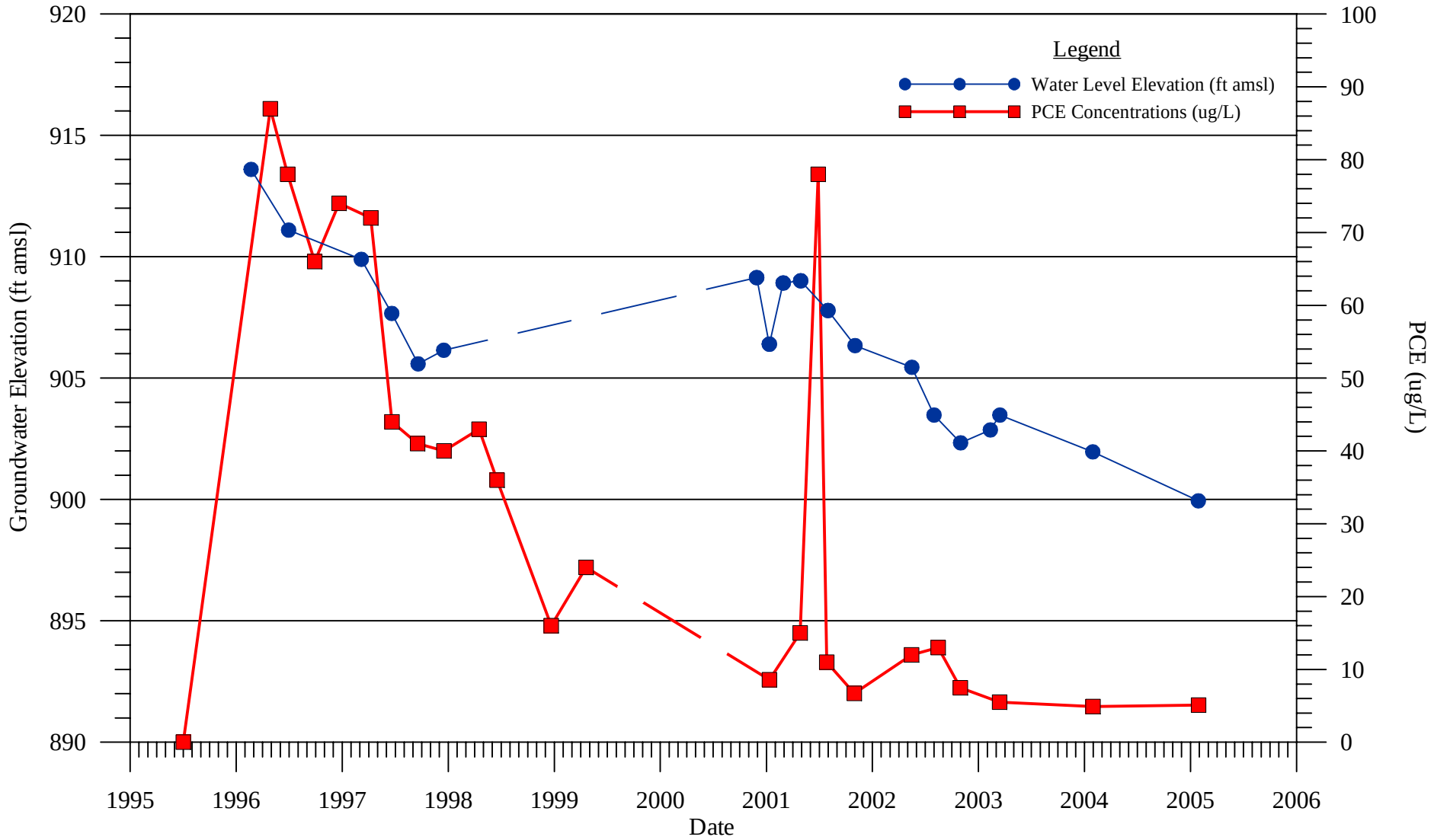
TITLE: **AUGUST 2001 PCE SOIL VAPOR SAMPLES**
ALADDIN DRY CLEANERS
Western Avenue Plume WQARF Site

LOCATION: **322 East Western Avenue, Avondale, Arizona**

GeoTrans, Inc.

CHECKED:	P. Plato
DRAFTED:	
PROJ.:	1303.016.03
DATE:	06/30/05

FIGURE: **2-5**



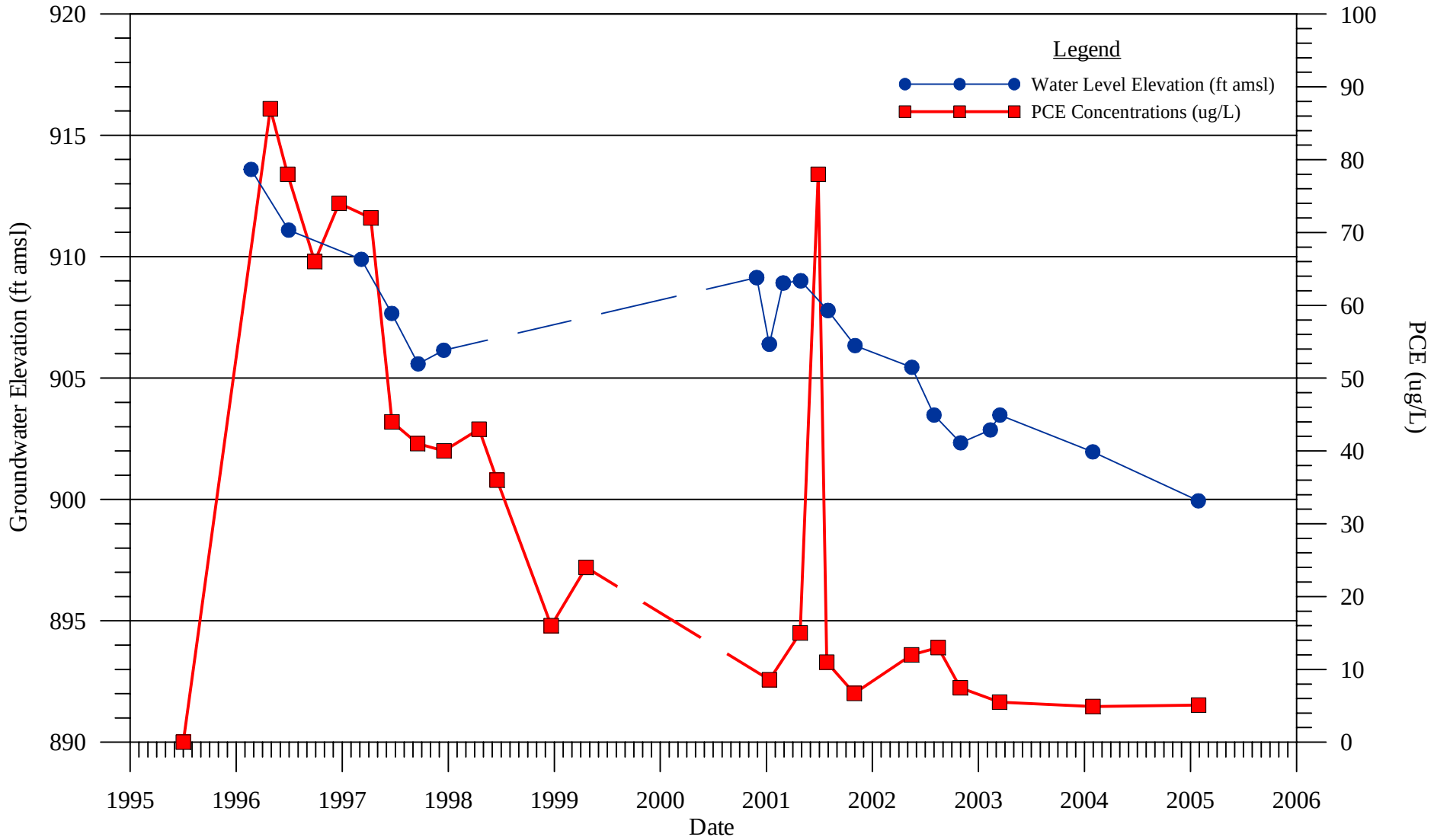
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-1 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-1



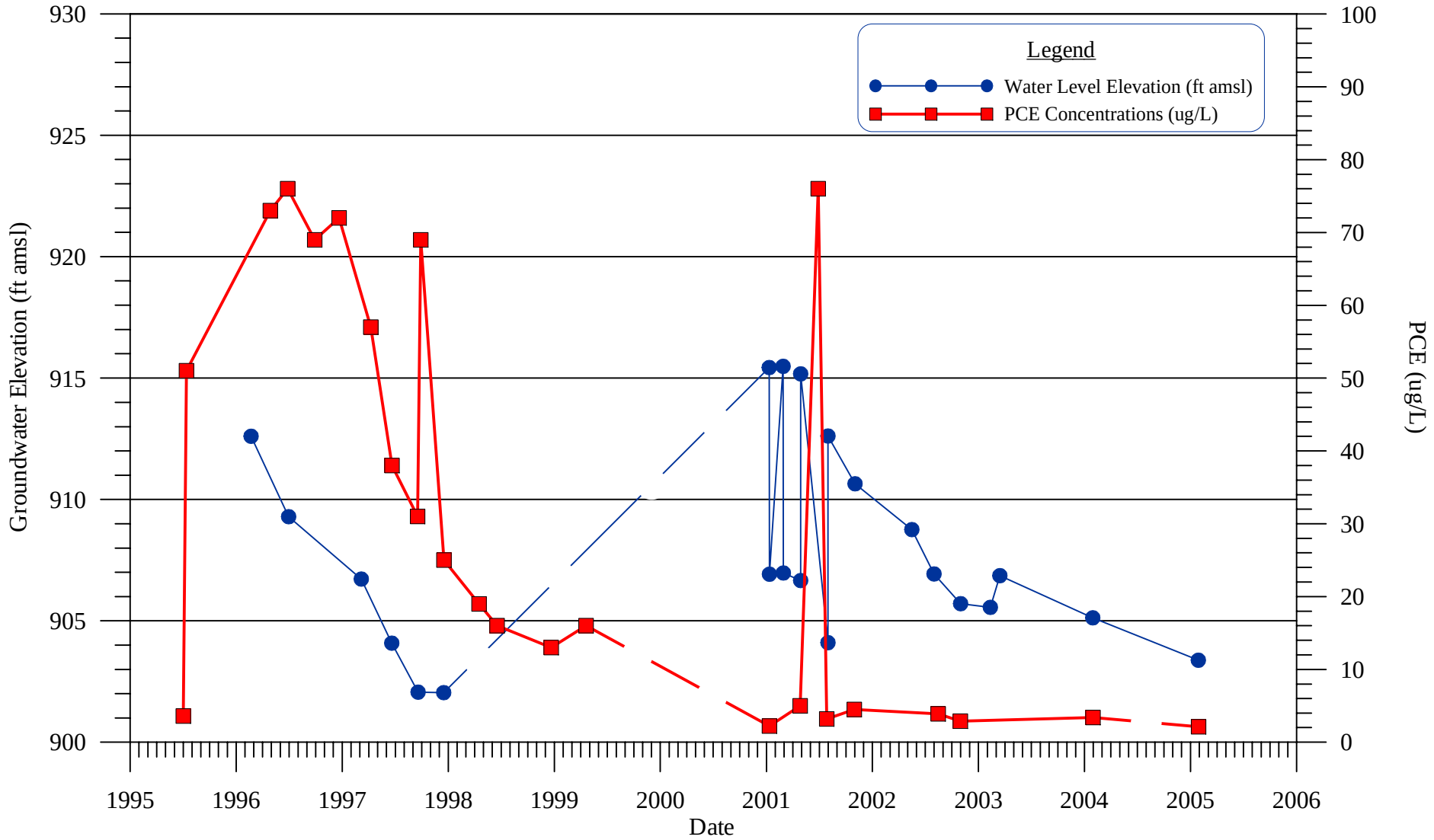
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-1 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-1



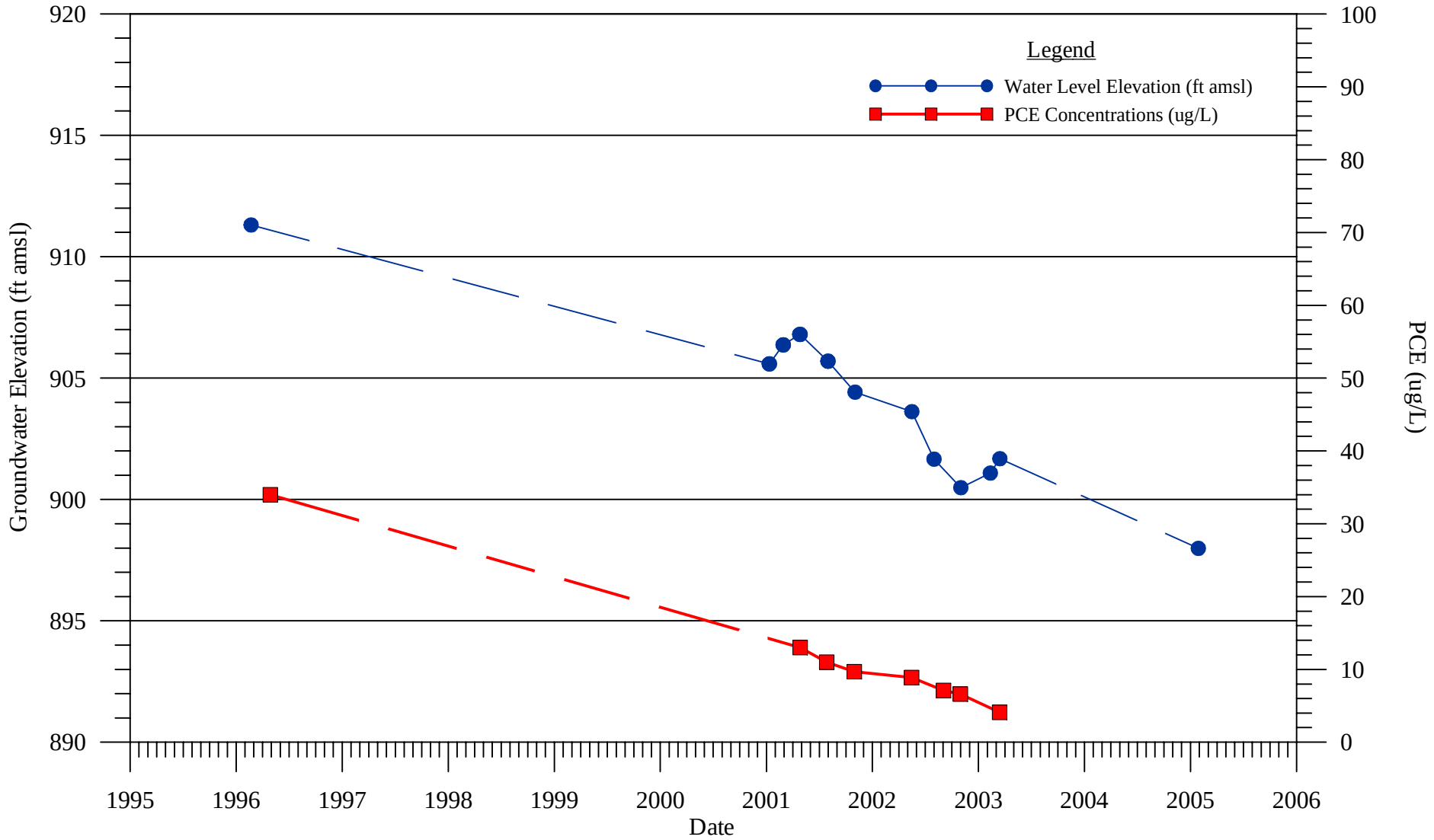
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-2 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-2



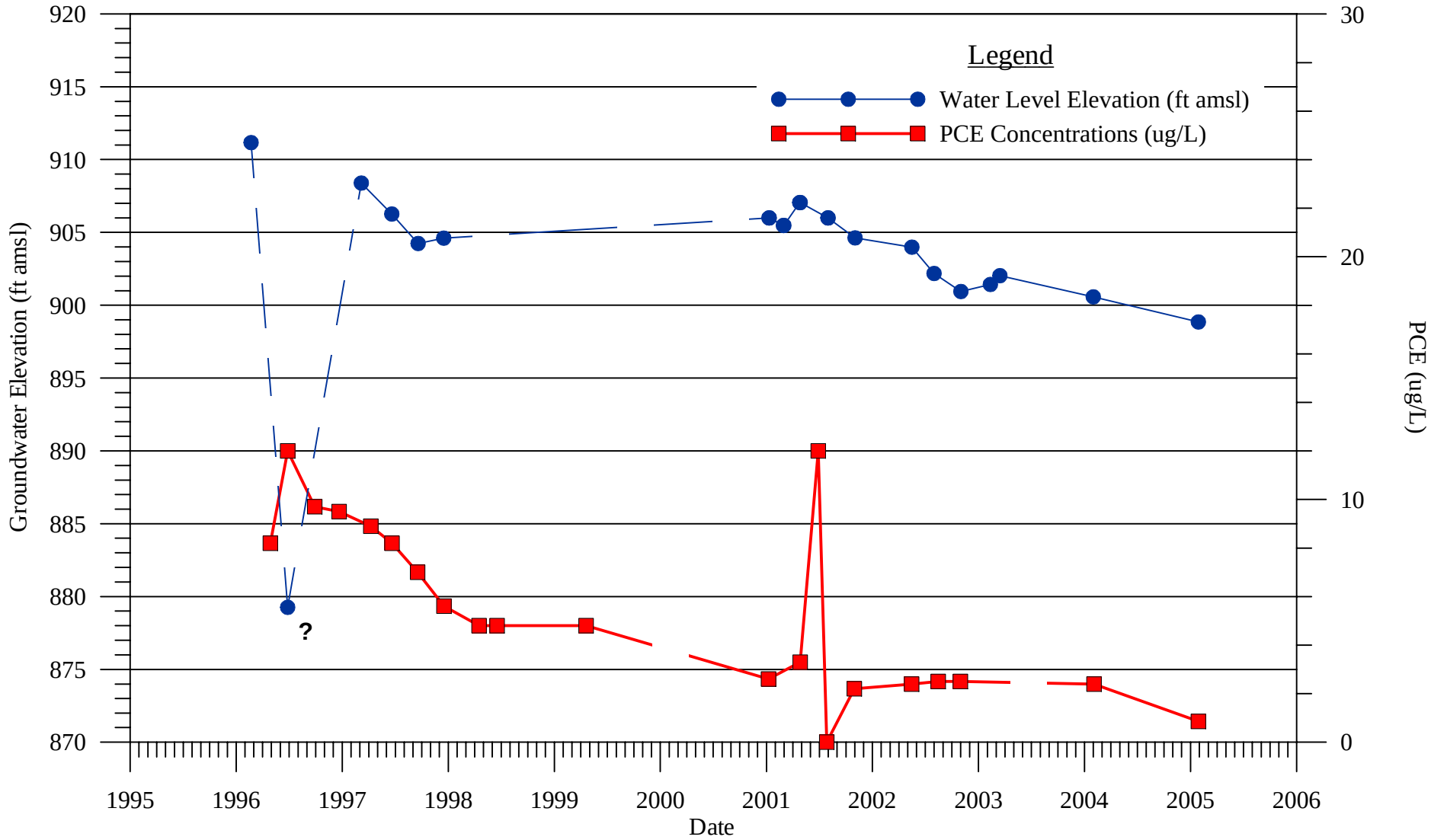
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

GMW-4 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-3



? : May Represent Erroneous Data

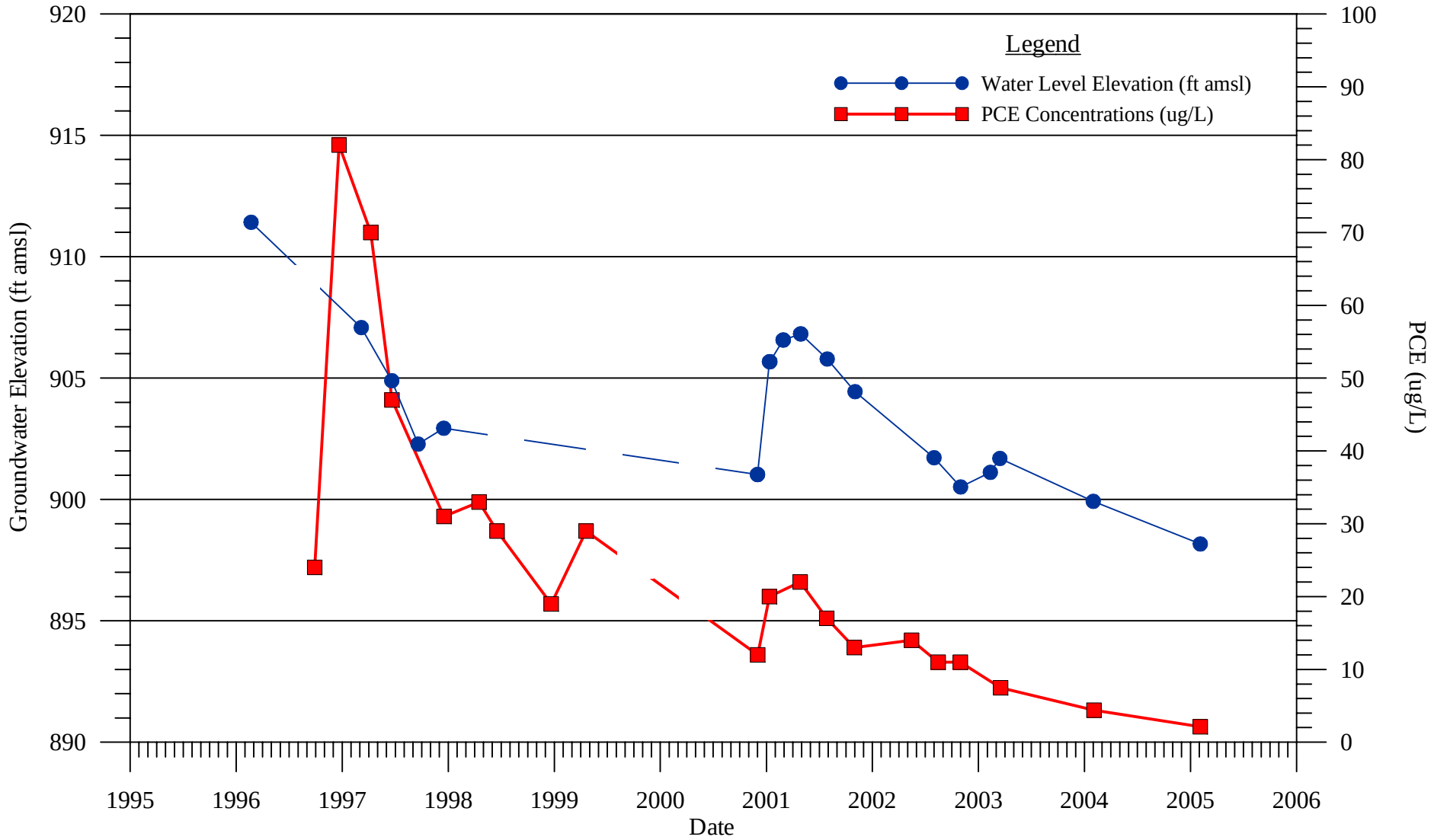
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

GMW-5 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-4



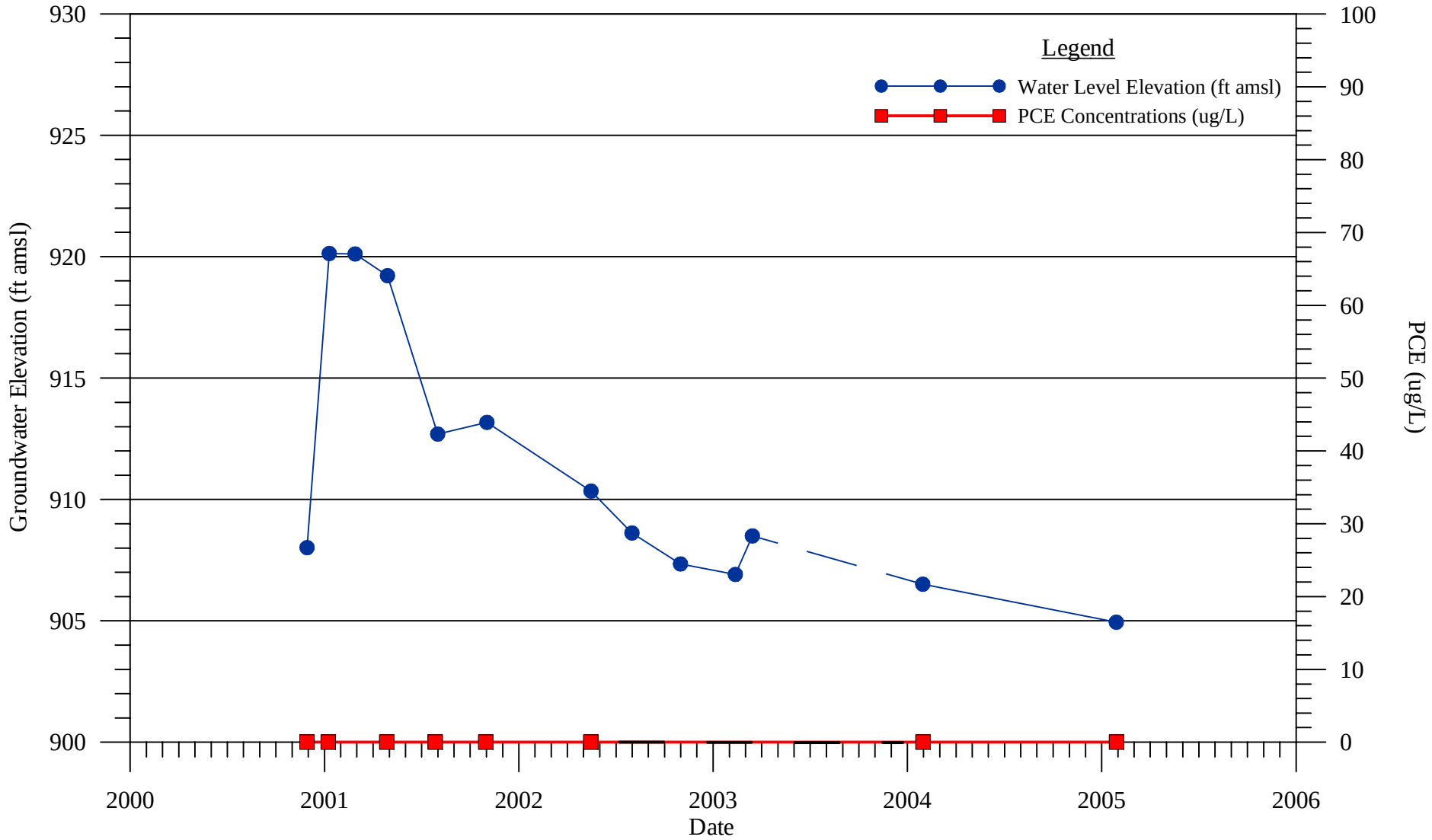
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

COG-MW3 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-5



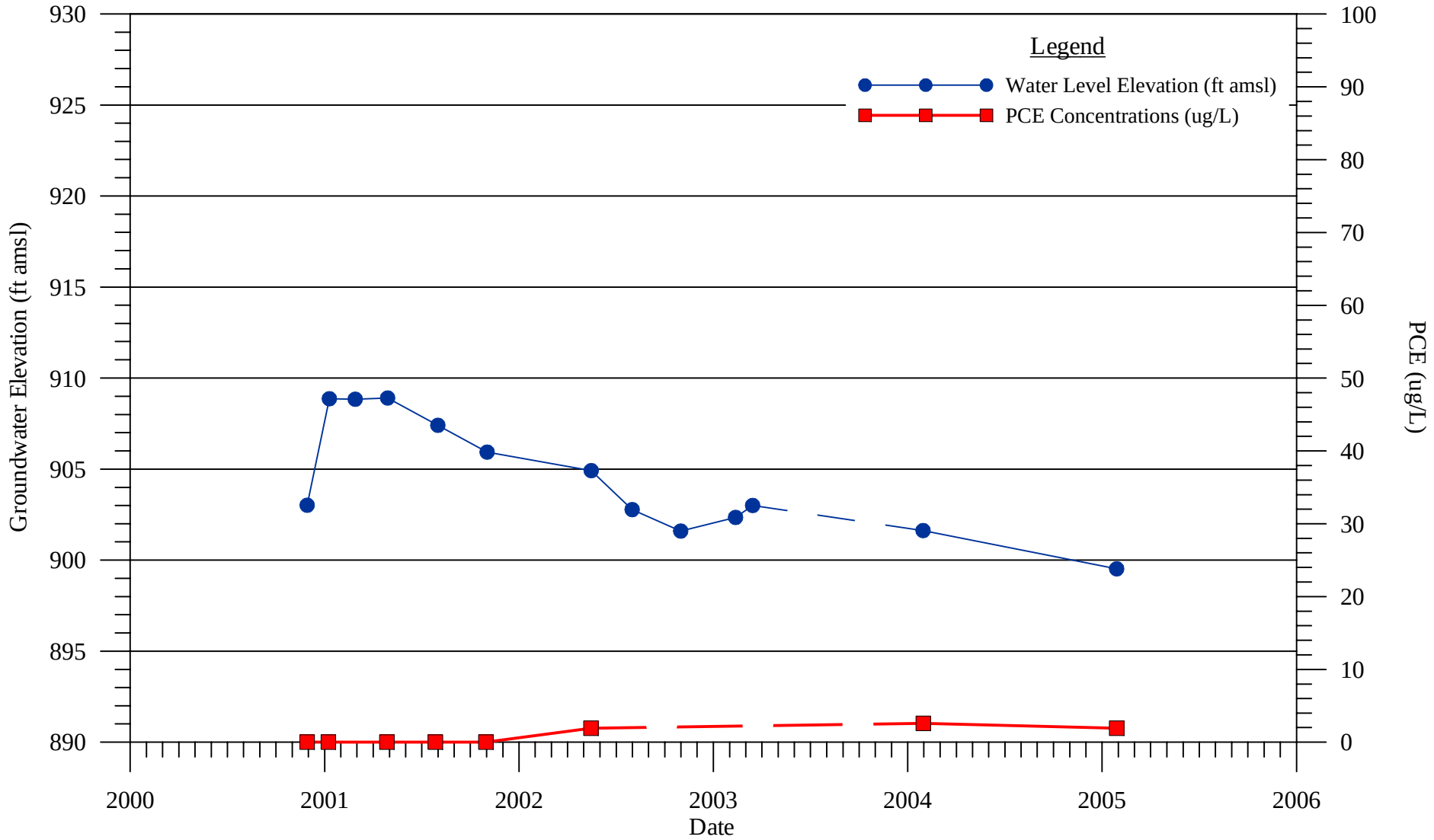
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-3 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-6



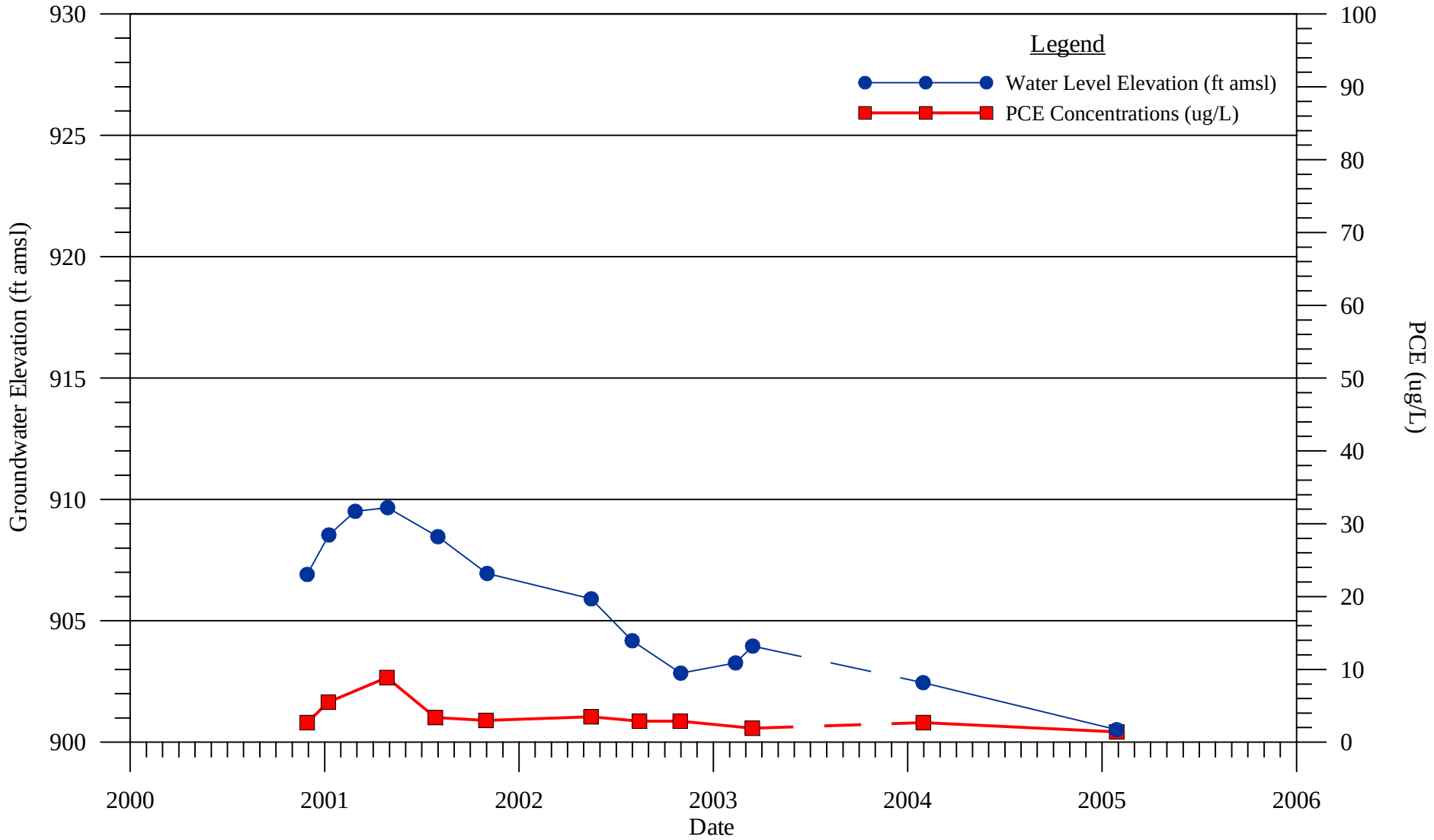
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-4 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-7



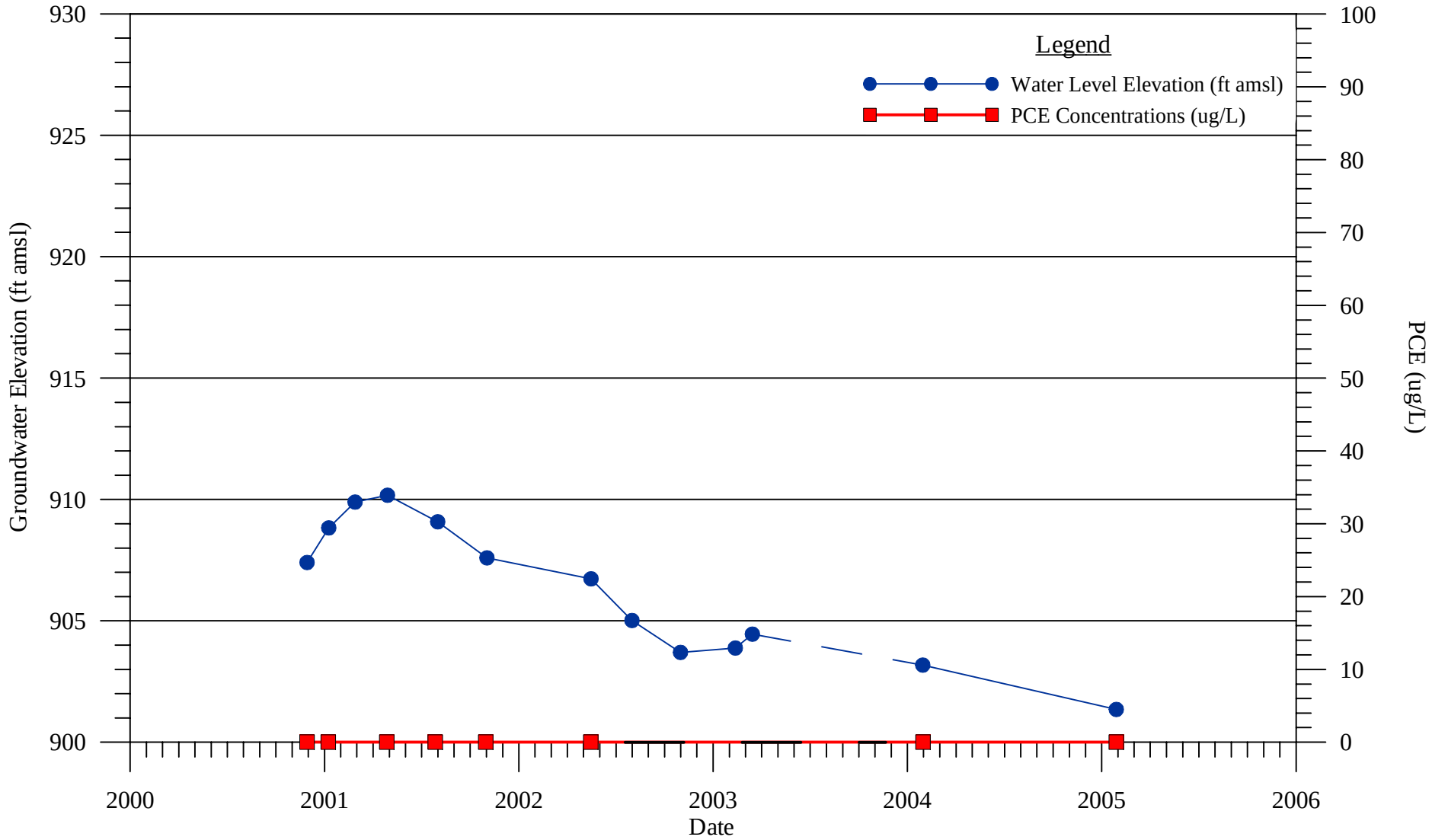
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-5 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-8



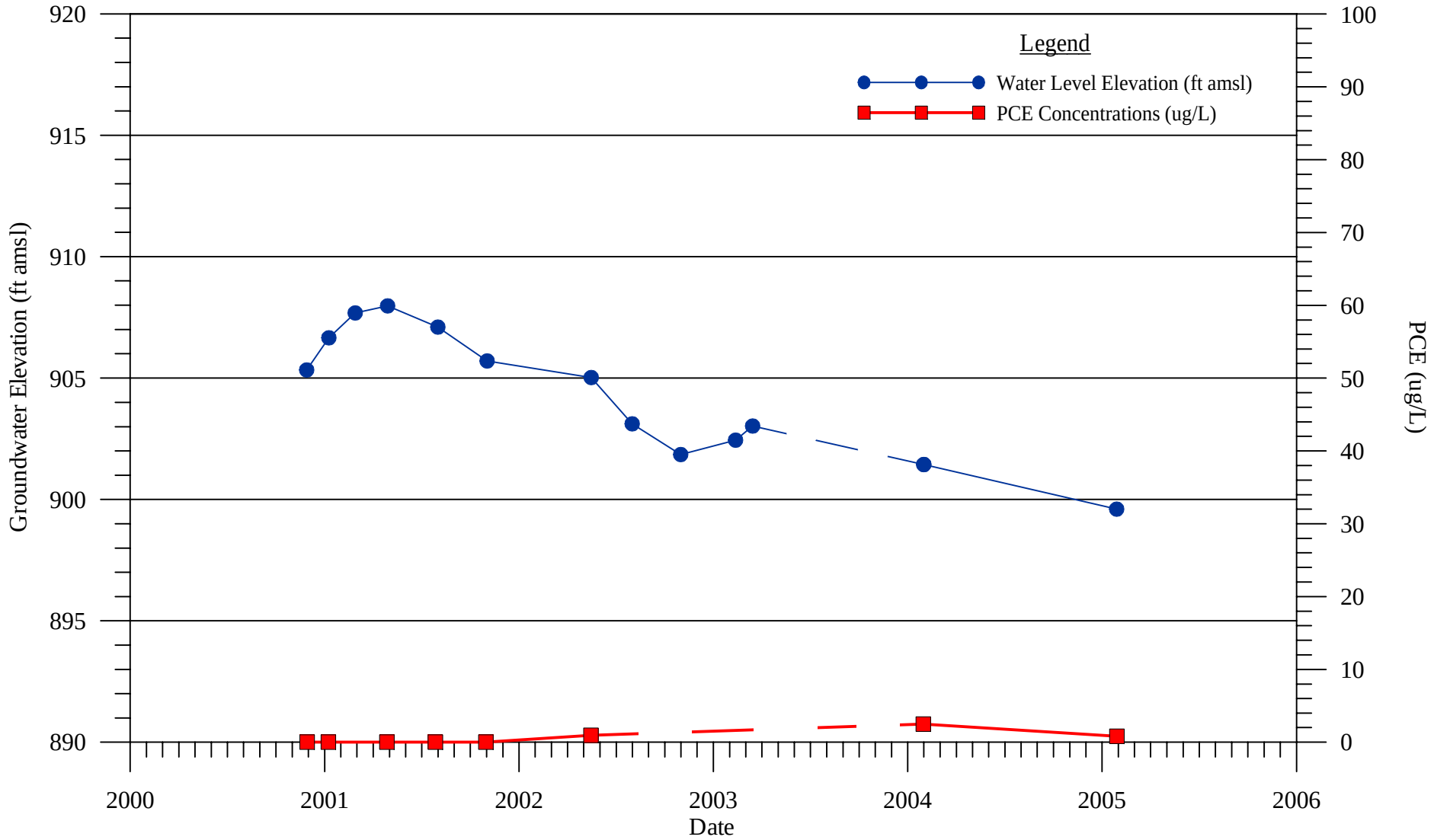
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

GeoTrans, Inc.

MW-6 Water Level Elevations and PCE Concentrations

Western Avenue WQARF Site
Avondale, Arizona

Figure 3-9



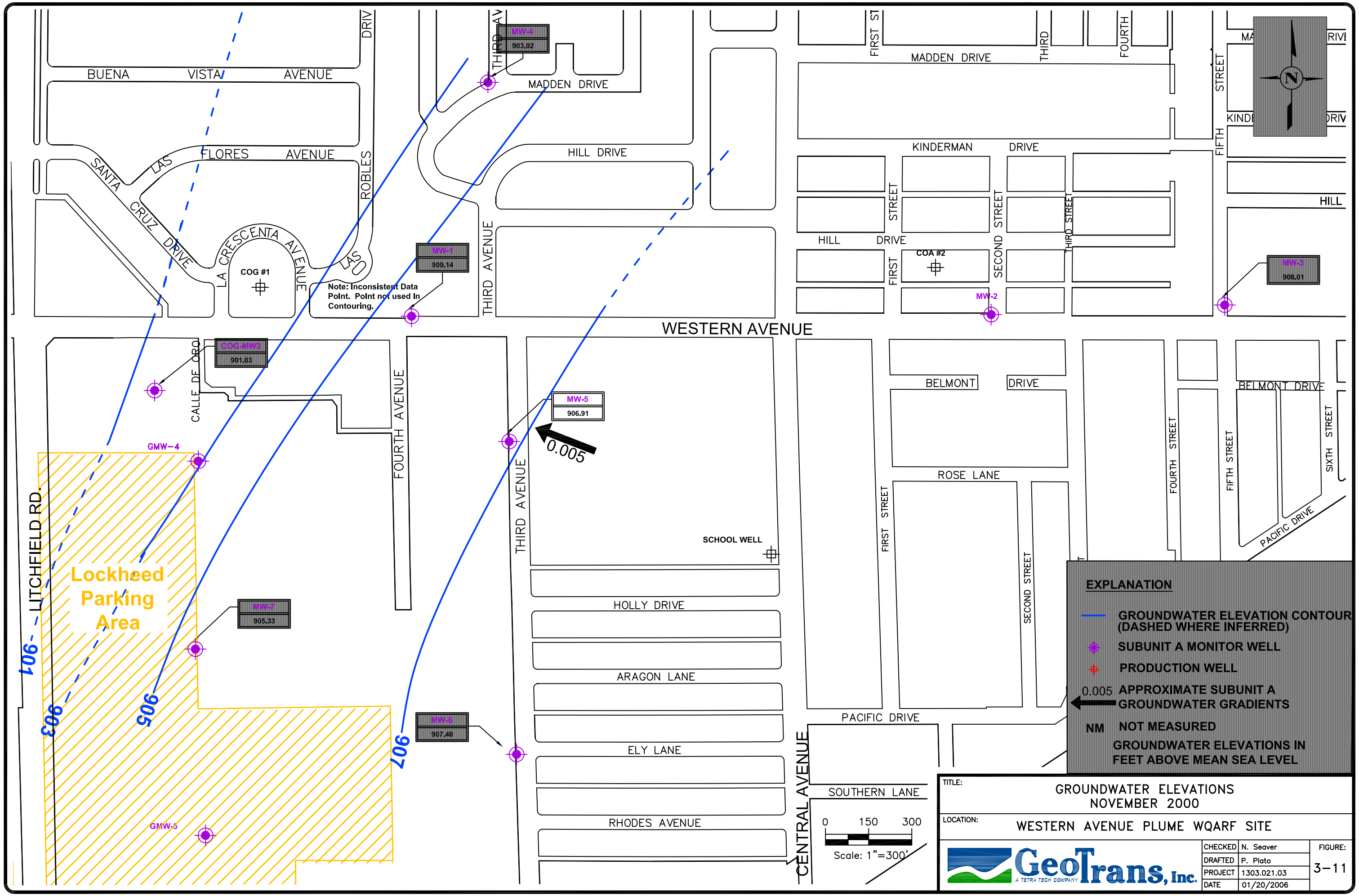
path: P:/WPFILES/1303.021 Western Ave/Revised Figs/ | art: Gutmann | checked: Plato

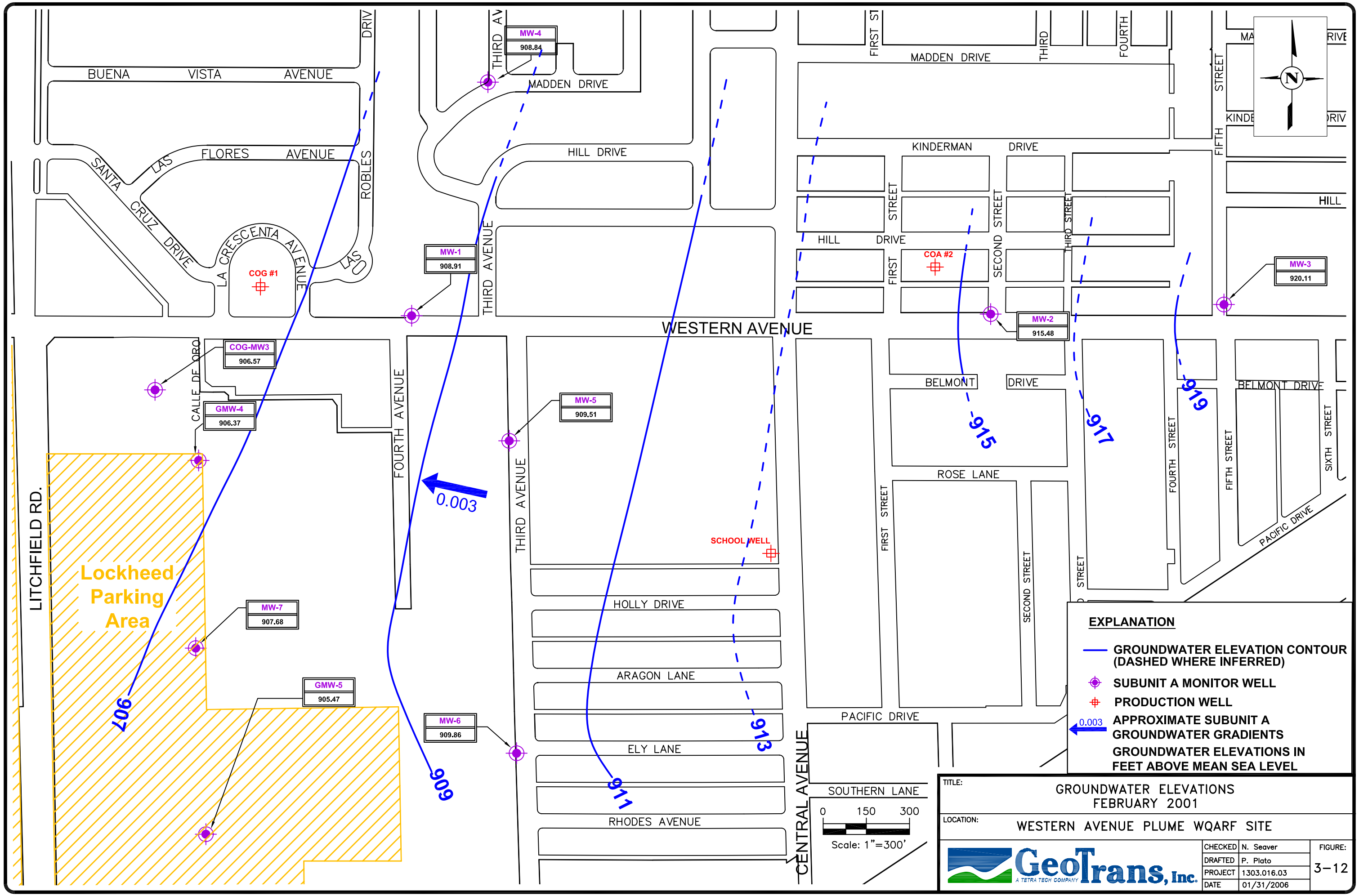
GeoTrans, Inc.

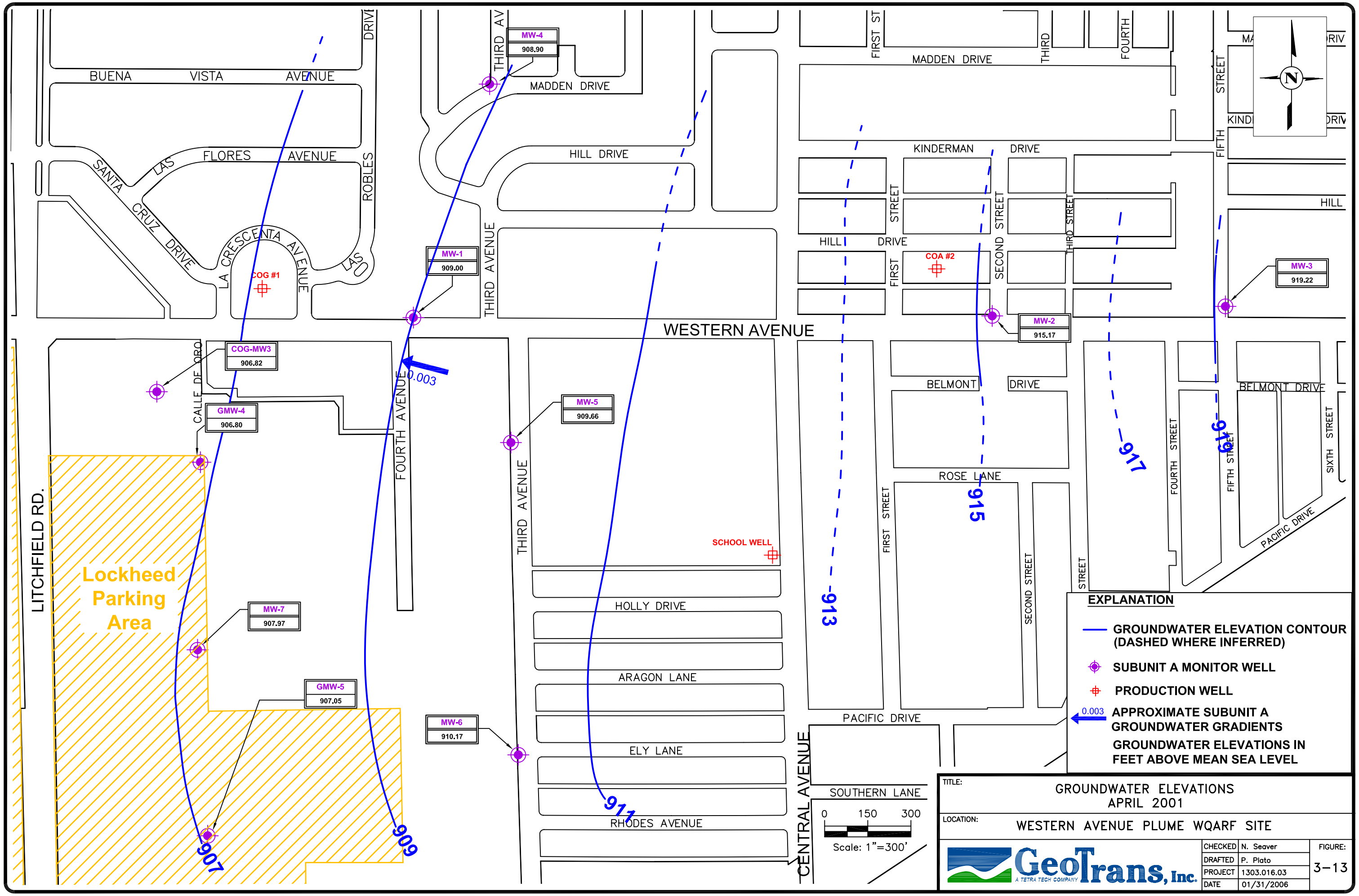
MW-7 Water Level Elevations and PCE Concentrations

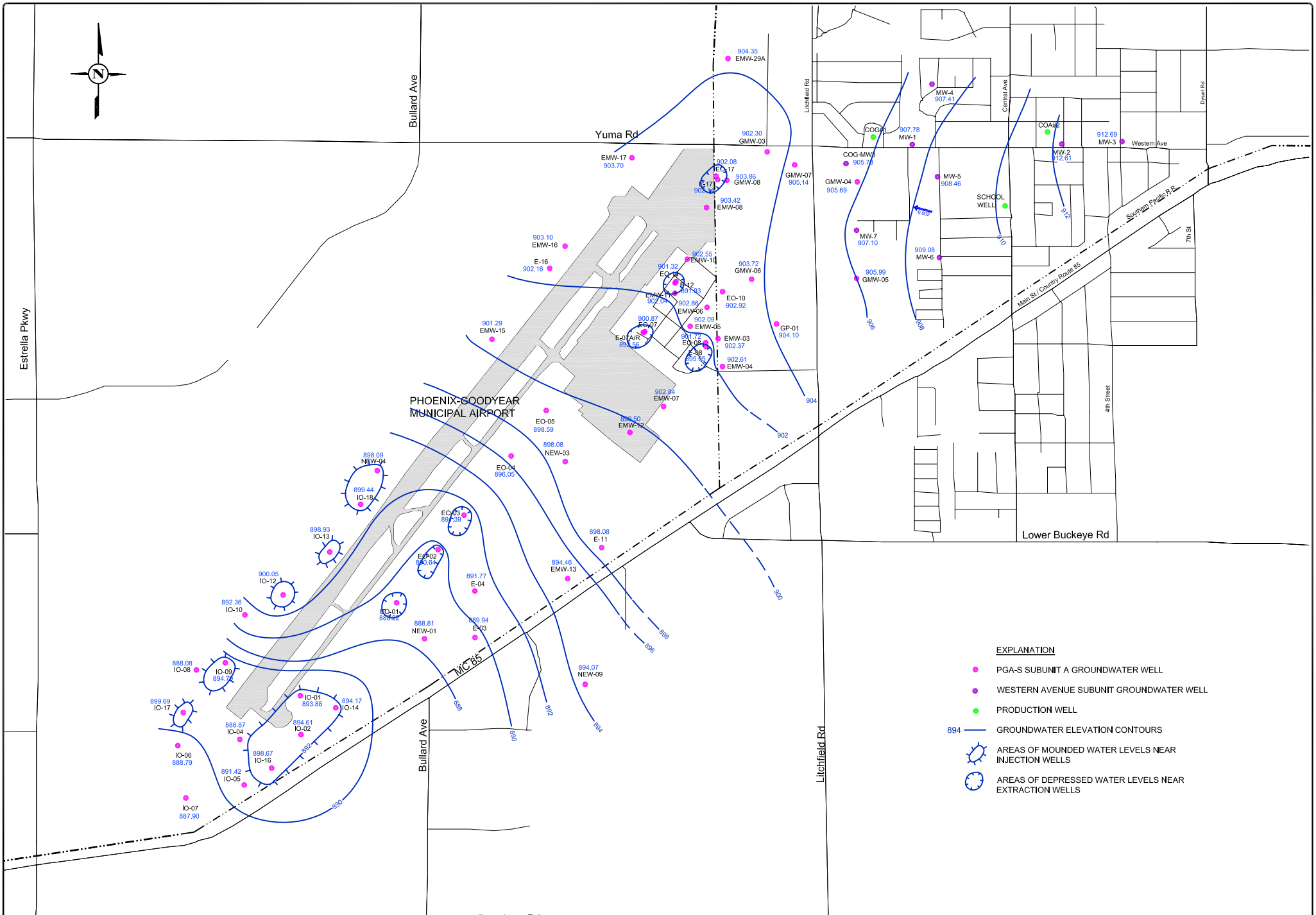
Western Avenue WQARF Site
Avondale, Arizona

Figure 3-10


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES DRIV
COG #1
MW-1
909.14
Note: Inconsistent Data Point. Point not used in Contouring.
THIRD AV
MW-3
903.02
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL DRIVE
COA #2
MW-2
MW-6
908.01
HILL
WESTERN AVENUE
COG-MW3
901.03
CALLE DE ORO
FOURTH AVENUE
MW-5
906.91
0.005
GMW-4
LITCHFIELD RD.
Lockheed Parking Area
MW-7
905.33
MW-8
907.40
GMW-5
901
903
905
907
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
BELMONT DRIVE
ROSE LANE
FIRST STREET
SECOND STREET
FOURTH STREET
FIFTH STREET
SIXTH STREET
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.005 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
NM NOT MEASURED
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS NOVEMBER 2000
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.021.03
DATE 01/20/2006
FIGURE: 3-11


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
CAÑADA ROBLES DRIV
COG #1
MW-1
908.91
THIRD AVENUE
MW-4
908.84
MADDEN DRIVE
HILL DRIVE
WESTERN AVENUE
FIRST ST
THIRD
FOURTH
FIFTH STREET
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
HILL DRIVE
COA #2
MW-2
915.48
MW-3
920.11
HILL
COG-MW3
906.57
GMW-4
906.37
CALLE DE ORO
LITCHFIELD RD.
FOURTH AVENUE
MW-5
909.51
0.003
Lockheed Parking Area
MW-7
907.68
GMW-5
905.47
MW-6
909.86
907
909
911
913
915
917
919
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
PACIFIC DRIVE
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.003 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS FEBRUARY 2001
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-12


BUENA VISTA AVENUE
FLORES AVENUE
LAS ROBLES DRIVE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS
COG #1
MW-4
908.90
MW-1
909.00
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
STREET
KINDERMAN DRIVE
FIFTH
HILL
HILL DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
COA #2
MW-3
919.22
MW-2
915.17
WESTERN AVENUE
COG-MW3
906.82
CALLE DE ORO
GMW-4
906.80
0.003
FOURTH AVENUE
MW-5
909.66
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
PACIFIC DRIVE
LITCHFIELD RD.
Lockheed Parking Area
MW-7
907.97
GMW-5
907.05
MW-6
910.17
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
SOUTHERN LANE
CENTRAL AVENUE
907
909
911
913
915
917
919
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.003 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS APRIL 2001
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-13



EXPLANATION

- PGA-S SUBUNIT A GROUNDWATER WELL
- WESTERN AVENUE SUBUNIT GROUNDWATER WELL
- PRODUCTION WELL
- 894 GROUNDWATER ELEVATION CONTOURS
- AREAS OF MOUNDED WATER LEVELS NEAR INJECTION WELLS
- AREAS OF DEPRESSED WATER LEVELS NEAR EXTRACTION WELLS

0 800 1600
APPROXIMATE SCALE IN FEET

DATE	REVISION	APRD.

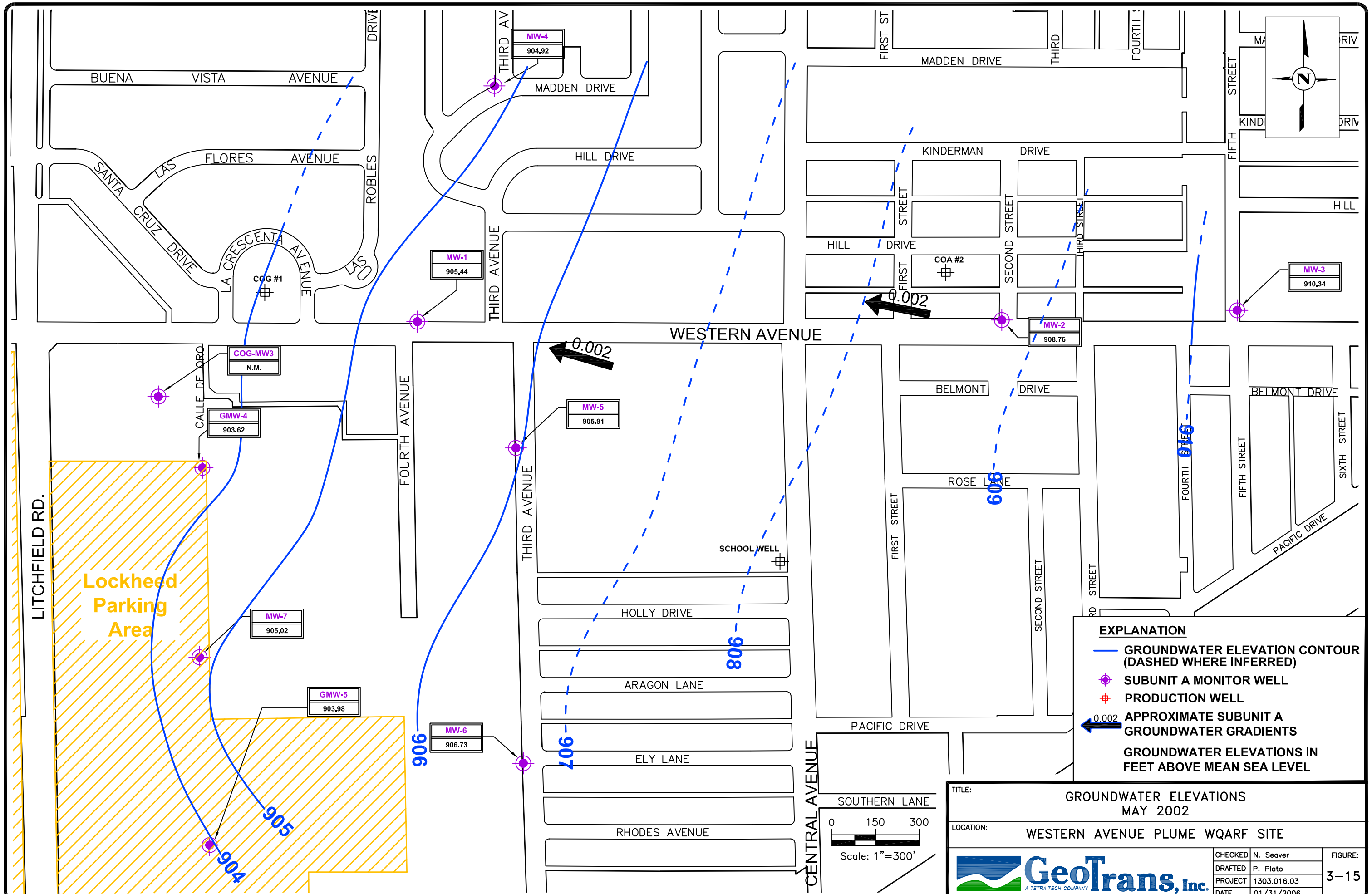
TITLE: WESTERN AVENUE AND PGA-S GROUNDWATER ELEVATION MAP - JULY 2001

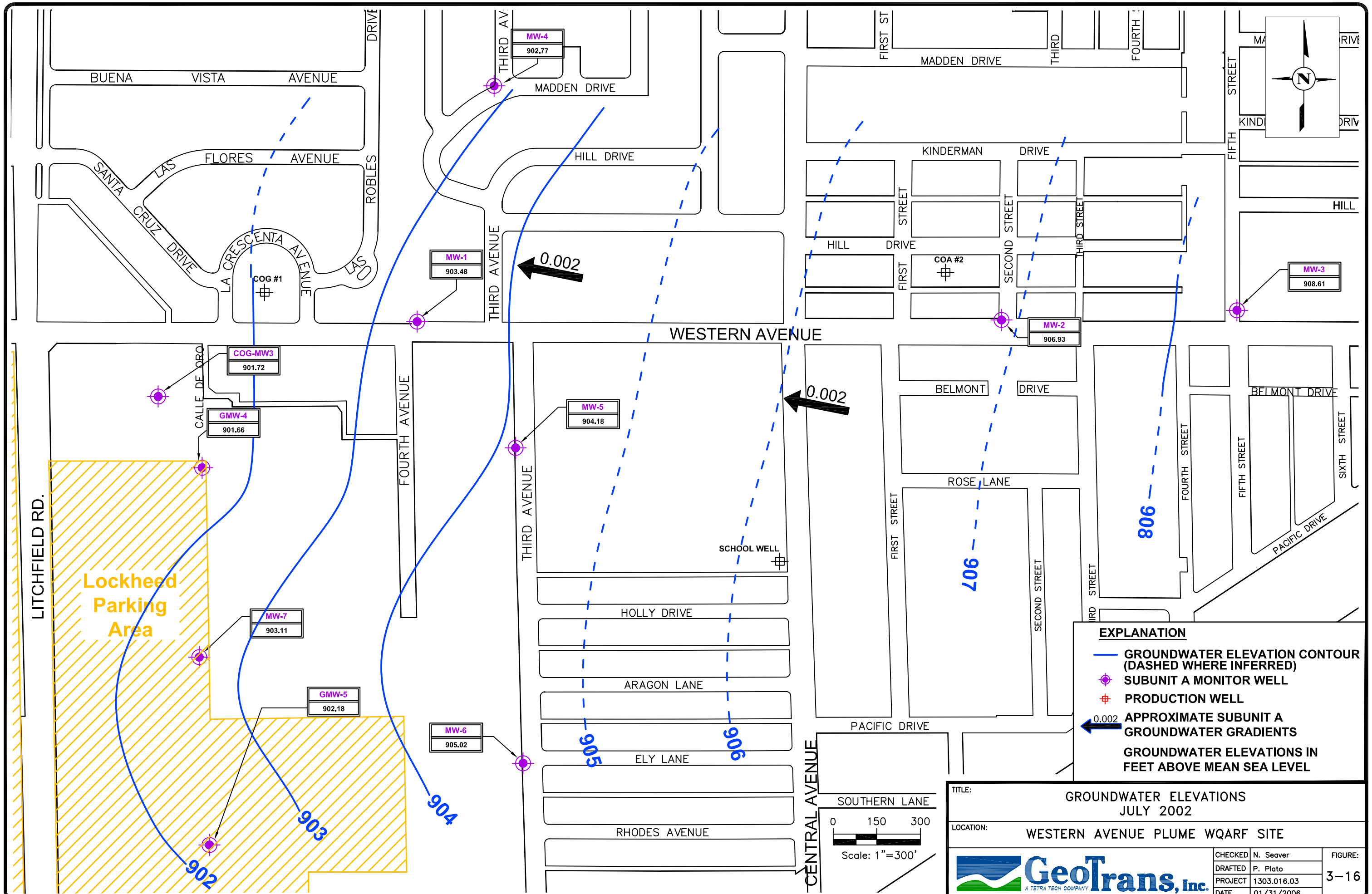
PROJECT: WESTERN AVENUE PLUME WQARF ARIZONA

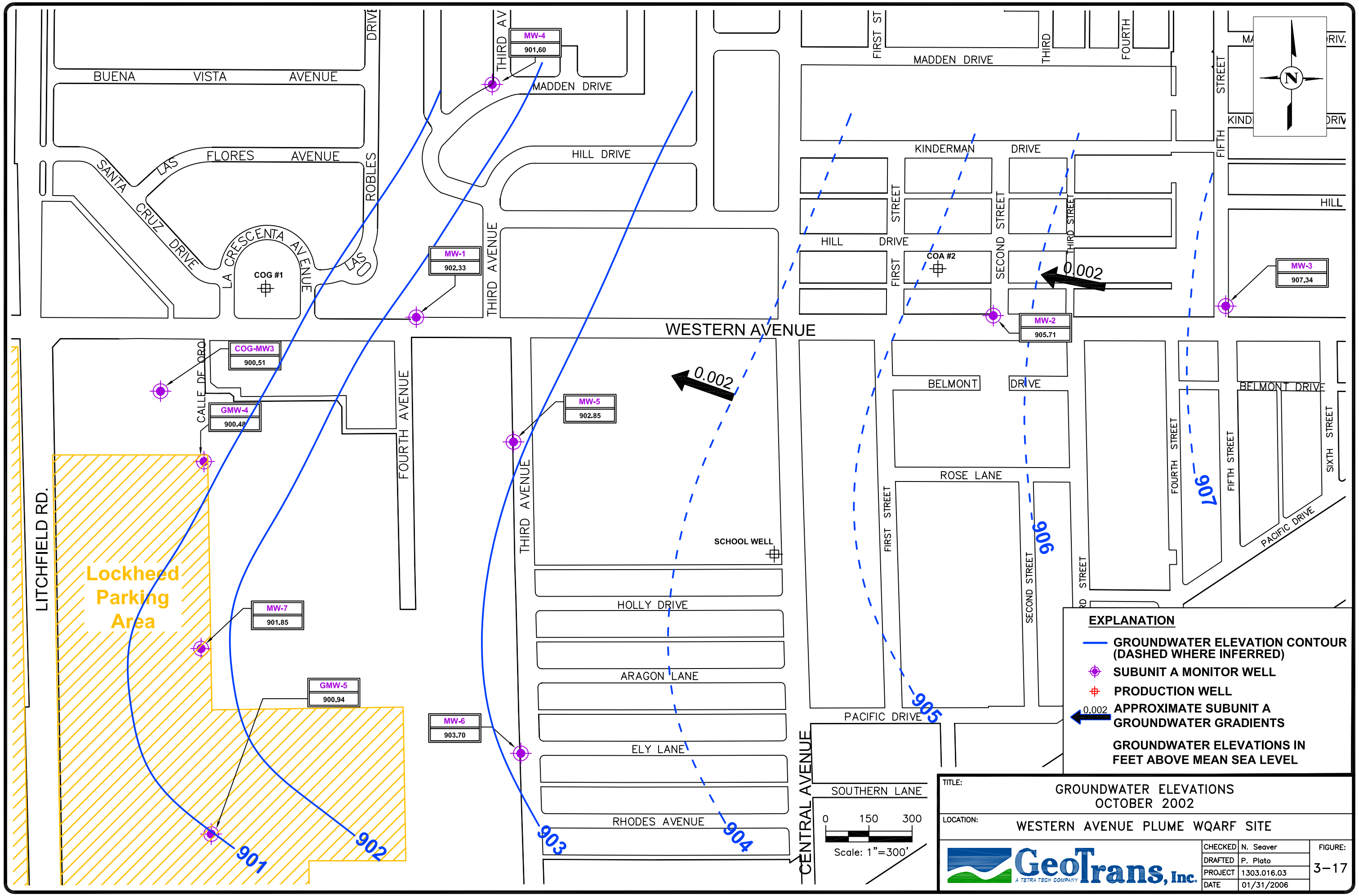
GeoTrans, Inc. A TETRA TECH COMPANY

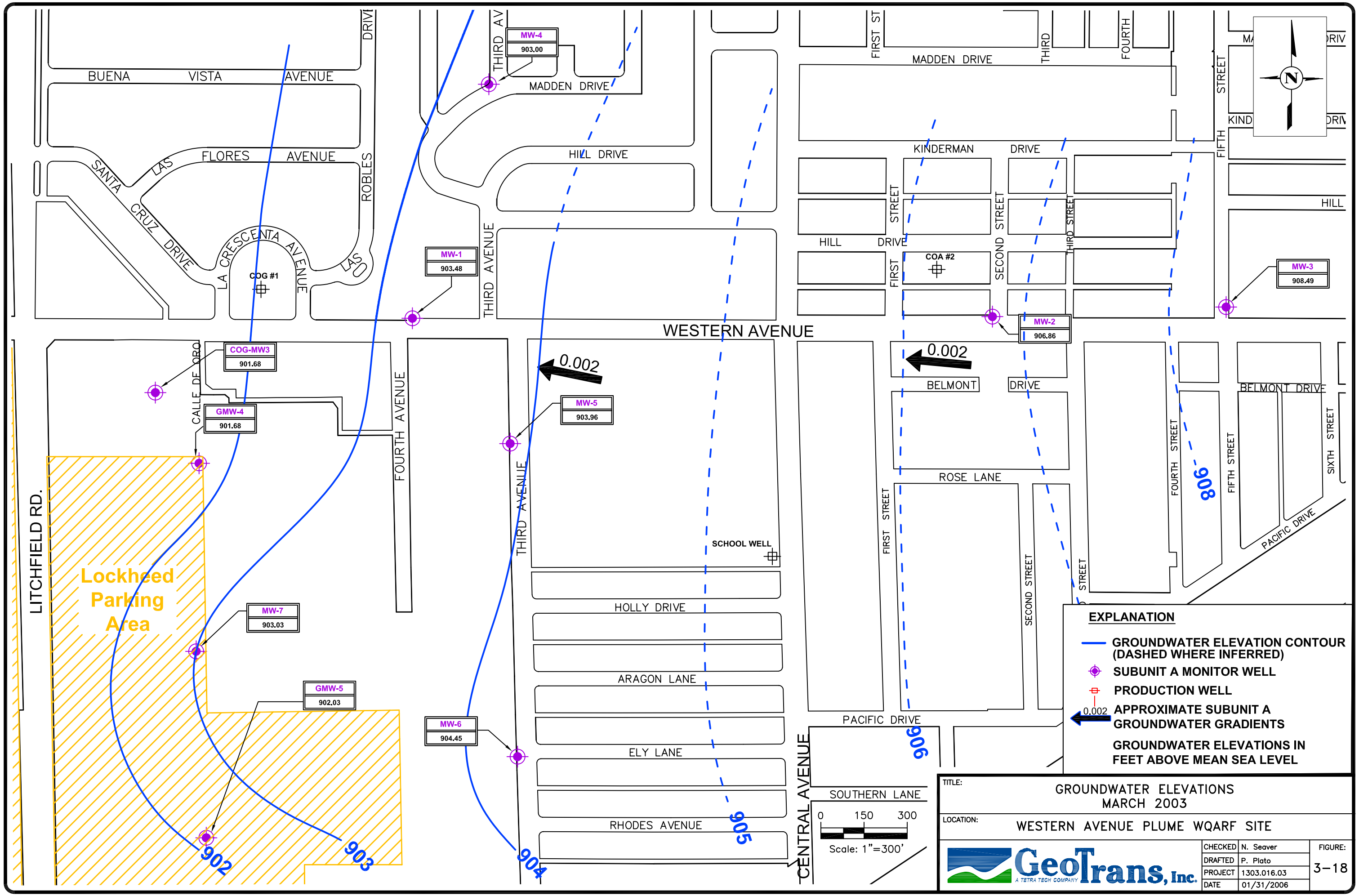
CHECKED	N. Seaver
DRAFTED	P. Plato
PROJ. NO.	1303.010.03
DATE	01/31/2006

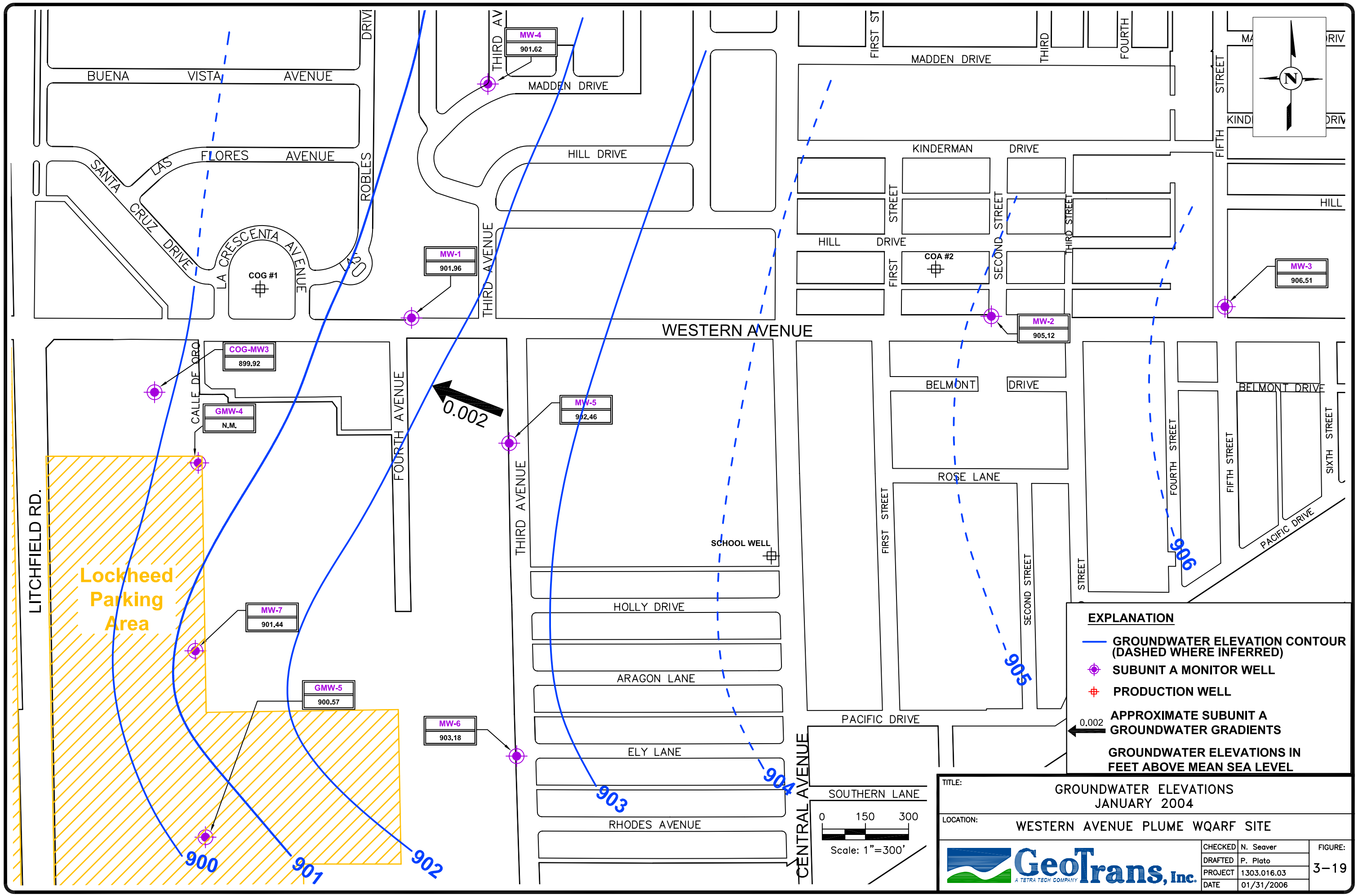
FIGURE: 3-14

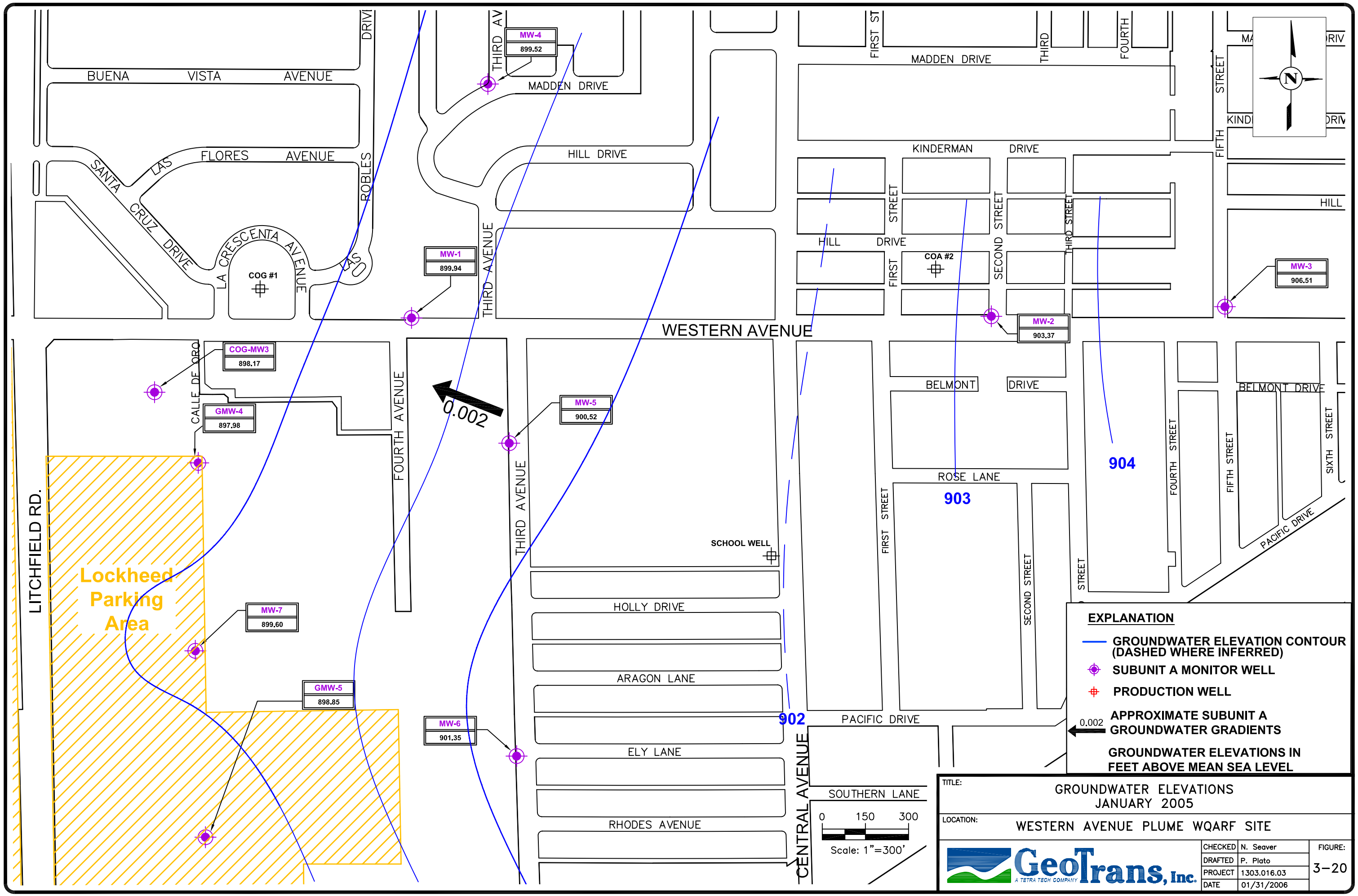

BUENA VISTA AVENUE
FLORES AVENUE
LAS ROBLES DRIVE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
COG #1
MW-4
904.92
MADDEN DRIVE
THIRD AVENUE
HILL DRIVE
MW-1
905.44
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
COA #2
MW-3
910.34
MW-2
908.76
0.002
WESTERN AVENUE
COG-MW3
N.M.
CALLE DE ORO
GMW-4
903.62
FOURTH AVENUE
MW-5
905.91
BELMONT DRIVE
ROSE LANE
SIXTH STREET
PACIFIC DRIVE
LITCHFIELD RD.
Lockheed Parking Area
MW-7
905.02
GMW-5
903.98
MW-6
906.73
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
CENTRAL AVENUE
SOUTHERN LANE
904
905
906
907
908
909
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS MAY 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-15

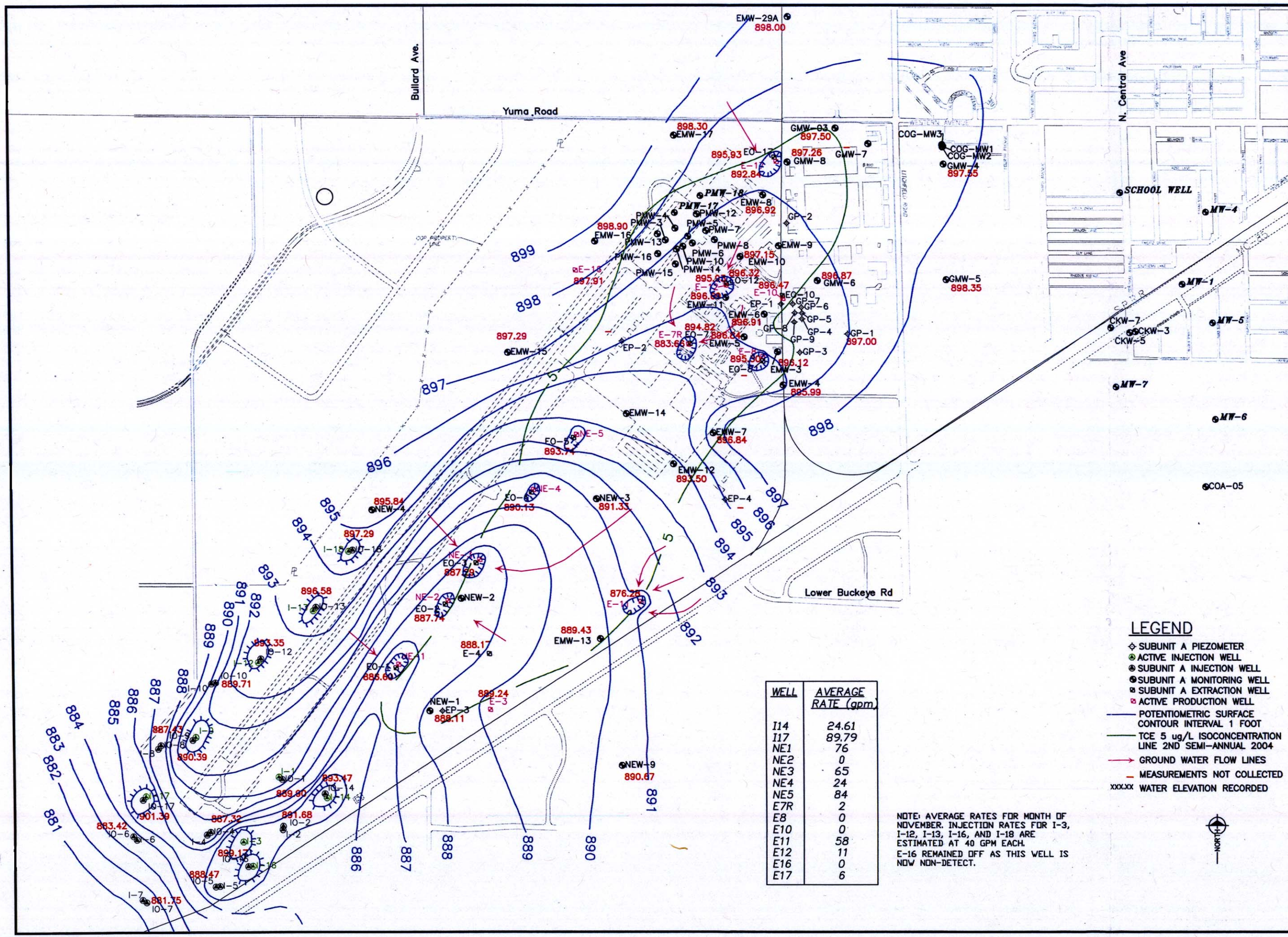

BUENA VISTA AVENUE
FLORES AVENUE
LAS ROBLES DRIVE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS
COG #1
MW-1
903.48
MW-4
902.77
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
0.002
WESTERN AVENUE
COG-MW3
901.72
GMW-4
901.66
CALLE DE ORO
LITCHFIELD RD.
FOURTH AVENUE
MW-5
904.18
Lockheed Parking Area
MW-7
903.11
GMW-5
902.18
MW-6
905.02
902
903
904
905
906
907
908
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL
COA #2
MW-2
906.93
MW-3
908.61
BELMONT DRIVE
ROSE LANE
PACIFIC DRIVE
SOUTHERN LANE
CENTRAL AVENUE
FOURTH STREET
FIFTH STREET
SIXTH STREET
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS JULY 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-16


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
COG #1
MW-4
901.60
MW-1
902.33
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
FIRST ST
THIRD
FOURTH
FIFTH STREET
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
COA #2
MW-2
905.71
MW-3
907.34
WESTERN AVENUE
0.002
COG-MW3
900.51
GMW-4
900.48
CALLE DE ORO
LITCHFIELD RD.
FOURTH AVENUE
MW-5
902.85
Lockheed Parking Area
MW-7
901.85
GMW-5
900.94
MW-6
903.70
BELMONT DRIVE
ROSE LANE
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
SIXTH STREET
CENTRAL AVENUE
SOUTHERN LANE
901
902
903
904
905
906
907
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS OCTOBER 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-17


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
COG #1
MW-4
903.00
MW-1
903.48
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
FIFTH STREET
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
HILL DRIVE
COA #2
MW-3
908.49
MW-2
906.86
WESTERN AVENUE
0.002
BELMONT DRIVE
ROSE LANE
COG-MW3
901.68
GMW-4
901.68
CALLE DE ORO
FOURTH AVENUE
MW-5
903.96
LITCHFIELD RD.
Lockheed Parking Area
MW-7
903.03
GMW-5
902.03
MW-6
904.45
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
SOUTHERN LANE
CENTRAL AVENUE
SIXTH STREET
902
903
904
905
906
908
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS MARCH 2003
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-18


BUENA VISTA AVENUE
FLORES AVENUE
LAS ROBLES
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
COG #1
MW-1
901.96
MW-4
901.62
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST STREET
THIRD
FOURTH
KINDERMAN DRIVE
SECOND STREET
THIRD STREET
FIFTH STREET
HILL
COA #2
MW-2
905.12
MW-3
906.51
WESTERN AVENUE
COG-MW3
899.92
CALLE DE ORO
GMW-4
N.M.
FOURTH AVENUE
0.002
MW-5
902.46
BELMONT DRIVE
ROSE LANE
SIXTH STREET
PACIFIC DRIVE
LITCHFIELD RD.
Lockheed Parking Area
MW-7
901.44
GMW-5
900.57
MW-6
903.18
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
CENTRAL AVENUE
SOUTHERN LANE
900
901
902
903
904
905
906
0 150 300
Scale: 1"=300'
N
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS JANUARY 2004
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-19


BUENA VISTA AVENUE
FLORES AVENUE
SANTA CRUZ DRIVE
LAS
LA CRESCENTA AVENUE
ROBLES
COG #1
MW-4
899.52
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
MW-1
899.94
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIFTH STREET
HILL
HILL DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
COA #2
MW-3
906.51
MW-2
903.37
WESTERN AVENUE
COG-MW3
898.17
CALLE DE ORO
GMW-4
897.98
FOURTH AVENUE
0.002
MW-5
900.52
BELMONT DRIVE
ROSE LANE
904
903
FOURTH STREET
FIFTH STREET
SIXTH STREET
PACIFIC DRIVE
LITCHFIELD RD.
Lockheed Parking Area
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
MW-7
899.60
GMW-5
898.85
MW-6
901.35
902
ELY LANE
RHODES AVENUE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
0.002 APPROXIMATE SUBUNIT A GROUNDWATER GRADIENTS
GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL
TITLE: GROUNDWATER ELEVATIONS JANUARY 2005
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED N. Seaver
DRAFTED P. Plato
PROJECT 1303.016.03
DATE 01/31/2006
FIGURE: 3-20



WELL	AVERAGE RATE (gpm)
I14	24.61
I17	89.79
NE1	76
NE2	0
NE3	65
NE4	24
NE5	84
E7R	2
E8	0
E10	0
E11	58
E12	11
E16	0
E17	6

NOTE: AVERAGE RATES FOR MONTH OF NOVEMBER. INJECTION RATES FOR I-3, I-12, I-13, I-16, AND I-18 ARE ESTIMATED AT 40 GPM EACH.
E-16 REMAINED OFF AS THIS WELL IS NOW NON-DETECT.

LEGEND

- SUBUNIT A PIEZOMETER
- ACTIVE INJECTION WELL
- SUBUNIT A INJECTION WELL
- SUBUNIT A MONITORING WELL
- SUBUNIT A EXTRACTION WELL
- ACTIVE PRODUCTION WELL
- POTENTIOMETRIC SURFACE CONTOUR INTERVAL 1 FOOT
- TCE 5 ug/L ISOCONCENTRATION LINE 2ND SEMI-ANNUAL 2004
- GROUND WATER FLOW LINES
- MEASUREMENTS NOT COLLECTED
- XXX.XX WATER ELEVATION RECORDED

NORTH

Rev.	Date	Description	Design Drawn Check

5110
PHOENIX-GOODYEAR AIRPORT SITE
PHOENIX, ARIZONA

POTENTIOMETRIC MAP
SUBUNIT A
2ND SEMI-ANNUAL
NOVEMBER 1-3, 2004

SHARP AND ASSOCIATES, INC.
982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660
www.sharpenv.com

File Name
5110_basestpl_suba

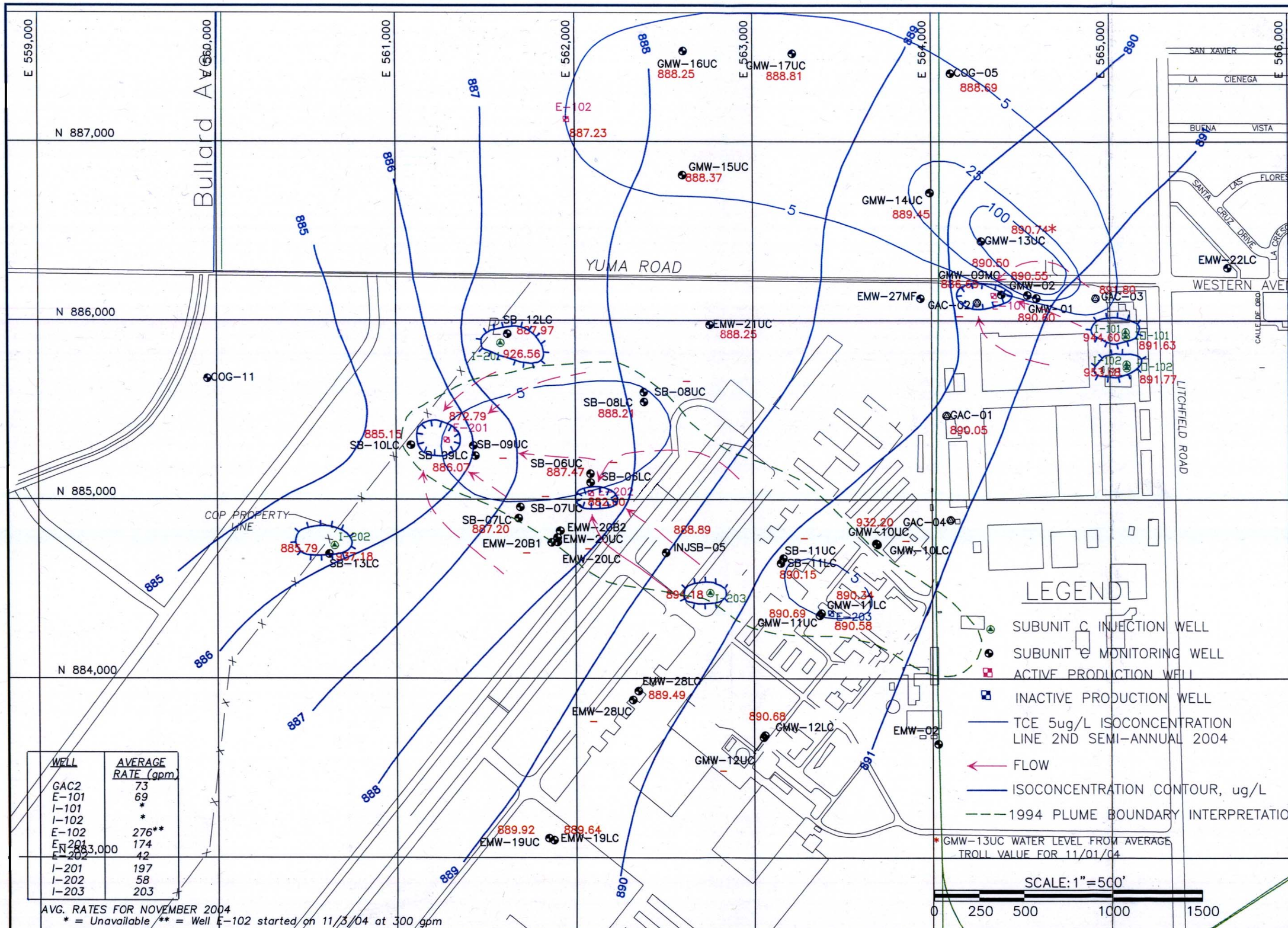
Project No.
2002-01

Sheet 1 of 1

Figure No.
5-1

Revision

:\5110\2nd SEMI 2004\20041101_subA_pot.dwg, krcarmichael



WELL	AVERAGE RATE (gpm)
GAC2	73
E-101	69
I-101	*
I-102	*
E-102	276**
E-201	174
E-202	42
I-201	197
I-202	58
I-203	203

AVG. RATES FOR NOVEMBER 2004
* = Unavailable ** = Well E-102 started on 11/3/04 at 300 gpm

LEGEND

- SUBUNIT C INJECTION WELL
- SUBUNIT C MONITORING WELL
- ACTIVE PRODUCTION WELL
- INACTIVE PRODUCTION WELL
- TCE 5ug/L ISOCONCENTRATION LINE 2ND SEMI-ANNUAL 2004
- FLOW
- ISOCONCENTRATION CONTOUR, ug/L
- 1994 PLUME BOUNDARY INTERPRETATION

* GMW-13UC WATER LEVEL FROM AVERAGE TROLL VALUE FOR 11/01/04

SCALE: 1"=500'
0 250 500 1000 1500

Rev.	Date	Description	Design Drawn Check

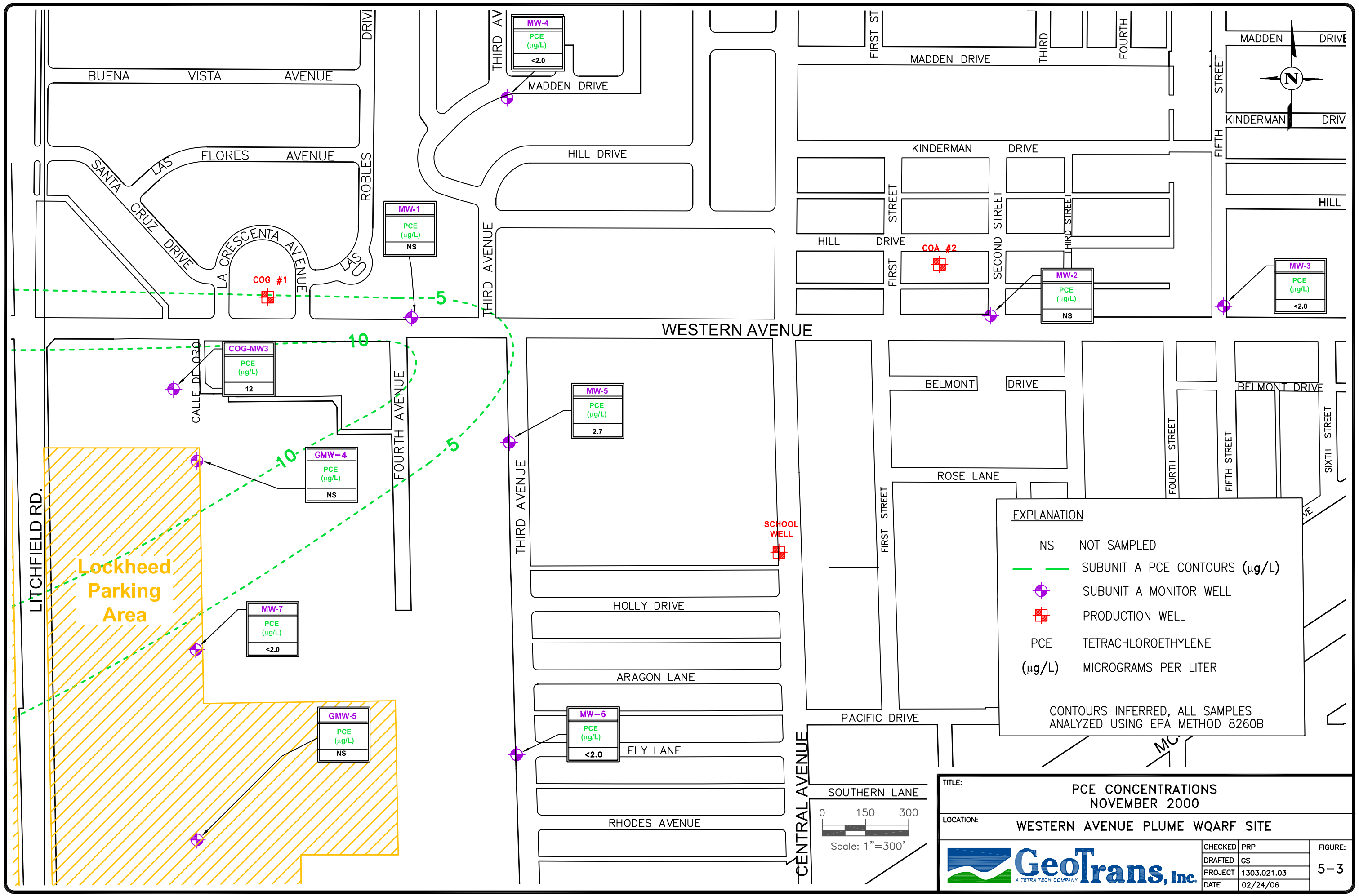
5110
PHONEX-GOODYEAR AIRPORT SITE
PHOENIX, ARIZONA

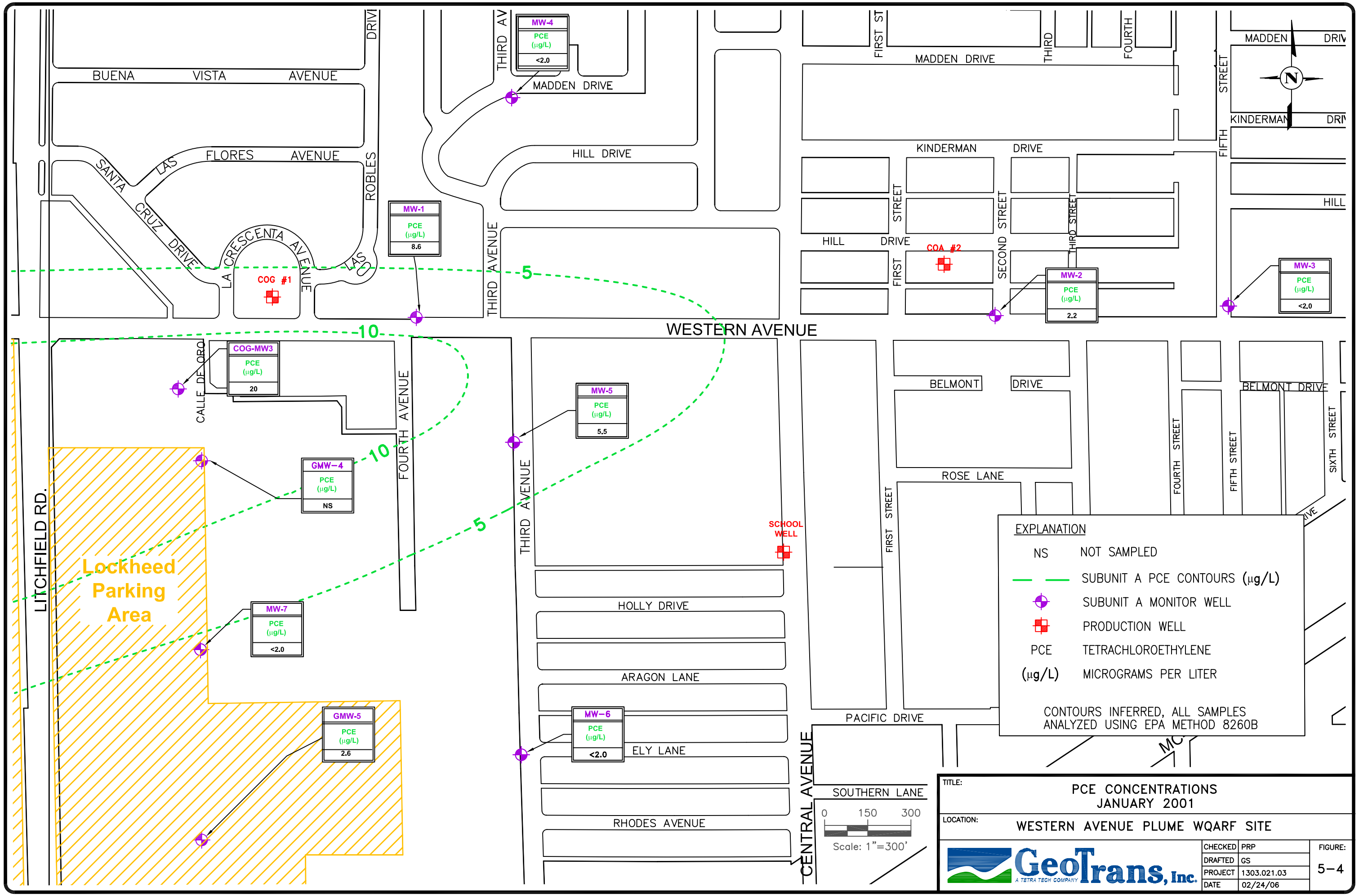
POTENTIOMETRIC MAP
SUBUNIT C
2ND SEMI-ANNUAL
NOVEMBER 1-3, 2004

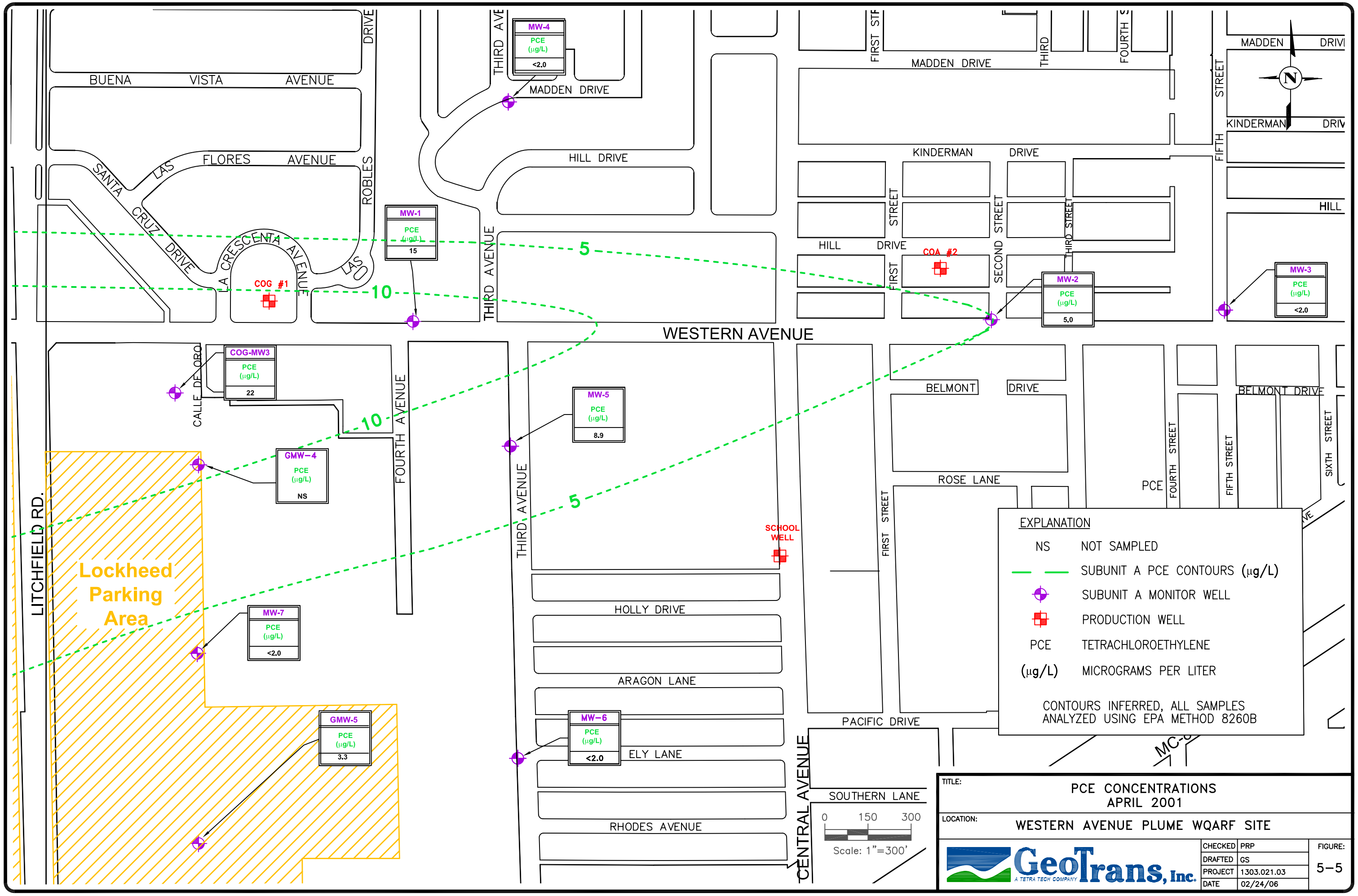
SHARP AND ASSOCIATES, INC.
982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660
www.sharpenv.com

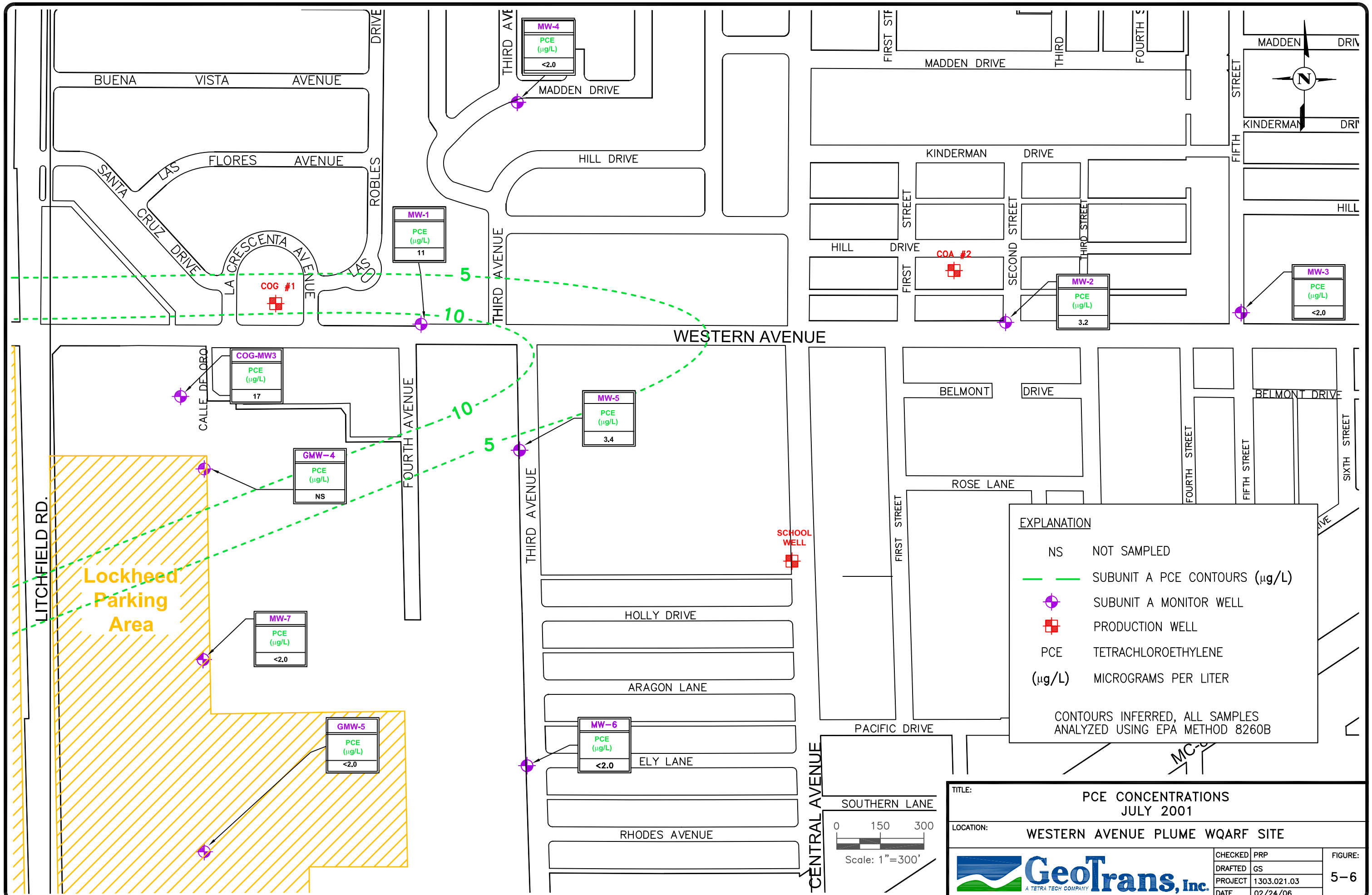
File Name
CAD FILE DWG NAMED
Project No.
5110
Sheet 1 of 1
Figure No. 5-2
Revision

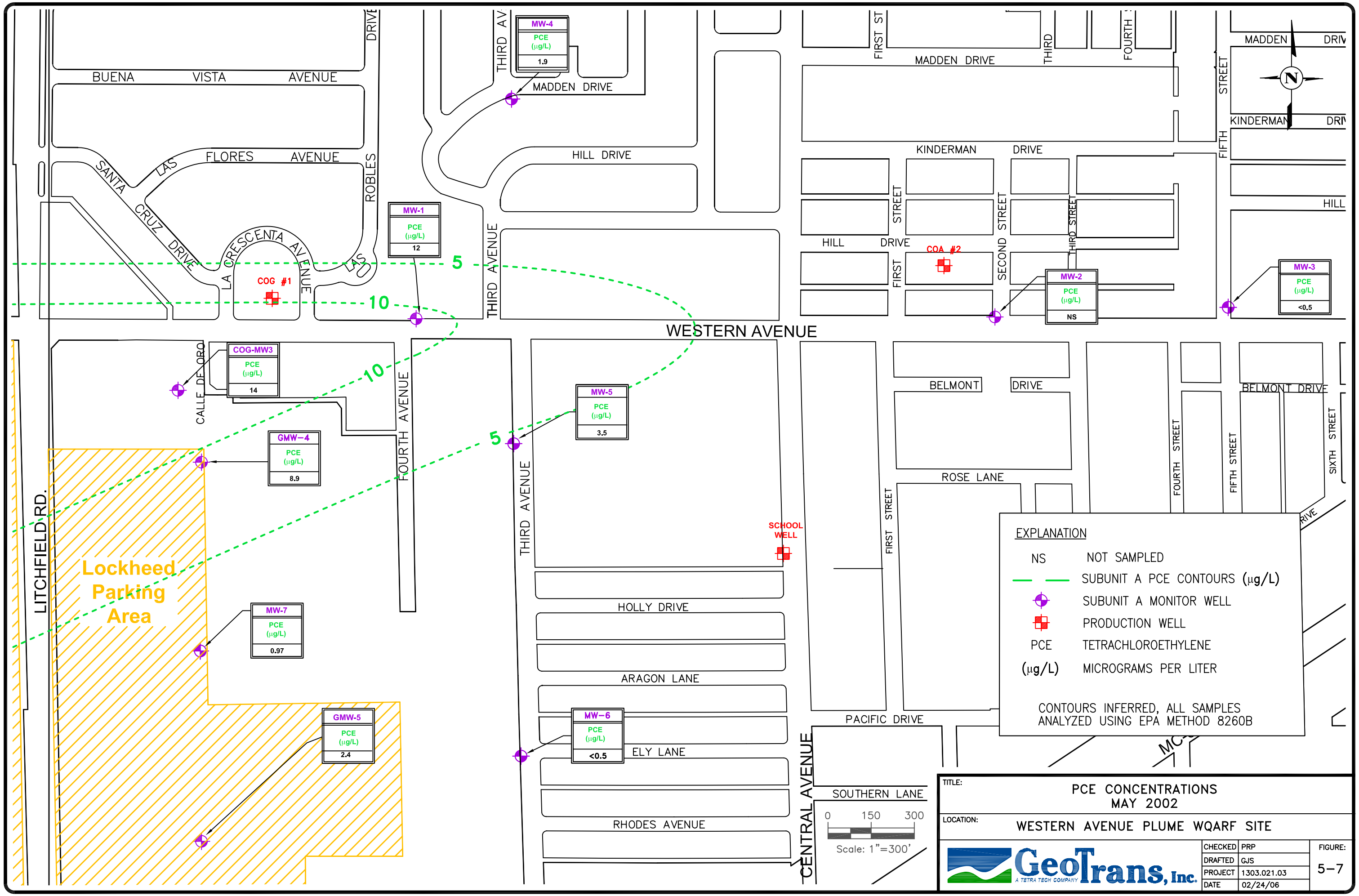
:\5110\2nd SEMI 2004\20041101_subC_pot.dwg, krcarmichael

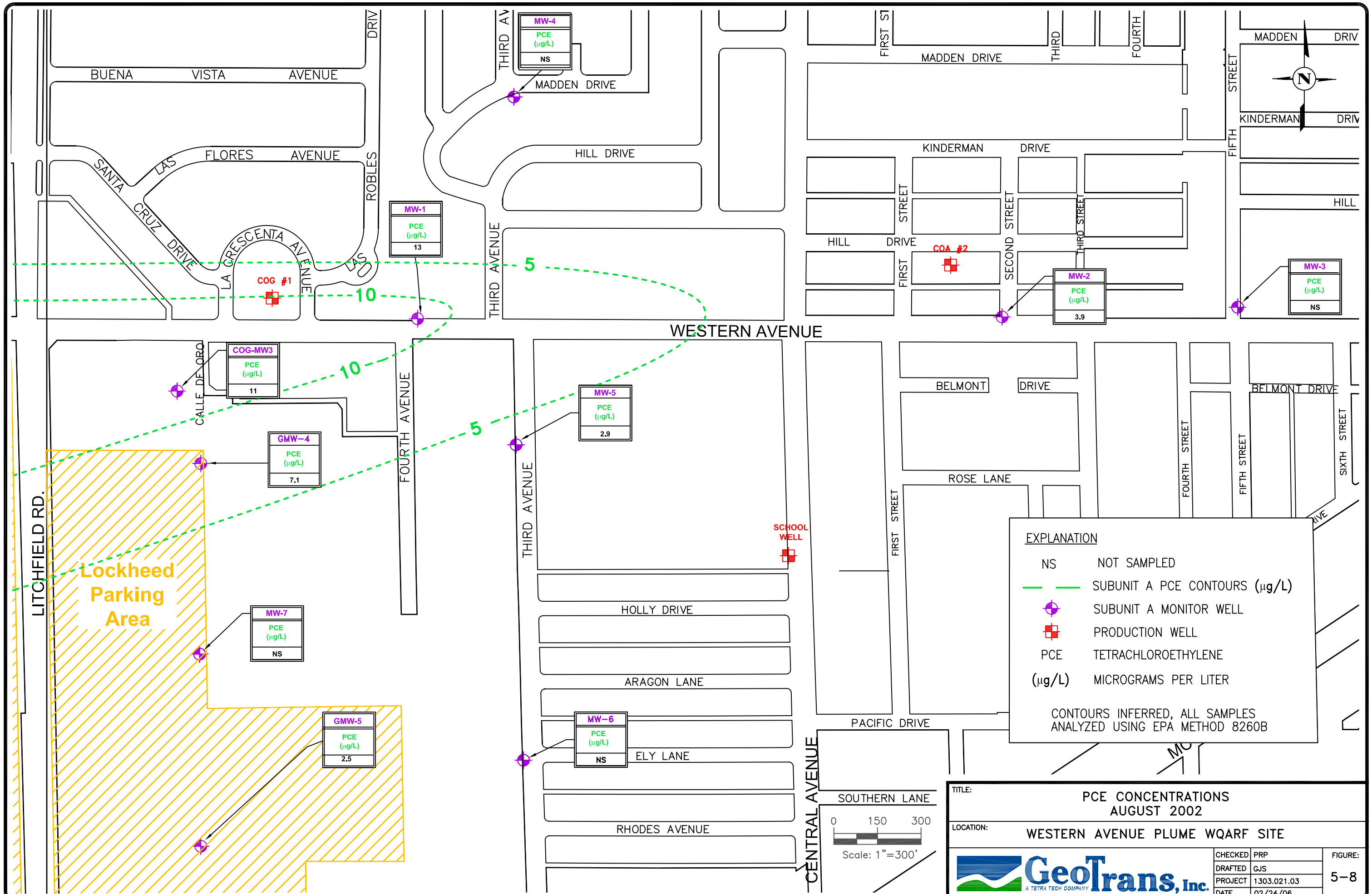

BUENA VISTA AVENUE
FLORES AVENUE
SANTA CRUZ DRIVE
LAS
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
COG #1
MW-1
PCE (µg/L)
NS
THIRD AVENUE
MW-4
PCE (µg/L)
<2.0
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL
COA #2
MW-2
PCE (µg/L)
NS
MW-3
PCE (µg/L)
<2.0
WESTERN AVENUE
COG-MW3
PCE (µg/L)
12
CALLE DE ORO
FOURTH AVENUE
MW-5
PCE (µg/L)
2.7
GMW-4
PCE (µg/L)
NS
LITCHFIELD RD.
Lockheed Parking Area
MW-7
PCE (µg/L)
<2.0
GMW-5
PCE (µg/L)
NS
SCHOOL WELL
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
HOLLY DRIVE
ARAGON LANE
MW-6
PCE (µg/L)
<2.0
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
10
5
TITLE:
PCE CONCENTRATIONS NOVEMBER 2000
LOCATION:
WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE:
5-3

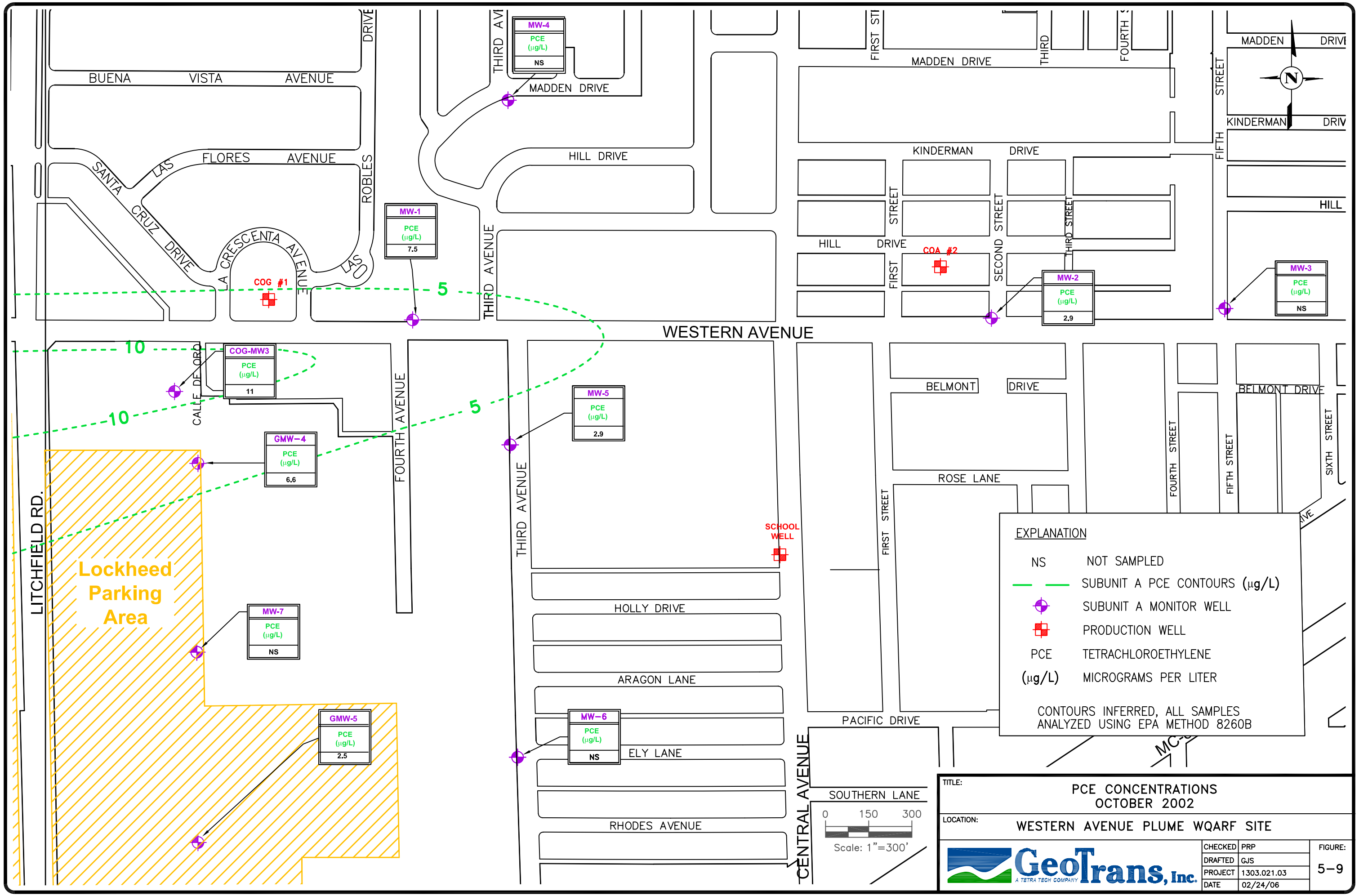

BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES
DRIVE
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL
WESTERN AVENUE
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
CALLE DE ORO
FOURTH AVENUE
LITCHFIELD RD.
Lockheed Parking Area
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
SOUTHERN LANE
CENTRAL AVENUE
SCHOOL WELL
COG #1
COA #2
MW-1 PCE (µg/L) 8.6
MW-2 PCE (µg/L) 2.2
MW-3 PCE (µg/L) <2.0
MW-4 PCE (µg/L) <2.0
MW-5 PCE (µg/L) 5.5
MW-6 PCE (µg/L) <2.0
MW-7 PCE (µg/L) <2.0
COG-MW3 PCE (µg/L) 20
GMW-4 PCE (µg/L) NS
GMW-5 PCE (µg/L) 2.6
5
10
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
0 150 300
Scale: 1"=300'
TITLE: PCE CONCENTRATIONS JANUARY 2001
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-4

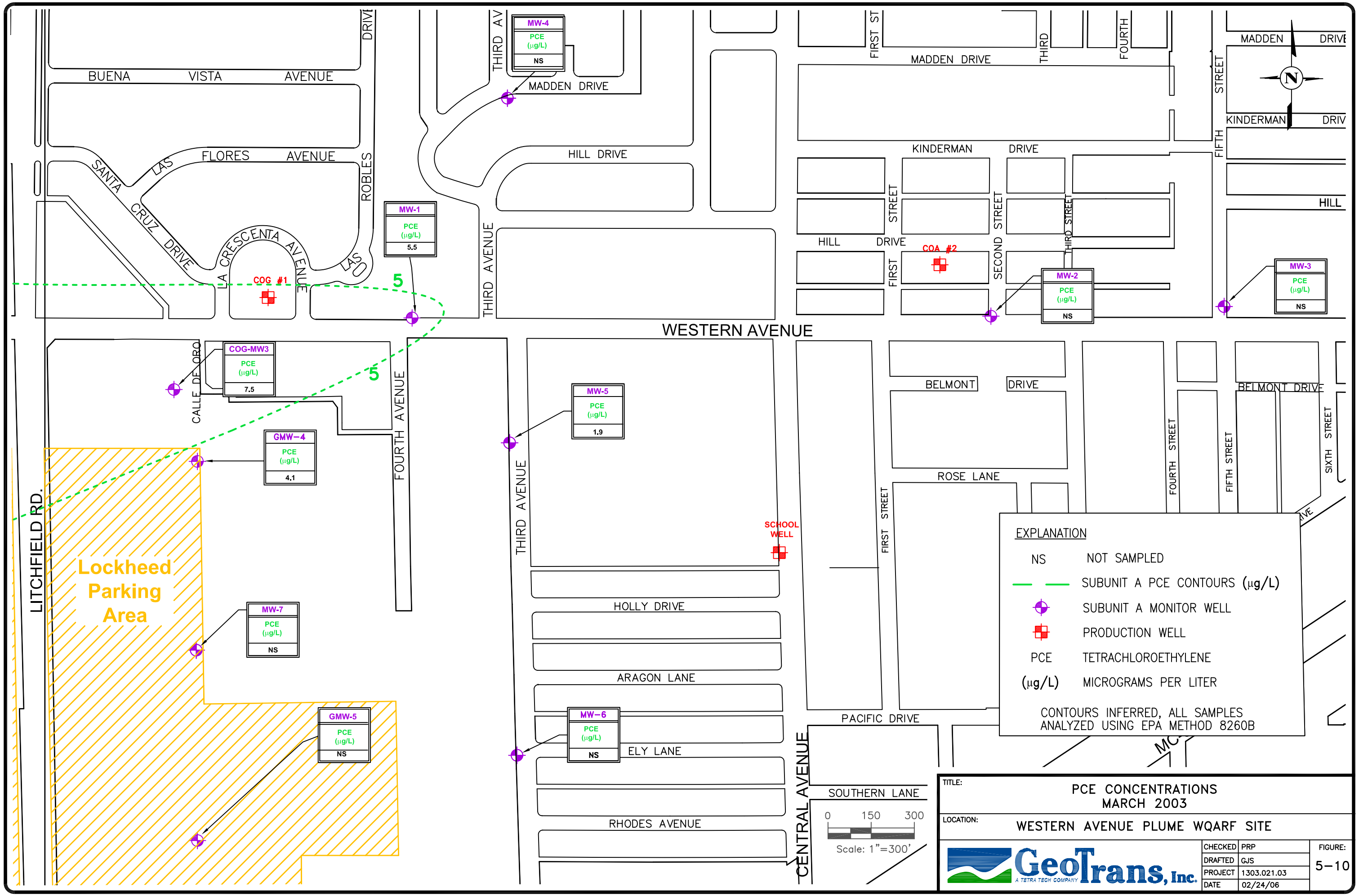

BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LAS CRESCENTA AVENUE
LAS ROBLES DRIVE
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL DRIVE
WESTERN AVENUE
BELMONT DRIVE
ROSE LANE
PACIFIC DRIVE
SOUTHERN LANE
CENTRAL AVENUE
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
LITCHFIELD RD.
CALLE DE ORO
FOURTH AVENUE
FOURTH STREET
FIFTH STREET
SIXTH STREET
Lockheed Parking Area
MW-4 PCE (µg/L) <2.0
MW-1 PCE (µg/L) 15
MW-2 PCE (µg/L) 5.0
MW-3 PCE (µg/L) <2.0
COG #1
COA #2
COG-MW3 PCE (µg/L) 22
MW-5 PCE (µg/L) 8.9
GMW-4 PCE (µg/L) NS
MW-7 PCE (µg/L) <2.0
GMW-5 PCE (µg/L) 3.3
MW-6 PCE (µg/L) <2.0
SCHOOL WELL
5
10
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
0 150 300
Scale: 1"=300'
TITLE: PCE CONCENTRATIONS APRIL 2001
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-5

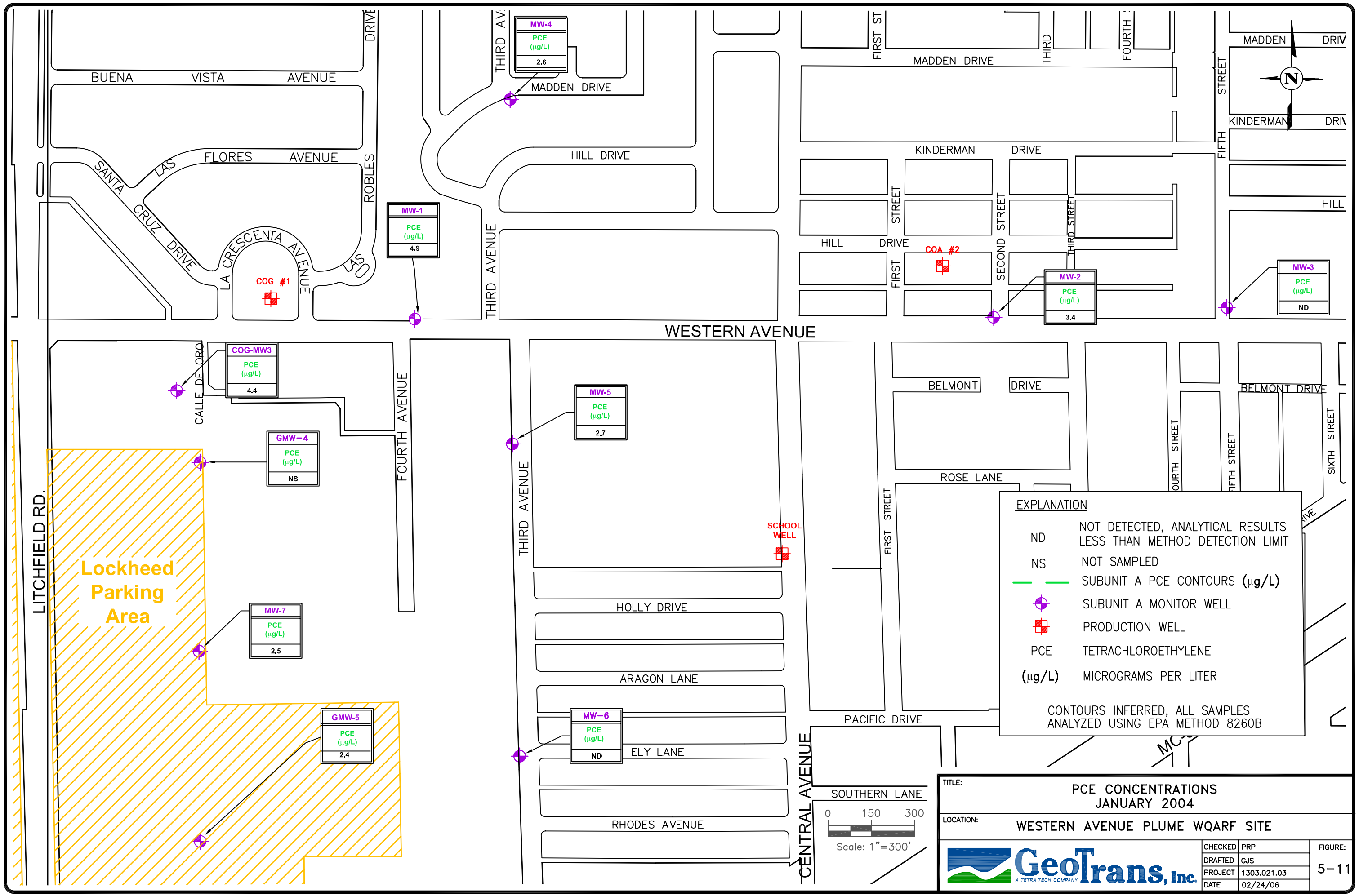

BUENA VISTA AVENUE
DRIVE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LAS ROBLES
LA CRESCENTA AVENUE
COG #1
MW-1
PCE (µg/L)
11
MW-4
PCE (µg/L)
<2.0
THIRD AVE
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
FIRST STREET
MADDEN DRIVE
THIRD
FOURTH
KINDERMAN DRIVE
FIFTH STREET
HILL DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
COA #2
MW-2
PCE (µg/L)
3.2
MW-3
PCE (µg/L)
<2.0
WESTERN AVENUE
COG-MW3
PCE (µg/L)
17
CALLE DE ORO
FOURTH AVENUE
MW-5
PCE (µg/L)
3.4
GMW-4
PCE (µg/L)
NS
LITCHFIELD RD.
Lockheed Parking Area
MW-7
PCE (µg/L)
<2.0
GMW-5
PCE (µg/L)
<2.0
THIRD AVENUE
SCHOOL WELL
BELMONT DRIVE
ROSE LANE
FIRST STREET
FOURTH STREET
FIFTH STREET
SIXTH STREET
HOLLY DRIVE
ARAGON LANE
MW-6
PCE (µg/L)
<2.0
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
5
10
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
TITLE:
PCE CONCENTRATIONS
JULY 2001
LOCATION:
WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE:
5-6

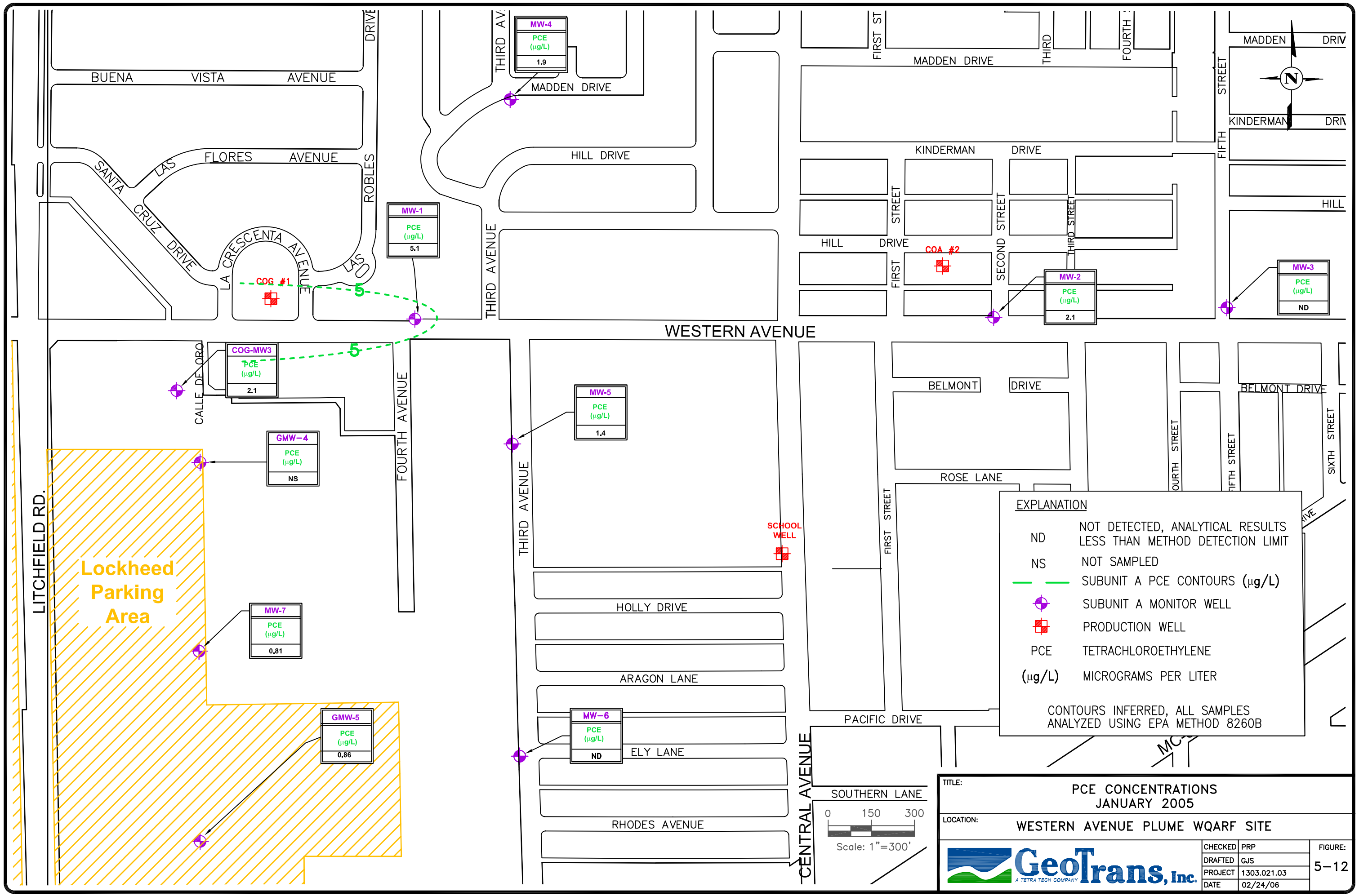

BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL
WESTERN AVENUE
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
CALLE DE ORO
FOURTH AVENUE
LITCHFIELD RD.
Lockheed Parking Area
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
SOUTHERN LANE
CENTRAL AVENUE
SCHOOL WELL
COG #1
COA #2
MW-1 PCE (µg/L) 12
MW-2 PCE (µg/L) NS
MW-3 PCE (µg/L) <0.5
MW-4 PCE (µg/L) 1.9
MW-5 PCE (µg/L) 3.5
MW-6 PCE (µg/L) <0.5
MW-7 PCE (µg/L) 0.97
COG-MW3 PCE (µg/L) 14
GMW-4 PCE (µg/L) 8.9
GMW-5 PCE (µg/L) 2.4
5
10
0 150 300
Scale: 1"=300'
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
TITLE: PCE CONCENTRATIONS MAY 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-7


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA GRESCENTA AVENUE
LAS ROBLES DRIV
THIRD AV
MADDEN DRIVE
HILL DRIVE
THIRD AVENUE
FIRST ST
THIRD
FOURTH
MADDEN DRIVE
KINDERMAN DRIVE
FIFTH STREET
MADDEN DRIV
KINDERMAN DRIV
HILL
FIRST STREET
SECOND STREET
THIRD STREET
HILL DRIVE
WESTERN AVENUE
CALLE DE ORO
LITCHFIELD RD.
FOURTH AVENUE
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
SCHOOL WELL
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
Lockheed Parking Area
MW-4 PCE (µg/L) NS
MW-1 PCE (µg/L) 13
COG #1
COA #2
MW-2 PCE (µg/L) 3.9
MW-3 PCE (µg/L) NS
COG-MW3 PCE (µg/L) 11
GMW-4 PCE (µg/L) 7.1
MW-5 PCE (µg/L) 2.9
MW-7 PCE (µg/L) NS
GMW-5 PCE (µg/L) 2.5
MW-6 PCE (µg/L) NS
5
10
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
0 150 300
Scale: 1"=300'
TITLE: PCE CONCENTRATIONS AUGUST 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-8


BUENA VISTA AVENUE
FLORES AVENUE
SANTA CRUZ DRIVE
LAS ROBLES DRIVE
LA CRESCENTA AVENUE
COG #1
MW-1
PCE (µg/L)
7.5
MW-4
PCE (µg/L)
NS
MADDEN DRIVE
THIRD AVENUE
HILL DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FOURTH STREET
FIFTH STREET
KINDERMAN DRIVE
HILL
COA #2
MW-2
PCE (µg/L)
2.9
MW-3
PCE (µg/L)
NS
WESTERN AVENUE
COG-MW3
PCE (µg/L)
11
CALLE DE ORO
FOURTH AVENUE
MW-5
PCE (µg/L)
2.9
GMW-4
PCE (µg/L)
6.6
LITCHFIELD RD.
Lockheed Parking Area
MW-7
PCE (µg/L)
NS
GMW-5
PCE (µg/L)
2.5
MW-6
PCE (µg/L)
NS
SCHOOL WELL
BELMONT DRIVE
ROSE LANE
SIXTH STREET
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
10
5
0 150 300
Scale: 1"=300'
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
TITLE: PCE CONCENTRATIONS OCTOBER 2002
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-9


BUENA VISTA AVENUE
LAS FLORES AVENUE
SANTA CRUZ DRIVE
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FOURTH
FIFTH STREET
KINDERMAN DRIVE
HILL
WESTERN AVENUE
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
CALLE DE ORO
FOURTH AVENUE
LITCHFIELD RD.
HOLLY DRIVE
ARAGON LANE
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
Lockheed Parking Area
MW-1 PCE (µg/L) 5.5
MW-2 PCE (µg/L) NS
MW-3 PCE (µg/L) NS
MW-4 PCE (µg/L) NS
MW-5 PCE (µg/L) 1.9
MW-6 PCE (µg/L) NS
MW-7 PCE (µg/L) NS
COG-MW3 PCE (µg/L) 7.5
GMW-4 PCE (µg/L) 4.1
GMW-5 PCE (µg/L) NS
COG #1
COA #2
SCHOOL WELL
5
EXPLANATION
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
0 150 300
Scale: 1"=300'
TITLE: PCE CONCENTRATIONS MARCH 2003
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc.
A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-10


BUENA VISTA AVENUE
FLORES AVENUE
SANTA CRUZ DRIVE
LAS
LA CRESCENTA AVENUE
LAS ROBLES DRIVE
COG #1
MW-1
PCE (µg/L)
4.9
THIRD AVENUE
MW-4
PCE (µg/L)
2.6
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
MADDEN DRIVE
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL DRIVE
COA #2
MW-2
PCE (µg/L)
3.4
MW-3
PCE (µg/L)
ND
WESTERN AVENUE
COG-MW3
PCE (µg/L)
4.4
CALLE DE ORO
FOURTH AVENUE
GMW-4
PCE (µg/L)
NS
MW-5
PCE (µg/L)
2.7
LITCHFIELD RD.
Lockheed Parking Area
MW-7
PCE (µg/L)
2.5
GMW-5
PCE (µg/L)
2.4
SCHOOL WELL
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
HOLLY DRIVE
ARAGON LANE
MW-6
PCE (µg/L)
ND
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
ND NOT DETECTED, ANALYTICAL RESULTS LESS THAN METHOD DETECTION LIMIT
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
TITLE: PCE CONCENTRATIONS JANUARY 2004
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-11


BUENA VISTA AVENUE
FLORES AVENUE
SANTA CRUZ DRIVE
LAS ROBLES DRIVE
LA CRESCENTA AVENUE
LAS OLAS
COG #1
MW-1
PCE (µg/L)
5.1
MW-4
PCE (µg/L)
1.9
THIRD AVENUE
MADDEN DRIVE
HILL DRIVE
FIRST ST
THIRD
FOURTH
KINDERMAN DRIVE
FIRST STREET
SECOND STREET
THIRD STREET
FIFTH STREET
HILL DRIVE
COA #2
MW-2
PCE (µg/L)
2.1
MW-3
PCE (µg/L)
ND
WESTERN AVENUE
COG-MW3
PCE (µg/L)
2.1
CALLE DE ORO
FOURTH AVENUE
GMW-4
PCE (µg/L)
NS
MW-5
PCE (µg/L)
1.4
LITCHFIELD RD.
Lockheed Parking Area
MW-7
PCE (µg/L)
0.81
GMW-5
PCE (µg/L)
0.86
SCHOOL WELL
BELMONT DRIVE
ROSE LANE
FOURTH STREET
FIFTH STREET
SIXTH STREET
HOLLY DRIVE
ARAGON LANE
MW-6
PCE (µg/L)
ND
ELY LANE
RHODES AVENUE
PACIFIC DRIVE
CENTRAL AVENUE
SOUTHERN LANE
0 150 300
Scale: 1"=300'
EXPLANATION
ND NOT DETECTED, ANALYTICAL RESULTS LESS THAN METHOD DETECTION LIMIT
NS NOT SAMPLED
SUBUNIT A PCE CONTOURS (µg/L)
SUBUNIT A MONITOR WELL
PRODUCTION WELL
PCE TETRACHLOROETHYLENE
(µg/L) MICROGRAMS PER LITER
CONTOURS INFERRED, ALL SAMPLES ANALYZED USING EPA METHOD 8260B
TITLE: PCE CONCENTRATIONS JANUARY 2005
LOCATION: WESTERN AVENUE PLUME WQARF SITE
GeoTrans, Inc. A TETRA TECH COMPANY
CHECKED PRP
DRAFTED GJS
PROJECT 1303.021.03
DATE 02/24/06
FIGURE: 5-12

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-1

CLIENT/SITE ADEQ-Avondale
LOCATION Avondale, Arizona
FIELD GEOLOGIST JRB
DRILLING COMPANY Verde
TOTAL DEPTH 100 Feet
SURFACE ELEVATION

PROJECT NUMBER AZ069505
DATE STARTED 6-30-95
DATE COMPLETED 6-30-95
DRILLING EQUIP. Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL Vertical
WATER TABLE

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							SM	
5			08:30					Silty sand (SM), brown, fine-grained with minor cobbles, low plasticity, no odor.
10			08:39					
							GP	
15			08:47					
20			09:00					
25			09:09					
30			09:21					Cobbles (GP), with minor sands and gravels, brown, low plasticity, no odor.
35			09:32					
40			09:40					
45			09:49					
50			09:58					

NOTES:

FILE NAME: MW-1

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-1

CLIENT/SITE ADEQ-Avondale
LOCATION Avondale, Arizona
FIELD GEOLOGIST JRB
DRILLING COMPANY Verde
TOTAL DEPTH 100 Feet
SURFACE ELEVATION

PROJECT NUMBER AZ069505
DATE STARTED 6-30-95
DATE COMPLETED 6-30-95
DRILLING EQUIP. Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL Vertical
WATER TABLE

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							GP	
55			10:17					
60			10:21					
65			10:33					
70			10:46					
75			11:00					Cobbles (GP), with minor sands and gravels, brown, low plasticity, no odor.
80			11:09					
85			11:21					
90			11:37					
95			11:48					
100			12:10					

NOTES:

FILE NAME: MW-1

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-2

CLIENT/SITE: ADEQ-Avondale
LOCATION: Avondale, Arizona
FIELD GEOLOGIST: JRB
DRILLING COMPANY: Verde
TOTAL DEPTH: 100 Feet
SURFACE ELEVATION:

PROJECT NUMBER: AZ069505
DATE STARTED: 6-29-95
DATE COMPLETED: 6-29-95
DRILLING EQUIP.: Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL: Vertical
WATER TABLE:

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							SM	
5			10:30					
10			10:41					
15			10:52					
20			10:59					Silty sand (SM), brown, fine-grained with minor cobbles, low plasticity, no odor.
25			11:10					
30			11:19					
35			11:28					
40			11:37				GP	
45			11:49					Cobbles (GP), with minor sands and gravels, brown, low plasticity, no odor.
50			12:00					

NOTES:

FILE NAME: MW-2

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-2

CLIENT/SITE ADEQ-Avondale
LOCATION Avondale, Arizona
FIELD GEOLOGIST JRB
DRILLING COMPANY Verde
TOTAL DEPTH 100 Feet
SURFACE ELEVATION

PROJECT NUMBER AZ069505
DATE STARTED 6-29-95
DATE COMPLETED 6-29-95
DRILLING EQUIP. Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL Vertical
WATER TABLE

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							GP	
55			12:09					
60			12:18					Cobbles (GP), with minor sands and gravels, brown, low plasticity, no odor.
65			12:27					
70			12:39					
75			12:49					
80			12:58					
85			13:16					
90			13:29					
95			13:37					
100			13:55					

NOTES:

FILE NAME: MW-2

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-3

CLIENT/SITE ADEQ-Avondale
LOCATION Avondale, Arizona
FIELD GEOLOGIST SDK
DRILLING COMPANY Verde
TOTAL DEPTH 100 Feet
SURFACE ELEVATION

PROJECT NUMBER AZ069505
DATE STARTED 7-3-95
DATE COMPLETED 7-3-95
DRILLING EQUIP. Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL Vertical
WATER TABLE 48 Feet

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							ML	
5			13:38					Silty sand (ML), brown, fine-grained low plasticity, no odor
10							SM	Silty Sand (SM), brown, fine to medium grained, low plasticity no odor.
							SW	
15								Sand (SW), tannish brown, with gravels, low plasticity, no odor.
20							GM	
25			13:52					Silty Gravels (GM), tannish brown, medium grained, low plasticity, no odor.
30			13:53					
							GW	Gravels (GW), large cobble concentration in lens.
35			13:36				GM	
40			14:00					Silty Gravels (GM), tannish brown, medium grained, low plasticity, no odor.
45			14:05					
50			14:10					

NOTES:

FILE NAME: MW-3

GROWTH
Growth Environmental Services, Inc.

BORING NUMBER MW-3

CLIENT/SITE ADEQ-Avondale
LOCATION Avondale, Arizona
FIELD GEOLOGIST SDK
DRILLING COMPANY Verde
TOTAL DEPTH 100 Feet
SURFACE ELEVATION

PROJECT NUMBER AZ069505
DATE STARTED 7-3-95
DATE COMPLETED 7-3-95
DRILLING EQUIP. Longyear BK-81, Hollow-Stem Auger
ANGLE FROM VERTICAL Vertical
WATER TABLE 48 Feet

DEPTH (feet)	SAMPLE	SAMPLE NO.	TIME COLLECTED	BLOWS/6 in.	PID (PID Units)	GRAPHIC LOG	SOIL CLASS	DESCRIPTION AND REMARKS
							GM	
55			14:13					
60			14:18					
65			14:24					Silty Gravels (GM), tannish brown, medium grained, low plasticity, no odor.
70			14:29					
75			14:43					
80			14:56				SM	
85			15:15					
90								Silty Sand (SM), brown, fine to medium grained, low plasticity no odor.
95								
100								

NOTES:

FILE NAME: MW-3

GeoTrans, Inc.

ADWR 55-583231

MONITOR WELL CONSTRUCTION SUMMARY

Well No. COA-MW3

Boring No. X-Ref:

Survey Coords: N 886279.537/E 569419.700

Elevation Ground Level:

Job Number: E025-104

Top of Casing: 973.23

Drilling Summary:		Construction Time Log:				
Total Depth	80'	Task	Date	Time	Date	Time
Borehole Diameter	9"	Drilling	10/19/00	945	10/19/00	1430
Casing Stick-Up	N/A					
Driller	THF					
Rig	AP1000					
Bit(s)		Geophys. Logging				
Drilling Fluid	N/A	Casing:	10/20/00	1000	10/20/00	1030
Protective Casing	N/A	Casing:				
Comments:						
Boring to 135'		Sand Pack:	10/20/00	1030	10/20/00	1120
Grout up to 90'		Filter Placement:	10/20/00			
5' Bentonite		Cementing:	10/20/00	1305	10/20/00	1345
Sand to 80'		Development:				2 hrs

Well Design & Specifications

Basis: Geologic Log ___X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Bailed and pumped

2" Grundfos variable frequency

Submersible pump installed at 70 feet bgs

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0 to 45	C1	
45 to 80	S1	

Casing: C1	4" schedule 40 PVC
C2	
Screen: S1	4" schedule 40 PVC (0.020 slots)
S2	
Filter Pack:	8/12 Colorado silica sand
Grout Seal:	10% Bentonite
Seal:	

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: Western Avenue Plume WQARF Site

Location: Avondale and Goodyear, Arizona

Supervised By: Azar Portugal

Date: 10/20/00

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW3 Start Date/Time: 10/18/00 End Date/Time: 10/18/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 973.23
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
0								Ground Surface
1–5	1	SS	10/10/15	18	12	1.3		**SILT (ML)** Light brown, dry, dense, silt with some gravel and trace clay
6–10	2	SS	2/5/6	12	12	2.1		**SILT (ML)** Light brown, dry, dense, silt with some gravel and trace clay
11–15	3	SS	50/6"	6	6	0.0		**SILT (ML)** Light brown, dry, dense, silt with some sand, gravel and clay
16–20	4	SS	10/15/15	18	18	1.3		**SILT (ML)** Light brown, dry, dense, silt with some sand, gravel and clay. 12" Silty sand layer at 20 feet bgs.
21–25	5	SS	50/6"	6	6	1.4		**SILT (ML)** Light brown, dry, very dense, silt and clay, some gravel.
26–30	6	SS	50/2"	2	2	2.0		**SILT (ML)** Light brown, dry, very dense, silt and clay, some gravel.
31–35	7	SS	50/4"	5	5	1.5		**SILTY GRAVEL (GM)** Light brown, dry , gravel with silt and clay.
36–40	8	SS	50/5"	3	3	1.4		
41–45	9	SS	50/2"	2	2	2.3		**GRAVEL (GP)** Poorly Graded Gravel
46–50	10	SS	50/2"	2	2	2.4		

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 1 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW3 Start Date/Time: 10/18/00 End Date/Time: 10/18/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 973.23
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	11	SS	50/3"	3	3	1.8		**GRAVEL WITH SILT AND SAND (GW)** Brown, wet, very fine sand, trace silt
56 57 58 59 60	12	SS	50/1"	1	0	1.9		**GRAVEL WITH SILT AND SAND(GW)** No recovery.
61 62 63 64 65	13	SS	10/15/5	18	12	1.7		**SAND (SW)** Brown, wet, well graded sand with trace silt.
66 67 68 69 70	14	SS	10/10/10	10	18	2.0		
71 72 73 74 75	15	SS	10/10/10	18	18	1.4		
76 77 78 79 80	16	SS	10/5/5	18	18	1.4		
81 82 83 84 85	17	SS	10/10/10	18	18	1.2		
86 87 88 89 90	18	SS	50/6"	6	6	1.3		
91 92 93 94 95	19	SS	50/2"	2	2	2.6		**CLAY (CL)** Brown, moist, hard, clay with silt and sand
96 97 98 99 100	20	SS	50/6"	6	6	2.1		

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW3 Start Date/Time: 10/18/00 End Date/Time: 10/18/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 973.23
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
101 102 103 104 105	21	SS	50/6"	6	6	1.4		**SILTY SAND (SM)** Wet, silty sand, some clay
106 107 108 109 110	22	SS	50/6"	6	6	1.9		
111 112 113 114 115	23	SS	50/2"	2	2	1.7		
116 117 118 119 120	24	SS	50/6"	6	6	2.1		
121 122 123 124 125	25	SS	5/5/5	18	14	2.3		**SILT (ML)** Light Brown, wet, hard, silt with sand and clay.
126 127 128 129 130	26	SS	10/10/10	18	12	2.5		
131 132 133 134 135	27	SS	50/6"	6	6	1.8		
136 137 138 139 140 141 142 143 144 145 146 147 148 149 150								Total Depth 135 ft.

Drilling Contractor: THF
Checked By:
Date Checked:
Sheet: 3 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

GeoTrans, Inc.

ADWR 55-583232

Well No. COA-MW4

MONITOR WELL CONSTRUCTION SUMMARY

Boring No. X-Ref:

Survey Coords: N 887001.313/E 566936.776

Elevation Ground Level:

Job Number: E025-104

Top of Casing: 968.28

Drilling Summary:		Construction Time Log:				
Total Depth	80'	Task	Date	Time	Date	Time
Borehole Diameter	9"	Drilling	10/20/00	835	10/20/00	1530
Casing Stick-Up	N/A					
Driller	THF					
Rig	AP1000					
Bit(s)		Geophys. Logging				
Drilling Fluid	N/A	Casing:	10/21/00	900	10/21/00	945
Protective Casing	N/A	Casing:				
Comments:						
Boring to 135'		Sand Pack:	10/21/00	1000	10/21/00	1045
Grout up to 90'		Filter Placement:				
5' Bentonite		Cementing:	10/21/00	1330	10/21/00	1350
Sand to 80'		Development:	10/30/00			1:45hr

Well Design & Specifications

Basis: Geologic Log ___X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Bailed and pumped

2" Grundfos variable frequency

Submersible pump installed at 70 feet bgs

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0 to 45	C1	
45 to 80	S1	

Casing:	C1	4" schedule 40 PVC
	C2	
Screen:	S1	4" schedule 40 PVC (0.020 slots)
	S2	
Filter Pack:		8/12 Colorado silica sand
Grout Seal:		10% Bentonite
Seal:		

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: Western Avenue Plume WQARF Site

Location: Avondale and Goodyear, Arizona

Supervised By: Azar Portugal

Date: 10/21/00

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW4 Start Date/Time: 10/20/00 End Date/Time: 10/20/00 Logged By: Azar Portugal

Drilling Method: AP-1000 Percussion Hammer — Angle from Vertical: Vertical

Borehole Diameter: 9 inches — Datum: 968.25

Surface Conditions: Concrete Sidewalk

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
101–105	21	SS	50/5"	5	5	1.6		**CLAY (CL)** Brown, wet, clay with some fine sand and gravel.
106–110	22	SS	50/5"	5	5	1.7		
111–115	23	SS	50/6"	6	6	1.8		
116–120	24	SS	5/5/5	18	12	2.0		**SILT (ML)** Light brown, dense, moist, silt
121–125	25	SS	50/4"	4	4	1.8		
126–130	26	SS	50/4"	4	3	1.6		
131–135	27	SS	1/1/1	18	12	N/A		
136–150								Total Depth 135 ft.

Drilling Contractor: THF

Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW4 Start Date/Time: 10/20/00 End Date/Time: 10/20/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 968.25
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
0								Ground Surface
1–4	1	SS	50/6"	6	0	N/A		NO RECOVERY
5–9	2	SS	50/1"	1	0	N/A		NO RECOVERY
10–14	3	SS	50/6"	6	6	1.8		SILT (ML) Light brown, dry, silt with fine sand and some gravel
15–19	4	SS	50/4"	4	4	1.6		
20–24	5	SS	50/1"	1	0	N/A		GRAVEL (GP) No Recovery.
25–29	6	SS	50/2"	2	1	1.4		GRAVEL (GP) Gravel with some silty sand
30–34	7	SS	50/5"	5	0	N/A		
35–39	8	SS	50/1"	1	1	1.3		
40–44	9	SS	50/1"	1	1	1.6		CLAY (CL) Brown, moist, hard, clay with fine sand, silt, and gravel.
45–49	10	SS	50/3"	3	3	N/A		CLAYEY GRAVEL (GC) Moist, medium to coarse gravel with silt and clay
50								

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 1 of 3

GeoTrans, Inc.
4685 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW4 Start Date/Time: 10/20/00 End Date/Time: 10/20/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 968.25
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	11	SS	50/4"	4	2	1.8		**CLAY (CL)** Light brown, moist, clay with fine sand and gravel.
56 57 58 59 60	12	SS	50/5"	5	4	2.2		
61 62 63 64 65	13	SS	50/2"	2	2	2.4		
66 67 68 69 70	14	SS	50/2"	2	1	1.3		
71 72 73 74 75	15	SS	5/5/5	18	12	1.3		**SILT (ML)** Brown, wet, with fine to medium sand and some gravel.
76 77 78 79 80	16	SS	50/2"	2	2	1.0		
81 82 83 84 85	17	SS	50/6"	6	6	1.7		
86 87 88 89 90	18	SS	5/10/15	18	12	2.3		
91 92 93 94 95	19	SS	50/2"	2	0	N/A		
96 97 98 99 100	20	SS	50/6"	6	6	1.7		

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

GeoTrans, Inc.

ADWR 55-583229

Well No. COA-MW5

MONITOR WELL CONSTRUCTION SUMMARY

Boring No. X-Ref:

Survey Coords: N 885807.446/ E 566944.364

Elevation Ground Level:

Job Number: E025-104

Top of Casing: 968.54

Drilling Summary:		Construction Time Log:				
Total Depth	80'	Task	Date	Time	Date	Time
Borehole Diameter	9"	Drilling	10/12/00	815	10/12/00	1415
Casing Stick-Up	N/A					
Driller	THF					
Rig	AP1000					
Bit(s)		Geophys. Logging				
Drilling Fluid	N/A	Casing:	10/13/00	1035	10/13/00	1130
Protective Casing	N/A	Casing:				
Comments:						
Boring to 135'		Sand Pack:	10/13/00	1135	10/13/00	1230
Grout up to 90'		Filter Placement:	10/13/00			
5' Bentonite		Cementing:	10/13/00	1340	10/13/00	1445
Sand to 80'		Development:	10/31/00			1 hr

Well Design & Specifications

Basis: Geologic Log ___X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Bailed and pumped

2" Grundfos variable frequency

Submersible pump installed at 70 feet bgs

Site Name: Western Avenue Plume WQARF Site

Location: Avondale and Goodyear, Arizona

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0 to 45	C1	
45 to 80	S1	

Casing:	C1	4" schedule 40 PVC
	C2	
Screen:	S1	4" schedule 40 PVC (0.020 slots)
	S2	
Filter Pack:		8/12 Colorado silica sand
Grout Seal:		10% Bentonite and cement
Seal:		

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Supervised By: Azar Portugal

Date: 10/13/00

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW5 Start Date/Time: 10/12/00 End Date/Time: 10/12/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 968.54
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
0								Ground Surface
1 2 3 4	0	-	-	-	-			**SILT (ML)** Light brown, moist, medium dense, silt with some clay
5 6 7 8 9 10	1	SS	-	12	8	3.0		
11 12 13 14	2	SS	5/10/15	18	12	2.5		**CLAY (CL)** Brown, moist, hard, Clay with fine to coarse sand and some gravel
15 16 17 18 19	3	SS	50/6"	6	6	3.0		
20 21 22 23 24	4	SS	50/6"	6	6	3.1		
25 26 27 28 29	5	SS	50/2"	2	2	3.0		
30 31 32 33 34	6	SS	50/2"	2	2	3.2		
35 36 37 38 39	7	SS	50/2"	2	2	2.0		
40 41 42 43 44	8	SS	50/1"	1	1	3.0		
45 46 47 48 49 50	9	SS	50/4"	4	3	0.0		**SILTY GRAVEL (GM)** Moist, gravel with silty fine sand.

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 1 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW5 Start Date/Time: 10/12/00 End Date/Time: 10/12/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 968.54
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
51–55	10	SS	50/1"	1	1	0.0		**GRAVEL (GW)** Gravel, some sand, trace silt.
56–60	11	SS	50/6"	6	3	3.2		
61–65	12	SS	50/6"	6	0			**CLAY (CL)** Wet, with silty fine sand.
66–69	13	SS	10/10/10	18	18	3.1		
70–75	14	SS	5/5/5	18	18	1.2		
76–80	15	SS	1/2/3	18	18	0		
81–85	16	SS	1/1/1	18	18	1.1		**SILT (ML)** Brown, wet, silt with fine sand and some clay.
86–90	17	SS	10/15/20	18	18	2.3		
91–95	18	SS	5/5/10	18	18	1.9		
96–100	19	SS	5/5/5	18	12	0		

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW5 Start Date/Time: 10/12/00 End Date/Time: 10/12/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 968.54
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
101 102 103 104 105	20	SS	5/10/10	18	18	2.3		**CLAY (CL)** Light Brown to Brown, wet, clay with fine sand.
106 107 108 109 110	21	SS	10/20/20	18	18	1.8		
111 112 113 114 115	22	SS	50/6"	6	5	2.1		
116 117 118 119 120	23	SS	10/10/15	18	12	1.3		
121 122 123 124 125	24	SS	10/10/10	18	18	0		
126 127 128 129 130	25	SS	1/1/1	18	7	2.3		
131 132 133 134 135	26	SS	1/1/1	18	10	3.1		**SILT (ML)** Light brown, wet, silt and clay with some gravel
136 137 138 139 140	27	SS	10/10/20	-	-	2.3		
141 142 143 144 145 146 147 148 149 150								Total Depth 135 ft.

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 3 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

GeoTrans, Inc.

ADWR 55-583230

Well No. COA-MW6

MONITOR WELL CONSTRUCTION SUMMARY

Boring No. X-Ref:

Survey Coords: N 884725.065/E 566969.854

Elevation Ground Level:

Job Number: E025-104

Top of Casing: 970.41

Drilling Summary:		Construction Time Log:				
Total Depth	80'	Task	Date	Time	Date	Time
Borehole Diameter	9"	Drilling	10/17/00	800	10/17/00	1430
Casing Stick-Up	N/A					
Driller	THF					
Rig	AP1000					
Bit(s)		Geophys. Logging				
Drilling Fluid	N/A	Casing:	10/18/00	1030	10/18/00	1100
Protective Casing	N/A	Casing:				
Comments:						
Boring to 135'		Sand Pack:	10/18/00	1130	10/18/00	1200
Grout up to 90'		Filter Placement:	10/18/00			
5' Bentonite		Cementing:	10/18/00	1315	10/18/00	1420
Sand to 80'		Development:	10/31/00			1:30hr

Well Design & Specifications

Basis: Geologic Log ___X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Bailed and pumped

2" Grundfos variable frequency

Submersible pump installed at 70 feet bgs

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0 to 45	C1	
45 to 80	S1	

Casing:	C1	4" schedule 40 PVC
	C2	
Screen:	S1	4" schedule 40 PVC (0.020 slots)
	S2	
Filter Pack:		8/12 Colorado silica sand
Grout Seal:		10% Bentonite and cement
Seal:		

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: Western Avenue Plume WQARF Site

Location: Avondale and Goodyear, Arizona

Supervised By: Azar Portugal

Date: 10/18/00

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW6 Start Date/Time: 10/16/00 End Date/Time: 10/17/00 Logged By: A.Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 970.41
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
0								Ground Surface
1 2 3 4	0	-	-	-	-			
5 6 7 8 9 10	1	SS	50/4"	4	4			**SILT (ML)** Light brown, moist, medium dense, silt with some clay
11 12 13 14 15	2	SS	5/10/15	18	12			**CLAY (CL)** Brown, hard, clay with fine to coarse sand and some gravel.
16 17 18 19 20	3	SS	50/6"	6	6			
21 22 23 24 25	4	SS	10/5/5	18	12			
26 27 28 29 30	5	SS	50/2"	2	2			
31 32 33 34 35	6	SS	50/2"	2	2			
36 37 38 39 40	7	SS	50/1"	1	1			
41 42 43 44 45	8	SS	50/4"	4	3			
46 47 48 49 50	9	SS	50/2"	2	1			**SILTY GRAVEL (GM)** Moist, dense, Gravel with silty fine sand.

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 1 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW6 Start Date/Time: 10/16/00 End Date/Time: 10/17/00 Logged By: A.Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 970.41
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
51-54	10	SS	50/6"	6	6			**SAND (SP)** Moist, loose, sand with some gravel and trace silt.
55-60	11	SS	50/10"	10	10			
61-64	12	SS	50/6"	6	6			**CLAY (CL)** Moist, clay with fine silty sand and trace gravel.
65-69	13	SS	10/5/5	18	18			
70-74	14	SS	12/9/6	18	12			
75-79	15	SS	3/5/5	18	6			
80-84	16	SS	5/5/5	18	14			
85-89	17	SS	50/4"	4	0			**SILT (ML)** Silt with fine sand.
90-94	18	SS	5/5/5	18	12			
95-100	19	SS	5/5/5	18	6			

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	**Project No:** E025-104 **Client:** THF Drilling **Site:** Western Avenue WQARF Site	**Borehole No:** COA-MW6 **Start Date/Time:** 10/16/00 **End Date/Time:** 10/17/00 **Logged By:** A.Portugal
	Drilling Method: AP-1000 Percussion Hammer **Borehole Diameter:** 9 inches	**Angle from Vertical:** Vertical **Datum:** 970.41
	Surface Conditions: Concrete Sidewalk	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
101 102 103 104 105	20	SS	5/10/5	18	12			
106 107 108 109 110	21	SS	10/10/10	18	12			**SILTY GRAVEL (GM)** Brown, wet, gravel with fine silty sand
111 112 113 114 115	22	SS	50/5"	5	4			
116 117 118 119 120	23	SS	5/5/10	18	10			
121 122 123 124 125	24	SS	50/4"	4	4			
126 127 128 129 130	25	SS	5/5/5	18	10			**SILT (ML)** Silt with clay
131 132 133 134 135	26	SS	5/5/10	18	10			
136 137 138 139 140	27	SS	5/5/5	18	14			
141 142 143 144 145 146 147 148 149 150								Total Depth 135 ft.

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

GeoTrans, Inc.

ADWR 55-583228

MONITOR WELL CONSTRUCTION SUMMARY

Well No. COA-MW7

Boring No. X-Ref:

Survey Coords: N 885089.237/E 565858.631

Elevation Ground Level:

Job Number: E025-104

Top of Casing: 962.56

Drilling Summary:		Construction Time Log:				
Total Depth	80'	Task	Date	Time	Date	Time
Borehole Diameter	9"	Drilling	10/10/00	915	10/10/00	1645
Casing Stick-Up	N/A					
Driller	THF					
Rig	AP1000					
Bit(s)		Geophys. Logging				
Drilling Fluid	N/A	Casing:	10/11/00	915	10/11/00	1030
Protective Casing	N/A	Casing:				
Comments:						
Boring to 135'		Sand Pack:	10/11/00	1030	10/11/00	1130
Grout up to 90'		Filter Placement:				
5' Bentonite		Cementing:	10/11/00	1130	10/11/00	1230
Sand to 80'		Development:	10/30/00			1:30hr

Well Design & Specifications

Basis: Geologic Log ___X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Bailed and pumped

2" Grundfos variable frequency

Submersible pump installed at 64 feet bgs

Site Name: Western Avenue Plume WQARF Site

Location: Avondale and Goodyear, Arizona

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0 to 45	C1	
45 to 80	S1	

Casing:	C1	4" schedule 40 PVC
	C2	
Screen:	S1	4" schedule 40 PVC (0.020 slots)
	S2	
Filter Pack:		8/12 Colorado silica sand
Grout Seal:		10% Bentonite and cement
Seal:		

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Supervised By: Azar Portugal

Date: 10/11/00

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW7 Start Date/Time: 10/10/00 End Date/Time: 10/10/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches Surface Conditions: Asphalt	Angle from Vertical: Vertical Datum: 962.56

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
0								Ground Surface
1–5	1	SS	10/10/10	1.5	1.5	2.1		**CLAY (CL)** Light brown, moist, clay and silt
6–10	2	SS	10/10/10	1.5	1.5	6.7		
11–15	3	SS	50/2"	1.5	8	7.1		**SILT (ML)** Light brown, moist, silt and sand with trace gravel.
16–20	4	SS	50/1"	8	8	6.7		
21–25	5	SS	50/1"	10	8	6.1		**SILTY SAND (SM)** Light brown, moist, silty fine sand and some gravel
26–30	6	SS	50/2"	10	8	7.6		
31–35	7	SS	50/1"	1	1	7.0		**GRAVEL (GP)** Varied color, moist, gravel with sand and trace cobbles.
36–40	8	SS	50/.5"	.5	0	N/A		
41–45	9	SS	50/3"	3	2	4.8		
46–50	10	SS	50/2"	4	3	3.1		

Drilling Contractor: THF
Checked By:
Date Checked:

Sheet: 1 of 3

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2600 Fax: 480-839-2828

Site Map	Project No: E025-104 Client: THF Drilling Site: Western Avenue WQARF Site	Borehole No: COA-MW7 Start Date/Time: 10/10/00 End Date/Time: 10/10/00 Logged By: Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer Borehole Diameter: 9 inches	Angle from Vertical: Vertical Datum: 962.56
	Surface Conditions: Asphalt	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	11	SS	50/2"	2	1	3.2		**CLAY (CL)** Moist, clay and silt, trace gravel
56 57 58 59 60	12	SS	50/4"	4	2	4.5		**CLAYEY GRAVEL (GC)** Gray, moist, clayey-silty gravel
61 62 63 64 65	13	SS	50/6"	6	6	6.3		**GRAVEL (GW)** Wet, fine to coarse gravel and sand
66 67 68 69 70	14	SS	5/10/15	12	-	4.8		
71 72 73 74 75	15	SS	5/10/15	18	12	5.2		**CLAY (CL)** Light brown, moist, clay with silt and fine sand, trace gravel.
76 77 78 79 80	16	SS	5/10/10	18	12			
81 82 83 84 85	17	SS	10/10	10	8	4.8		
86 87 88 89 90	18	SS	5/5/5	18	12	5.7		
91 92 93 94 95	19	SS	5/5/10	18	10	6.1		
96 97 98 99 100	20	SS	5/5/10	12	8	7.1		

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	**Project No:** E025-104 **Client:** THF Drilling **Site:** Western Avenue WQARF Site	**Borehole No:** COA-MW7 **Start Date/Time:** 10/10/00 **End Date/Time:** 10/10/00 **Logged By:** Azar Portugal
	Drilling Method: AP-1000 Percussion Hammer **Borehole Diameter:** 9 inches	**Angle from Vertical:** Vertical **Datum:** 962.56
	Surface Conditions: Asphalt	

Depth	Sample Number	Sample Type (SS=Split Spoon, C=Cuttings, O=Other)	Blow Counts/6"	Inches Driven	Inches Recovered	PID (ppm)	Lithology	Description and Comments
101 102 103 104 105	21	SS	5/5/5	12	10	6.4		
106 107 108 109 110	22	SS	5/5/5	10	8	5.3		**SILT (ML)** Brown, moist to wet, silt and clay with trace of gravel and sand.
111 112 113 114 115	23	SS	5/5/10	18	12	7.3		
116 117 118 119 120	24	SS	5/10/15	18	12	6.3		
121 122 123 124 125	25	SS	5/5/5	18	14	5.2		
126 127 128 129 130	26	SS	5/10/10	18	14	4.8		
131 132 133 134 135	27	SS	10/10/10	18	12	3.2		
136 137 138 139 140 141 142 143 144 145 146 147 148 149 150								Total Depth 135 ft.

Drilling Contractor: THF
Checked By:
Date Checked:

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

GMW-4

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Goodyear AeroSpace
Name
P.O. Box 85 Litchfield Park Az. 85340
Mailing Address

2. Driller R. Stewart
Name
Box 2067 Milan, N.M. 87021
Mailing Address

3. Location of well: 1N 1W 15 SW NW NW

4. Permit No. _____
(if issued)

RECEIVED DEC 11 1986 DEPT. OF WATER RESOURCES

DESCRIPTION OF WELL

5. Total depth of hole 100' ft.

6. Type of casing 4" Sch. 40 PVC

7. Diameter and length of casing 4 in. from +2 to 78.5', 7 in from +1.5 to 20.

8. Method of sealing at reduction points grout

9. Perforated from 57.5 to 78.5, from ____ to ____, from ____ to ____.

10. Size of cuts .020 Number of cuts per foot Wire Wrapped Screen

11. If screen was installed: Length 20 ft. Diam 4 in. Type PVC

12. Method of construction drilled Mud Rotary
drilled, dug, driven, bored, jetted, etc.

13. Date started 10 (Month) 7 (Day) 86 (Year)

14. Date completed 10 (Month) 10 (Day) 86 (Year)

15. Depth to water 51.5 below Ground ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level

17. If flowing well, state method of flow regulation: _____

18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-515525
Received _____ By _____

LOG OF WELL

at which water was first encountered, and the depth and thi beds. If water is artesian, indicate depth at which encountered, and which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Clay
20	34	SAND
34	80	SAND + Gravel with clay layers.
80	100	Clay w/sand layers.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Randal R Stewart
Name

BOX 2067
Address

MILAN NM 87021
City State Zip

Date 10/10/86

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

DEPARTMENT OF WATER RESOURCES (DWR)
NOTICE OF INTENTION TO DRILL
MONITOR/PIEZOMETER WELL

MONITOR/PIEZOMETER WELL

Section 45-596, Arizona Revised Statutes and Rule R12-15-813 provide: Prior to drilling a monitor or piezometer well, the well owner or lessee shall file a Notice of Intention to Drill on a form provided by the Department.

RECEIVED SEP 8 1986 DEPT. OF WATER RESOURCES

RECEIVED SEP 12 1986 DEPT. OF WATER RESOURCES

WELL/LAND LOCATION

1. Township 1N N/S
   Range 1W E/W
   Section 15

List 10-acre subdivision
SW ¼, NW ¼, NW ¼

2. County Maricopa

3. Applicant:
   Goodyear Aerospace
   Name
   P. O. Box 85
   Address
   Litchfield Park AZ 85340
   City State Zip

4. Randolph J. Clark
   NAME OF CONTACT PERSON
   Phone: 925-7274
   Agency: Goodyear Aerospace

5. Owner of well:
   Goodyear Aerospace
   Name
   P. O. Box 85
   Address
   Litchfield Park AZ 85340
   City State Zip

6. Purpose of well drilled pursuant to this Notice:
   Monitor X
   Piezometer

7. Owner of land:
   Goodyear Aerospace
   Name
   P. O. Box 85
   Address
   Litchfield Park AZ 85340
   City State Zip
   925-7274
   Telephone number

8. Construction will start:
   9 15 86
   Month Day Year

9. Period well will remain in use: 5 years months/years

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. B(1-1) 15 bbc
Filed 9-12-86 By ek
Input ENTERED SEP 17 1986 By
Duplicate Mailed 9-16-86 By ek
Registration No. 55-515525
AMA/INA PKF
W/S 06 S/B 04

10. For monitoring wells, is pump equipment to be installed? yes

(a) If so, what will be the design pump capacity?
5 gallons per minute

(b) Type of pump (submersible, turbine, etc.)
turbine

(c) What use will be made of the water?
sampling only

11. Proposed method of abandonment of well after project is completed:
Grout from bottom of borehole to surface

12. Drilling firm:
Stewart Bros. Drilling
Name
P. O. Box 2067
Address
Grants NM 87021
City State Zip
314
DWR License Number

(continued on reverse)

HYDROLOGY APPROVED

GENERAL INSTRUCTIONS

Fill out this form in duplicate and mail to Department of Water Resources, Suite 100, 99 East Virginia, Phoenix, Arizona 85004. Filing fee must accompany notice.

MICROFILMED

I state that this Notice is filed in compliance with Rule R12-15-809 and is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

DATE 9-5-86

Randolph J. Clark
Signature of Applicant

DWR 55-82-8/86 (Revised)

13. Is this well to monitor existing contamination? yes Potential contamination? ____
Please explain TCE and chromium contamination connected with Phoenix-Goodyear Airport CERCLA action.

14. If construction plans have been coordinated with Az. Dept. Health Services, Environmental Health Division, who is the agency contact? ____
If construction plans have been coordinated with Az. Dept. Water Resources, Hydrology/Remedial Action Division, who is the division contact? Debbie Toslene

15. WELL CONSTRUCTION PLAN

a) Drilling method (mud rotary, hollow-stem auger, etc.) mud rotary

b) Borehole diameters: 10 inches from 0 feet to 100 feet
____ inches from ____ feet to ____ feet
____ inches from ____ feet to ____ feet

c) Casing materials (PVC, steel, stainless steel, etc.):
material PVC diameter 4 inches from 0 feet to 100 feet
material Steel diameter 6 inches from 0 feet to 20 feet
material ____ diameter ____ inches from ____ feet to ____ feet

d) Method of sealing at reductions N/A

e) Annular seal materials (cement, grout, etc.) and method of placement(tremied,circulated:)
material cement method tremied from 0 feet to 70 feet
material Bentonite method ____ from 70 feet to 75 feet
material ____ method ____ from ____ feet to ____ feet

f) Gravel packs (state material, and whether natural or artificial):
material pea gravel from 75 feet to 100 feet
material ____ from ____ feet to ____ feet

g) Perforations (if pre-manufactured, please give specs of perforations or screens):
type 4" PVA #20 Factory Slotted from 75 feet to 95 feet
type ____ from ____ feet to ____ feet

h) Method of well development (bail, air lift, surge) pump or air lift

i) Will surface or conductor casing extending above grade be used to protect the aquifer from additional surface contaminants during drilling and construction?

16. Include detailed construction diagram, if available.

17. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials? Yes__ No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

CONDITIONS

I. Construction and abandonment standards for all wells shall be in accordance with DWR rules R12-15-811 and R12-15-816.
II. Drilling of the well shall be completed within one (1) year after the date of Notice.
III. A Well Driller Report, DWR-55-6-5/88, is required within 30 days of completion of drilling. A Completion Report, DWR-55-7-5/83, is required to be filed with the Department within 10 days after installation of pump equipment for monitor wells.
IV. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the minimum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual amount of 10 acre feet total.
V. Special construction standards required pursuant to R12-15-821: ____

RECEIVED MAY 14 1987 DEPT. OF WATER RESOURCES

DEPARTMENT OF WATER RESOURCES
99 East Virginia
Phoenix, Arizona 85004

Registration No. 55-515525

Owner of Well Site Loral (Goodyear Aerospace)

File No. B(1-1)15bbc

COMPLETION REPORT

1. Per A.R.S. §45-600, the Completion Report to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.
3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

LOCATION OF THE WELL:

1N	1W	15	SW NW NW
Township	Range	Section	¼ ¼ ¼

EQUIPMENT INSTALLED:

Kind of pump Turbine
Turbine, centrifugal, etc.

Kind of power Electric H.P. Rating of Motor 1/3
Electric, natural gas, gasoline, etc.

Pumping Capacity 10 Date installed 11/22/86
Gallons per minute

WELL TEST:

Test pumping capacity _____ Date Well Tested _____
Gallons per minute

Method of Discharge Measurement _____
Weir, orifice, current meter, etc.

Static Groundwater Level _____ ft. Drawdown _____ ft.

Total Pumping Lift _____ ft. Drawdown _____ lbs
(Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

May 12, 1987
DATE

R J Clark
Signature R. J. Clark

P. O. Box 85
Address

Litchfield Park, Arizona 85340
City State Zip

ENTERED MAY 15 1987

DWR-55-7-3/84

LORAL
SYSTEMS GROUP
A DIVISION OF LORAL CORPORATION

DEFENSE SYSTEMS DIVISION, ARIZONA

P.O. Box 85
Litchfield Park, Arizona 85340-0085

58-100014

RECEIVED
R 17 1987
WATER RESOURCES

April 14, 1987

RECEIVED
APR 23 1987
DEP'T OF WATER RESOURCES

Arizona Department of Water Resources
99 East Virginia
Phoenix, Arizona 85004

Dear Sir or Madam:

As part of a nationwide transaction, the facility formerly known as Goodyear Aerospace Corporation, Arizona Division, will henceforth be identified as:

Loral Corporation
Defense Systems Division - Arizona
P. O. Box 85
Litchfield Park, Arizona 85340-0085

This will not result in any change in the facility management or operations and will not affect our ability to comply with environmental requirements.

Please note this change with respect to grandfathered groundwater right certificate no. 58-100014. If you have any questions, you may contact me at 925-7274.

Sincerely,

R. Clark

Randy Clark
Environmental Coordinator

cc: Dave Chapman
Wally Ito
Dave Sweet
U.S. EPA Region IX

Reporting Party changed
4/24/87 - [illegible]

MICROFILMED
ENTERED APR 27 1987

State of Arizona

DEPARTMENT OF WATER RESOURCES

99 E. Virginia Avenue, Phoenix, Arizona 85004

9/16/86

BRUCE BABBITT, Governor
KATHLEEN FERRIS, Director

55-515525
Registration No. 55-515520 55515522 55-515524
File No. B(1-1)15bcc B(1-1)16aab B(1-1)16aaa
B(1-1)15bbc

GOODYEAR AEROSPACE
P O BOX 85
LITCHFIELD PARK AZ 85340

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill an exploration well which was recently filed with this Department. This is returned to you as evidence of compliance with A.R.S. §45-596. Your designated driller has been mailed separately a Well Drilling Card which he is required to have in his possession before commencing to drill the well.

X Since this well is being drilled as a monitor well, or for cathodic protection, grounding, geotechnical or piezometer purposes, our standard driller report form is also being furnished to the driller which he is required to complete and return to the Department within 30 days after the completion of drilling. A Completion Report form is being furnished for monitor wells where pump equipment is authorized to be installed as part of this packet so that you may submit the report within 30 days after the installation of pumping equipment on a monitor well as required by A.R.S. §45-600.

___ This well is authorized to be drilled for mineral exploration purposes. Because of this, no pump equipment may be installed. A Project Completion Report is being furnished your designated driller for each hole to be drilled. Your driller is required to submit this Project Completion Report within 30 days after completion of drilling. You should insist that this is done.

For monitor, geotechnical, cathodic protection, grounding and piezometer wells, you should obtain the written permission of the Department of Water Resources before proceeding with the drilling in the event that you determine it necessary to change the location of the proposed well. A properly signed amended Drilling Card must be in the possession of the driller before drilling commences at a different location than originally authorized.

For your future use, a Change of Well Information form is enclosed should it become needed. Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, including abandonment, in order to keep the well registration file current and accurate.

Sincerely,

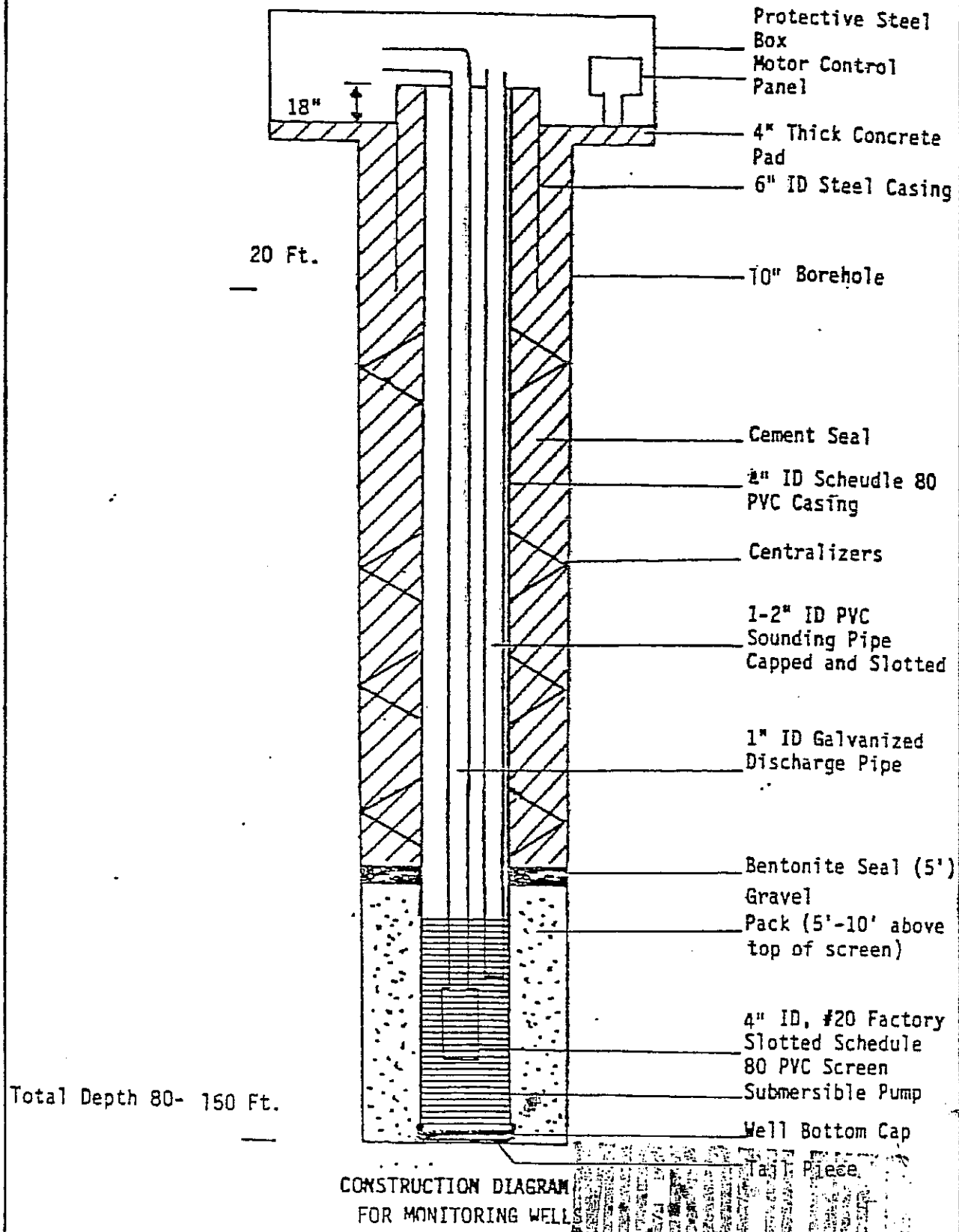
R. A. Gessner
Chief, Operations Division

RAG: ek
Enclosures
DWR-55-8-8/84

DECLASSIFIED

Think Conservation!

Office of Director 255-1554
Administration 255-1550, Water Resources and Flood Control Planning 255-1566, Dam Safety 255-1541,
Flood Warning Office 255-1548, Water Rights Administration 255-1581, Hydrology 255-1586.



CONSTRUCTION DIAGRAM FOR MONITORING WELLS

FIGURE 3

PHOENIX-LITCHFIELD AIRPORT AREA R.I.

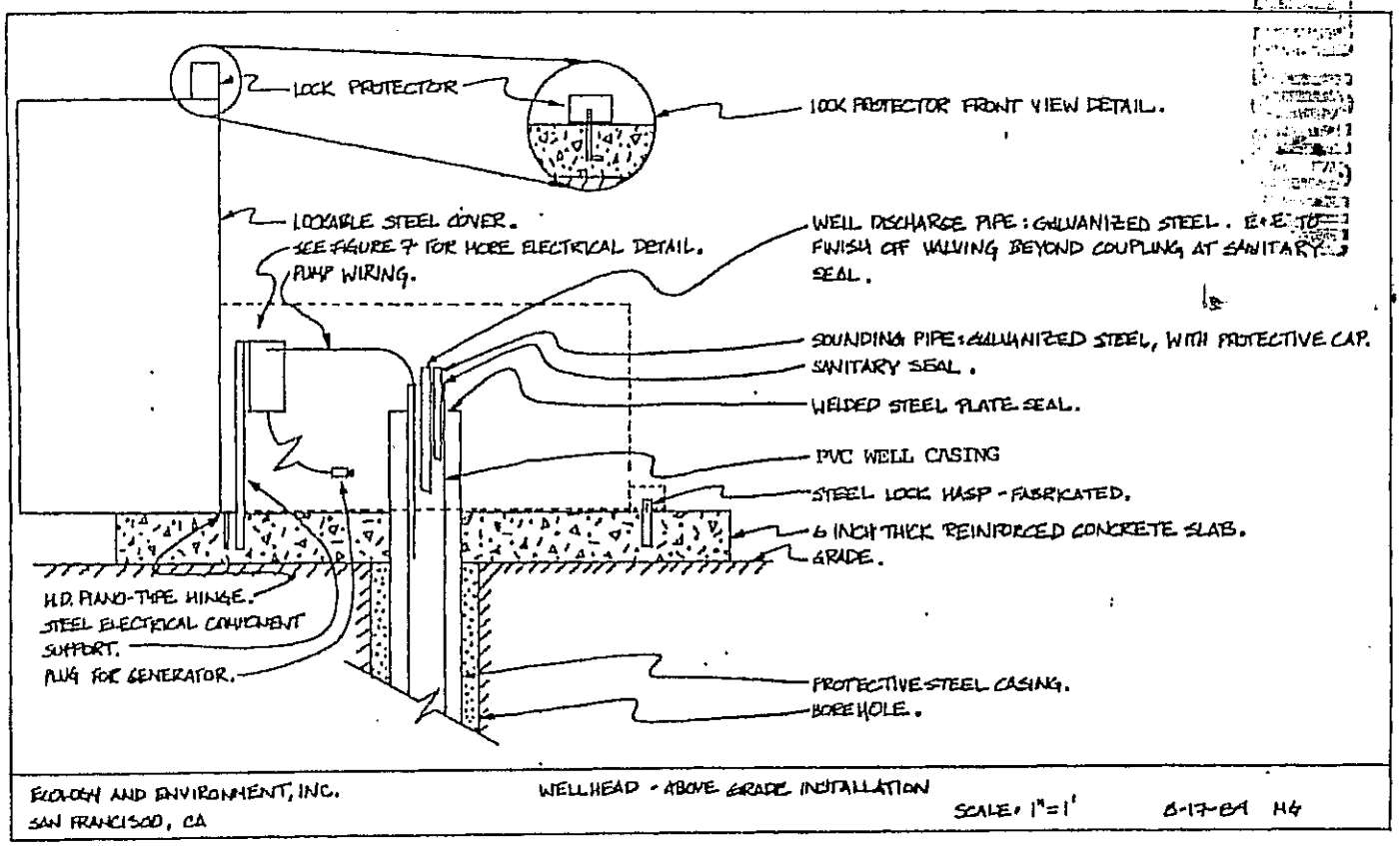


FIGURE 4

PHOENIX - LITCHFIELD AIRPORT AREA R.I.

ES ENGINEERING-SCIENCE

GOODYEAR AEROSPACE CORP
P O 85
LITCHFIELD PARK AZ 85340

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	515510
	THRU
55	515528

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					FILING FEE FOR NOTICES OF INTENTION TO DRILL EXPLORATION WELLS	10.00	190.00

FILE#	REGISTRATION#
B(1-1)16adc	55-515523
B(1-1)16ada	55-515524
B(1-1)15bbc	55-515525
B(1-1)16aac	55-515526
B(1-1)16adb	55-515527
B(1-1)16adb	55-515528

FILE#	REGISTRATION #
B(1-1)16acd	55-515510
B(1-1)16adc	55-515511
B(1-1)16dab	55-515512
B(1-1)16dba	55-515513
B(1-1)16dbb	55-515514
B(1-1)16abd	55-515515
B(1-1)21bbc	55-515516
B(1-1)16baa	55-515517
B(1-1)16bdb	55-515518
B(1-1)16cbb	55-515519
B(1-1)15bcc	55-515520
B(1-1)16cdb	55-515521
B(1-1)16aab	55-515522

SEP 1986 PAID

TOTAL $ 190.00

9/16/86/ek

CHECK#82309

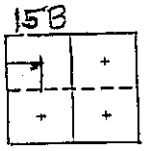
DRILLING LOG

Well/Boring Number: 15-GMW-4
Project: GAC /PLA RI Phase II
Project Number: 46351.00
Date Started: 10/7/86 1245 hrs
Date Completed: 10/10/86 0845 hrs

Geologist: L. Schnelle
Driller: Danny White
Geophysical Logger: NONE
Permit Number: 55-515525
Property Owner: GOODYEAR AEROSPACE CORP.

LOCATION

15B



(B-1-1)15 BBB3

SW 1/4 of NW 1/4 of NW 1/4
Section 15 T 1N R 1W
County Maricopa State Arizona

N.
E.
Elevation ±

Drilling Method: Mud Rotary
Samples: Piezometer
Rig Make and Model: Gardner-Denver 1500
Drill Bit Diameter: 5 and 9 7/8 inch

Logs
Res. SP Gam. G-Den. Neut. Calip. Dev. Sonic

Pipe dope used
Lithologic only

DRILLING, CORING, BIT AND CASING RECORD

Diameter	Depth From	Depth To	Notes
5-inch	Surface	110 ft	drill bit hole
9 7/8-inch	Surface	100 ft	drill bit hole
4-inch	+1.9 ft.	78.5 ft	PVC casing
6 1/4 inch	+1.5 ft.	20 ft.	steel casing

ADDITIVES USED

Depth From	Depth To	Additives
		SH-1200L Polymer base mud
0	110 ft	Drill Pac Acrylic loss control
		Soda ash
40	80	Vermiculite
0	110 ft	Bentonite Powder.

Many # bags Borax granule added to help hold fluid loss & Grade

Notes: SH-1200L : 50% active water free, liquid grade, anionic, acrylamide copolymer (* has been analyzed for volatile organics with no recovered organics)

DRILL LOG

WELL/BORING NUMBER 15GMW-4 ELEVATION _____ DATE * 10-7-86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnello

DRILL METHOD Mud Rotary _____ PAGE 1 OF 5

WATER LEVEL FIRST ENCOUNTERED ~~62 feet~~ (?) 52 feet FINAL 53.39 ⊕ - 1.90 stickup above parking lot
~~51.49 below ground level~~ ⊕ taken 10/10/86 at 10:40 hrs
& taken 10/11/86 (same level)

(* actual depth drld to contacts are 0.5 foot lower for 5-inch and 1.5 feet lower for 10-inch bit from indicated depths)

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
0					
5				tan clay (50%) (caliche), moderately to highly plastic with brown clay (50%) interlayers	
10				brown silty clay (60%) (slightly moist) with some fine sand (<5%) and more tan clay (caliche) interlayered or recirculated (40%)	
		*got some sand, gravel & possibly hard caliche layers			
15		clay (tan & brown)		brown sandy silty clay (60%) with some tan clay (caliche) (30%) and with fine sand interlayers (some coarse sand) (5-10%) <5%	
20		sand (coarse to med.)		coarse grained (50-70%) multicolored sand (some very coarse and some medium-grained sand content (5-10%)); ⇒ primarily qtz sand (20-30%) with metamorphic components; moderately to well sorted, subrounded to rounded.	
25					

* rechecked during borehole ream on 10/9/86

DRILL LOG

WELL/BORING NUMBER 15 GMW-4 ELEVATION _____ DATE 10/7/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 2 OF 5

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
25	clay layer (mostly sand)			30% interlayered clay (lt. brown) with fine to med-grained sand (50-60%) and some coarse to very coarse sand & gravel pebbles, angular to rectangular gravel cuts and rounded (well rounded sand)	begin losing circulation of mud drlg fluids (20-40% loss) (2 pits worth)
30	poorly sorted sand			encountered coarse gravel or cobble rock; poorly sorted sand (multicolored) 40-60% coarse to very coarse-grained; 10% fine grained; 10-20% med-grained; 10% gravel (jagged cut edges)	{60% silica, 40% other igneous & metamorphic rocks}
35	gravel to cobbles & sand			50-75% gravel (fine to coarse) → subangular to jagged; ignous (volcanic) and metamorphic composition (60-80%); 97 = 20-40%; 20% coarse to v. coarse sand & pebbles; 70% med grained to fine-grained sand	{subrounded to well rounded}
40	clay & sand			poorly sorted fine to medium-grained sand (angular to well rounded) (coarse grains) (fine grains) fine (40-60%) med (20-40%), coarse (≤20%)	{50-60% silica, 50-40% metamorp}
45	gravel & cobbles (tight)			gravel & pebbles (mostly ignous & metam.) angular to subrounde (60-70%); fine to med sand (20%); coarse sand (≤10%)	
	gravel				
50					

*heavy cobbles & gravel make drilling difficult, upper redrilling

DRILL LOG

WELL/BORING NUMBER 15GMW-4 ELEVATION _____ DATE 10/7/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 3 OF 5

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
50	▽ water level			← rhyolitic (igneous) pink to ~~purple~~ gravel & pebbles (50-70%)	
	↓ soft drilling again (water table)			10% qtz sand (coarse) & pebbles 20% fine to med sand	50-65 ft loss of circulation to about 1½ pits
55	↓ gravel again			→ 10-20% brown silty clay layers, poorly sorted sand fine to v. coarse 60-80% of sample pebbles & grvl. (70%)	
	~~5~~ soft zone				
60				→ more rhyolitic (igneous) gravel (angular, rust-red cuts) 40%; fine qtz sand 40-60% med. grained rhyolitic & qtz / metam. sd (<15%) (some silt to clay layers (<5%)	
	water table (?)				
	↓ coarse gravel to pebbles				
65	soft			→ 50-60% coarse sd to gravel-sized metamorphic & qtz rocks, 40-50% fine to med-grained sand of same composition	
	coarse drlg				
	variable sand w/ gravel IB				
70				SAA except more med-sd. less fine-sd.	
75				SAA lose fine sd (more qtz grvl & sd) med (35%), coarse (25%), grvl (25%), fine sd (15%)	

DRILL LOG

WELL/BORING NUMBER 15-GMW-4 ELEVATION _____ DATE 10/7/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 4 OF 5

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
75	sand w/ gravel beds				
80	clay shows on 10 inch			→ SAA (previous page) hole	
85	gravel beds drop out less and mostly clay			→ light brown to brown silty clay (80-85%) (moderately to highly plastic) with some silt & fine sand layers (5-10%) pebbles & coarse gravel layers possibly (metamorphic & qtz) 1/2 inc at some layers (rounded to well rounded) (10-20%)	
90	mostly clay w/ some sand beds			→ brown silty clay w/ some fine to v. fine sand & silt IB's and less gravel than above (subround to well rounded) sand (<20%), gvl. & pebbles (<15%) 70-80% clay (70-70%)	
95				→ brown fine to v. fine sandy silty clay (wet) with <15% fine sand layers and <15% gravel	
100					

DRILL LOG

WELL/BORING NUMBER 15-6MW-4 ELEVATION _____ DATE 10/7/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 5 OF 5

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
100				→ 70-85% brown sandy to silty clay (wet) with fine to v. fine sd (<30%) interlayers and possibly some gravel or pebble layers	
105				→ 60-85% brown to light brown silty and sandy clay <30% fine to v. fine sd and <20% coarse sand to pebble gravel layers (if not slough from above at 80 feet) (90-100%)	
110'	T.D. for 5" hole			→ moist red brown to brown silty clay w/ fine to v. fine sand (possibly gravel layers if not slough) 1/2 size gravel (sub angular to rounded) metamorphics <5% sd fine to med grained; moist to wet clay slightly to moderately plastic.	
				*decided to screen well from 65-85 feet below ground with 5 foot of open hole below the screen, filter pack with pea gravel to (55) or 60 feet then bentonite seal & grout w/ 20 feet of surface casing.	

WELL/PIEZOMETER COMPLETION DIAGRAM

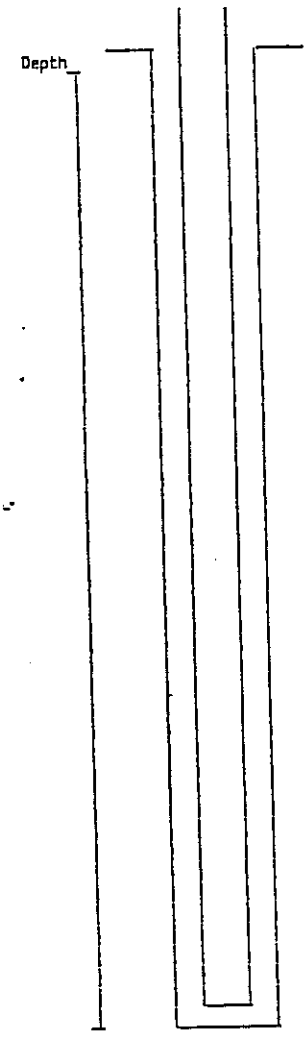
Piezometer Number 15-GMW-4

Project GAC/PLA RI Phase II

Aquifer Upper Alluvial Unit

Static Water Level 51.49 feet (10/10/86)

Depth



Geologist LEE SCHNELLE

Driller DANNY WHITE

Date of Installation OCTOBER 9, 1986

Hole Depth 110 feet (5 inch), 100 feet (10-inch)

Stickup 1.9 feet (PVC), 1.5 feet (6 5/8" steel)

Protective Casing +1.5' to 20' Total 21.5'

Well Casing +2 to 78.5 Total 80.5

Top Seal

Bentonite Plug (Pellets) from 48 to 50

Portland/Bentonite Grout from Surface to 48

Hole Diameter 10 inch (9 7/8)

Casing Diameter 6 5/4 inch

Well Casing Depth 78.5 feet (54.4 blank, 24 slotted)

Screen Diameter 4 inch I.D.

Centralizers 46.5 and 68 feet

Pump Type

Pump Capacity

Pump Setting

Average Pumping

Remarks * hole collapsed back from 100 to 78.5 feet at upper gravel and underlying clay strata contact on two attempts to set screen. — note: original blank pipe (5 feet) on end of screen was dropped from spec's in order to set the screen at a lower level.

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

GMW-5

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Goodyear Aerospace
Name
Bx 85 Litchfield Park Az. 85340
Mailing Address

2. Driller R. Stewart
Name
Bx 2067 Milan N.M. 87021
Mailing Address

3. Location of well: 1N 1W 15 SW SW NW

4. Permit No. Lis. 314 Regis. 515520
(if issued)

RECEIVED DEC 1 1986 DEPT. OF WATER RESOURCES

DESCRIPTION OF WELL

5. Total depth of hole 80' ft.

6. Type of casing 4" PVC Schedule 40

7. Diameter and length of casing 4 in. from +2.7 to 73, 7 in from 1.5 to 20.

8. Method of sealing at reduction points grout

9. Perforated from 52.5 to 73.5, from ____ to ____, from ____ to ____.

10. Size of cuts .020 Number of cuts per foot ____

11. If screen was installed: Length 20 ft. Diam 4 in. Type Johnson Wire Wrap

12. Method of construction Mud Rotary
drilled, dug, driven, bored, jetted, etc.

13. Date started 10 (Month) 10 (Day) 86 (Year)

14. Date completed 10 (Month) 11 (Day) 86 (Year)

15. Depth to water 48.9 ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Groundlevel

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-515520
Received ____ By ____
Entered ENTERED DEC 02 1986 By ____
File No. B(1-1)15bcc

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	18	Clay
18	18	Sand
18	67	Gravel, Sand w/ Clay Layers.
67	80	Clay w/ Sand + Gravel layers
80		

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Randal P Stewart
Name

Bx 2067
Address

Milan NM 87021
City State Zip

Date 10/4/86

MONITOR/PIEZOMETER WELL

FILING FEE $10.00

DEPARTMENT OF WATER RESOURCES (DWR)
NOTICE OF INTENTION TO DRILL
MONITOR/PIEZOMETER WELL

MONITOR/PIEZOMETER WELL

Section 45-596, Arizona Revised Statutes and Rule R12-15-817 provide: Prior to drilling a monitor or piezometer well, the well owner or lessee shall file a Notice of Intention to Drill on a form provided by the Department.

RECEIVED SEP 12 1986 DEPT. OF WATER RESOURCES

RECEIVED SEP 8 1986 DEPT. OF WATER RESOURCES

WELL/LAND LOCATION

1. Township 1N N/S

Range 1W E/W

Section 15

List 10-acre subdivision

SW ¼, SW ¼, NW ¼

2. County Maricopa

3. Applicant:

Goodyear Aerospace
Name

P. O. Box 85
Address

Litchfield Park AZ 85340
City State Zip

4. Randolph J. Clark
NAME OF CONTACT PERSON

Phone: 925-7274

Agency: Goodyear Aerospace

5. Owner of well:

Goodyear Aerospace
Name

P. O. Box 85
Address

Litchfield Park AZ 85340
City State Zip

6. Purpose of well drilled pursuant to this Notice:

Monitor X

Piezometer

7. Owner's name:

Goodyear Aerospace
Name

P. O. Box 85
Address

Litchfield Park AZ 85340
City State Zip

925-7274
Telephone number

8. Construction will start:

9 15 86
Month Day Year

9. Period well will remain in use: 5 years months/years

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

File No. B(1-1)15 bcc

Filed 9-12-86 By ek

Input ENTERED SEP 17 1986

Duplicate Mailed 9-16-86 By ek

Registration No. 55-515520

AMA/INA PHL

W/S 06 S/B 04

10. For monitoring wells, is pump equipment to be installed? yes

(a) If so, what will be the design pump capacity? 5 gallons per minute

(b) Type of pump (submersible, turbine, etc.)

turbine

(c) What use will be made of the water?

sampling only

11. Proposed method of abandonment of well after project is completed:

Grout from bottom of borehole to surface

12. Drilling firm:

Stewart Bros. Drilling
Name

P. O. Box 2067
Address

Grants NM 87021
City State Zip

314
DWR License Number

(continued on reverse)

SEP HYDROLOGY APPROVED RKE

GENERAL INSTRUCTIONS

Fill out this form in duplicate and mail to Department of Water Resources, Suite 100, 99 East Virginia, Phoenix, Arizona 85004. Filing fee must accompany Notice.

UNCONFIRMED

I state that this Notice is filed in compliance with Rule R12-15-806 and that the complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on the reverse side of this form.

DATE 9-5-86

Randolph J. Clark
Signature of Applicant

DWR 55-82-8/86 (Revised)

13. Is this well to monitor existing contamination? yes Potential contamination? ____
Please explain TCE and chromium contamination connected with Phoenix-Goodyear Airport CERCLA action.

14. If construction plans have been coordinated with Az. Dept. Health Services, Environmental Health Division, who is the agency contact? ____
If construction plans have been coordinated with Az. Dept. Water Resources, Hydrology/Remedial Action Division, who is the division contact? Debbie Toslene

15. WELL CONSTRUCTION PLAN

a) Drilling method (mud rotary, hollow-stem auger, etc.) mud rotary

b) Borehole diameters: 10 inches from 0 feet to 100 feet
____ inches from ____ feet to ____ feet
____ inches from ____ feet to ____ feet

c) Casing materials (PVC, steel, stainless steel, etc.):
material PVC diameter 4 inches from 0 feet to 100 feet
material Steel diameter 6 inches from 0 feet to 20 feet
material ____ diameter ____ inches from ____ feet to ____ feet

d) Method of sealing at reductions N/A

e) Annular seal materials (cement, grout, etc.) and method of placement(tremied,circulated:)
material cement method tremied from 0 feet to 70 feet
material Bentonite method ____ from 70 feet to 75 feet
material ____ method ____ from ____ feet to ____ feet

f) Gravel packs (state material, and whether natural or artificial):
material pea gravel from 75 feet to 100 feet
material ____ from ____ feet to ____ feet

g) Perforations (if pre-manufactured, please give specs of perforations or screens):
type 4" PVA #20 Factory Slotted from 75 feet to 95 feet
type ____ from ____ feet to ____ feet

h) Method of well development (bail, air lift, surge) pump or air lift

i) Will surface or conductor casing extending above grade be used to protect the aquifer from additional surface contaminants during drilling and construction?

16. Include detailed construction diagram, if available.

17. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility or storage area of hazardous materials? Yes __ No X
If yes, a request for a variance must accompany this application pursuant to R12-15-820.

CONDITIONS

I. Construction and abandonment standards for all wells shall be in accordance with DWR rules R12-15-811 and R12-15-816.
II. Drilling of the well shall be completed within one (1) year after the date of Notice.
III. A Well Driller Report, DWR-55-6-5/83, is required within 30 days of completion of drilling. A Completion Report, DWR-55-7-9/83, is required to be filed with the Department within 10 days after installation of pump equipment for monitor wells.
IV. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the minimum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual amount of 10 acre feet total.
V. Special construction standards required pursuant to R12-15-821: ____

RECEIVED
MAY 14 1987
DEPT. OF
WATER RESOURCES

DEPARTMENT OF WATER RESOURCES
99 East Virginia
Phoenix, Arizona 85004

Registration No. 55-515520

Owner of Well Site Goodyear Aerospace

File No. B(1-1)15bcc

COMPLETION REPORT

1. Per A.R.S. §45-600, the Completion Report to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.
3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

LOCATION OF THE WELL:

1N	1W	15	SW SW NW
Township	Range	Section	¼ ¼ ¼

EQUIPMENT INSTALLED:

Kind of pump Turbine
Turbine, centrifugal, etc.

Kind of power Electric H.P. Rating of Motor 1/3
Electric, natural gas, gasoline, etc.

Pumping Capacity 10 Date installed 11/22/86
Gallons per minute

WELL TEST:

Test pumping capacity _____ Date Well Tested _____
Gallons per minute

Method of Discharge Measurement _____
Weir, orifice, current meter, etc.

Static Groundwater Level _____ ft. Drawdown _____ ft.

Total Pumping Lift _____ ft. Drawdown _____ ft.
(Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

May 12, 1987
DATE

R J Clark
Signature R. J. Clark

P. O. Box 85
Address

Litchfield Park, Arizona 85340
City State Zip

ENTERED MAY 15 1987

DWR-55-7-3/84

LORAL
SYSTEMS GROUP
A DIVISION OF LORAL CORPORATION

DEFENSE SYSTEMS DIVISION, ARIZONA

P.O. Box 85
Litchfield Park, Arizona 85340-0085

58-100014

RECEIVED
APR 17 1987
WATER RESOURCES

April 14, 1987

RECEIVED
APR 23 1987
DEPT OF WATER RESOURCES

Arizona Department of Water Resources
99 East Virginia
Phoenix, Arizona 85004

Dear Sir or Madam:

As part of a nationwide transaction, the facility formerly known as Goodyear Aerospace Corporation, Arizona Division, will henceforth be identified as:

Loral Corporation
Defense Systems Division - Arizona
P. O. Box 85
Litchfield Park, Arizona 85340-0085

This will not result in any change in the facility management or operations and will not affect our ability to comply with environmental requirements.

Please note this change with respect to grandfathered groundwater right certificate no. 58-100014. If you have any questions, you may contact me at 925-7274.

Sincerely,

R. Clark

Randy Clark
Environmental Coordinator

cc: Dave Chapman
Wally Ito
Dave Sweet
U.S. EPA Region IX

Reporting Party changed
4/24/87 - [illegible]

MICROFILMED
ENTERED APR 27 1987

State of Arizona

DEPARTMENT OF WATER RESOURCES

99 E. Virginia Avenue, Phoenix, Arizona 85004

9/16/86

BRUCE BABBITT, Governor
KATHLEEN FERRIS, Director

55-515525

GOODYEAR AEROSPACE
P O BOX 85
LITCHFIELD PARK AZ 85340

Registration No. 55-515520 55515522 55-515524
File No. B(1-1)15bcc B(1-1)16aab B(1-1)16aaa
B(1-1)15bbc

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill an exploration well which was recently filed with this Department. This is returned to you as evidence of compliance with A.R.S. §45-596. Your designated driller has been mailed separately a Well Drilling Card which he is required to have in his possession before commencing to drill the well.

X Since this well is being drilled as a monitor well, or for cathodic protection, grounding, geotechnical or piezometer purposes, our standard driller report form is also being furnished to the driller which he is required to complete and return to the Department within 30 days after the completion of drilling. A Completion Report form is being furnished for monitor wells where pump equipment is authorized to be installed as part of this packet so that you may submit the report within 30 days after the installation of pumping equipment on a monitor well as required by A.R.S. §45-600.

___ This well is authorized to be drilled for mineral exploration purposes. Because of this, no pump equipment may be installed. A Project Completion Report is being furnished your designated driller for each hole to be drilled. Your driller is required to submit this Project Completion Report within 30 days after completion of drilling. You should insist that this is done.

For monitor, geotechnical, cathodic protection, grounding and piezometer wells, you should obtain the written permission of the Department of Water Resources before proceeding with the drilling in the event that you determine it necessary to change the location of the proposed well. A properly signed amended Drilling Card must be in the possession of the driller before drilling commences at a different location than originally authorized.

For your future use, a Change of Well Information form is enclosed should it become needed. Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, including abandonment, in order to keep the well registration file current and accurate.

Sincerely,

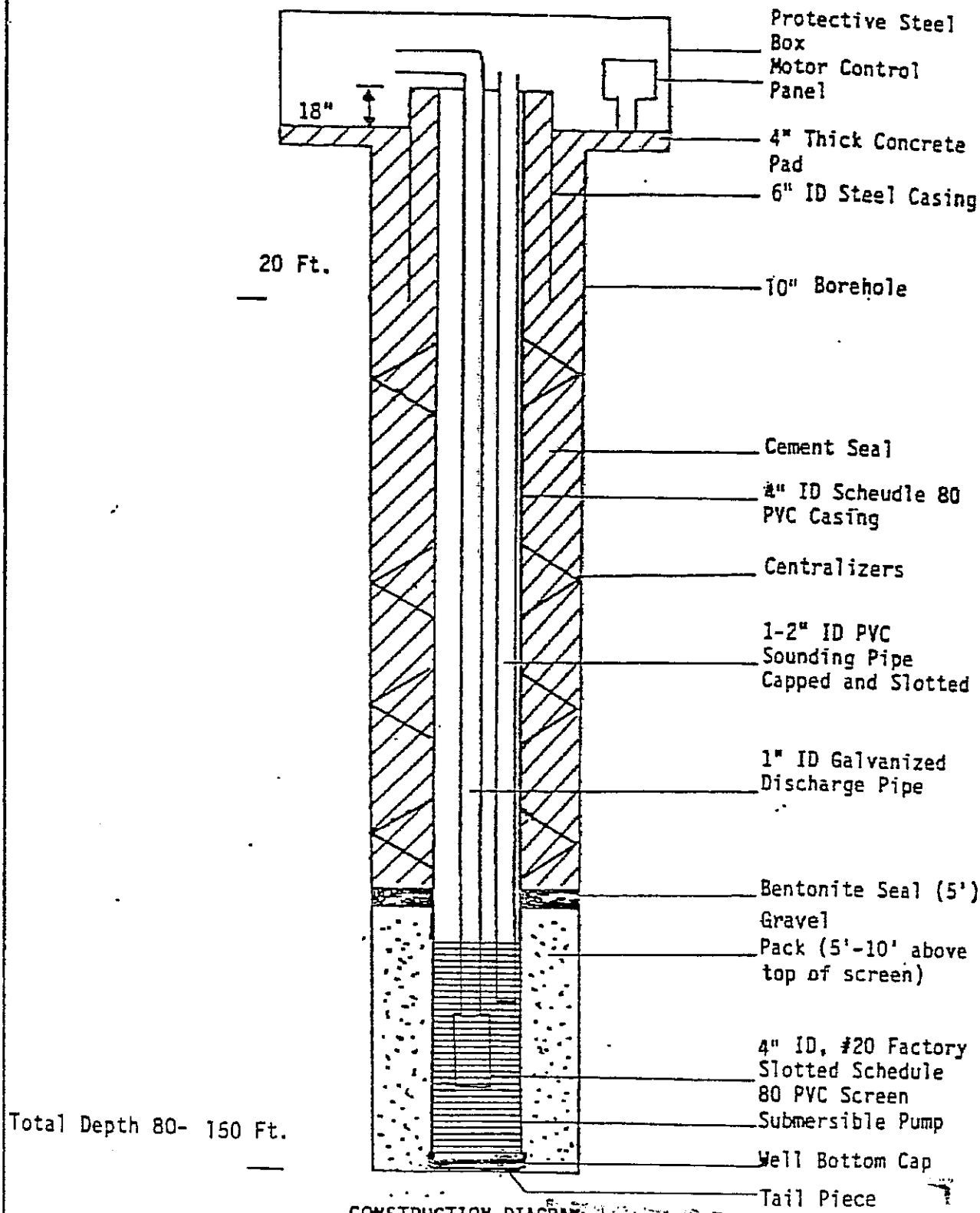
R. A. Gessner
Chief, Operations Division

RAG: ek
Enclosures
DWR-55-8-8/84

RECEIVED

Think Conservation!

Office of Director 255-1554
Administration 255-1550, Water Resources and Flood Control Planning 255-1566, Dam Safety 255-1541,
Flood Warning Office 255-1548, Water Rights Administration 255-1581, Hydrology 255-1586.



CONSTRUCTION DIAGRAM
FOR MONITORING WELLS

FIGURE 3

PHOENIX-LITCHFIELD AIRPORT AREA R.I.

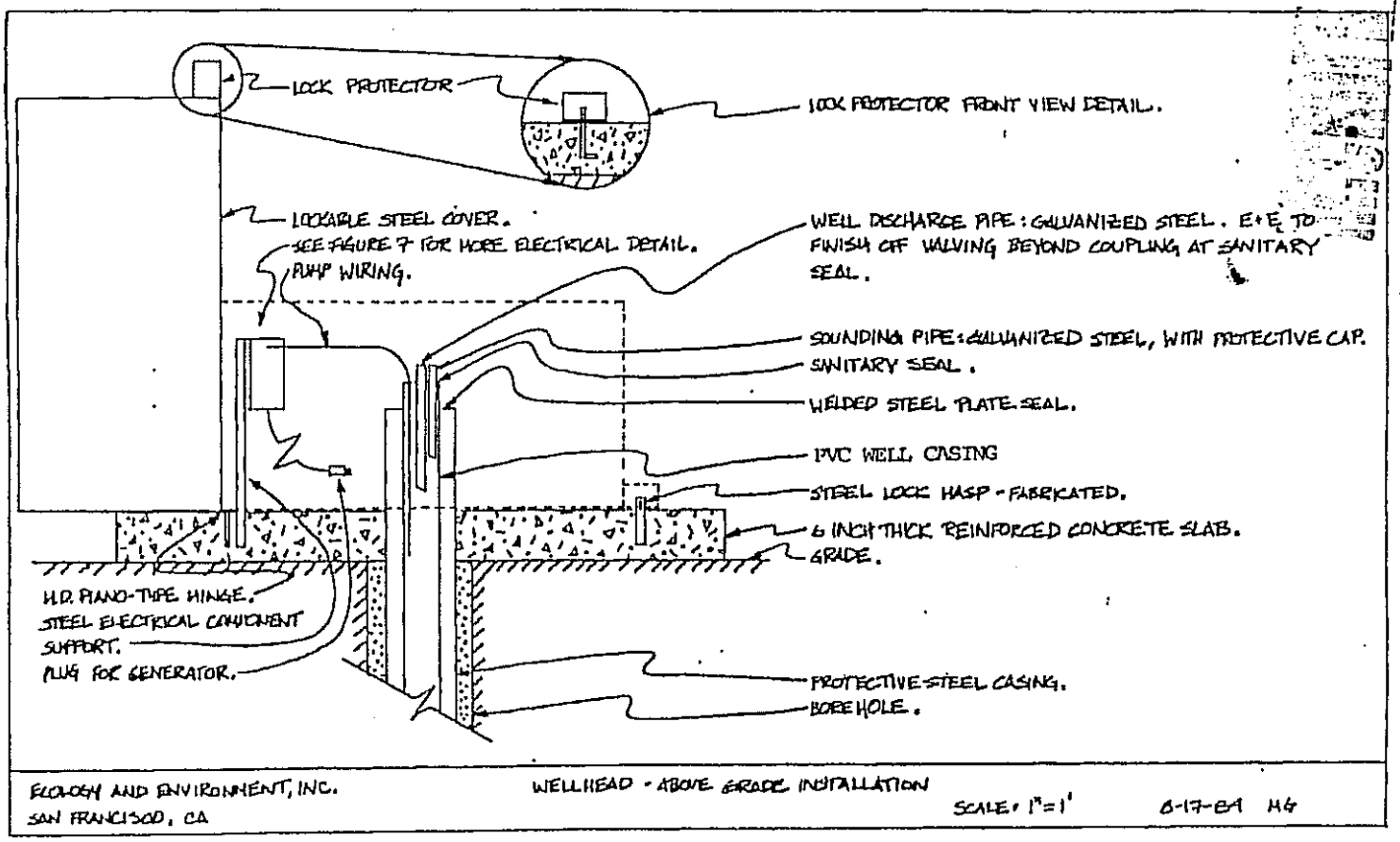


FIGURE 4

PHOENIX-LITCHFIELD AIRPORT AREA R.I.

ES ENGINEERING-SCIENCE

GOODYEAR AEROSPACE CORP
P O 85
LITCHFIELD PARK AZ 85340

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	515510
	THRU
55	515528

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					FILING FEE FOR NOTICES OF INTENTION TO DRILL	10.00	190.00
					EXPLORATION WELLS		

FILE#	REGISTRATION#
B(1-1)16adc	55-515523
B(1-1)16ada	55-515524
B(1-1)15bbc	55-515525
B(1-1)16acc	55-515526
B(1-1)16adb	55-515527
B(1-1)16acb	55-515528

FILE#	REGISTRATION #
B(1-1)16acd	55-515510
B(1-1)16adc	55-515511
B(1-1)16dab	55-515512
B(1-1)16dba	55-515513
B(1-1)16dbb	55-515514
B(1-1)16abd	55-515515
B(1-1)21bbc	55-515516
B(1-1)16baa	55-515517
B(1-1)16bdb	55-515518
B(1-1)16cbb	55-515519
B(1-1)15bcc	55-515520
B(1-1)16cdb	55-515521
B(1-1)16aab	55-515522

SEP 1986 PAID

TOTAL $ 190.00

9/16/86/ek

CHECK#82309

MICROFILMED

Page 1 of 1

* initial discharge was muddy and 2.5gpm but became more clear. Development began at 1105 hrs. *

Conductance	Temperature °F	Notes
50	74°	3.75 gpm, fairly silty brown, milky color, moderately turbid ①
0	74°	6.3 gpm (mean) SAT, slightly cleaner ①
0	73.5°	6.7 gpm (mean) smoky colored water ① (slightly turbid)
)	72°	7 gpm (mean) lightly smoky, almost clear
70	72.0°	7 gpm maintained. Turbidity does not seem appreciable from pump. Light sediment still but almost clear.
		(shut down, development complete)
		Measuring temperature water with thermometer.

R S

PAGE 1 OF 1

DRILLING LOG

Geologist LEE SCHNELLE
Driller DANNY WHITE
Geophysical Logger NONE
Permit Number 55-515520
Property Owner Goodyear Aerospace Corp.

Well/Boring Number 15-GMW-5
Project GAC/PLA RI Phase
Project Number 46351.00
Date Started 10/10/86 ~10:45
Date Completed 10/11/86 ~18:4c

LOCATION

15B

(B-1-1)15bCB

SW 1/4 of SW 1/4 of NW 1/4
Section 15 T 1N R 1W
County Maricopa State Arizona

N.
E.
Elevation ±

Logs

Res. SP Gam. G-Den. Neut. Calip. Dev. Sonic

Pipe dope used

Drilling Method Mud Rotary
Samples Piezometer
Rig Make and Model Gardner-Denver
Drill Bit Diameter 5- and 9 5/8 (OD) in

ADDITIVES USED

Depth From	Depth To	Additives
0	90	SH-1200L
0	90	Drispac

DRILLING, CORING, BIT AND CASING RE

Diameter	Depth From	Depth To	
5-inch	0	90	dri

DRILLING LOG

Well/Boring Number 15-GMW-5
Project GAC/PLA RI Phase II
Project Number 46351.00
Date Started 10/10/86 ~10:45 hrs
Date Completed 10/11/86 ~18:40 hrs

Geologist LEE SCHNELLE
Driller DANNY WHITE
Geophysical Logger NONE
Permit Number 55-515520
Property Owner Goodyear Aerospace Corp.

LOCATION

15B

+	+
+	+

(B-1-1)15bCB ✓
SW 1/4 of SW 1/4 of NW 1/4
Section 15 T 1N R 1W
County Maricopa State Arizona

N.
E.
Elevation ±

Drilling Method Mud Rotary
Samples Piezometer
Rig Make and Model Gardner-Denver 1500
Drill Bit Diameter 5- and 9 5/8 (10) inch

Logs
Res. SP Gam. G-Den. Neut. Calip. Dev. Sonic
Pipe dope used

DRILLING, CORING, BIT AND CASING RECORD

Diameter	Depth From	Depth To	Notes
5-inch	0	90	drill bit
(9 5/8) 10-inch	0	80	drill bit
4-inch	+2.7	73.0	PVC casing
1 1/4 I.D. 7" O.D.	+1.5	20.0	steel casing

ADDITIVES USED

Depth From	Depth To	Additives
0	90	SH-1200L
0	90	Drispac
0	90	Soda Ash
~50	~70	~~Bentonite~~ Vermiculite
0	90	Bentonite Powder

Notes:

DRILL LOG

WELL/BORING NUMBER 15-GMW-5 ELEVATION _____ DATE 10/10/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD Mud Rotary _____ PAGE 1 OF 4

WATER LEVEL FIRST ENCOUNTERED 50-55 ? FINAL 44m+2.95' = 48.88' on 10/12/86 at 0830hrs

*[actual contact depths & depth drilled are 1.5 feet deeper on 10-inch hole and 0 foot deeper on 5-inch hole.]

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
0				brown v.fine silty, sandy clay w/ (60-70% clay) some med. fine sd grains (30-40% silt & v.f. sd)	
5			some coarse & med sand zones mix in.	some brown fine silty, sandy clay (30-40%), (60-50% silica 40-50% metamorphic) ~~with~~ and subangular to subrounded poorly sorted fine to v. coarse sd (60-70%)	
10	↑	primarily brown silty & sandy clay		(20-40%) brown fine silty, sandy clay layers interbedded w/ (60-80%) poorly sorted sand w/ pea gravel to medium gravel, angular to moderately rounded grains (60-70% qtz, 30-40% other (metamorphic & ign.)	
15				poorly sorted sand w/ pea gravel and some med. grained fine (<15%), medium (30-30%), coarse (20-30%) v. coarse (10%), pebble gravel (10%) med. gravel (<5%) subangular to well rounded grains; 70% qtz, 30% metam.	

DRILL LOG

15-GMW-5 ELEVATION _____ DATE 10/10/86

_____ LOCATION _____ LOGGER L. Schnelle

_____ _____ PAGE 2 OF 4

COUNTERED _____ FINAL _____

MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES

WELL/BORING NUMBER _____

WELL/BORING _____

DRILL METHOD _____

WATER LEVEL FIRST EN

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.

DRILL LOG

WELL/BORING NUMBER 15-GMW-5 ELEVATION _____ DATE 10/10/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnde

DRILL METHOD _____ PAGE 2 OF 4

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
25				→ poorly sorted sand w/ some pebble grvl. (25% v.f., 25% fine, 35-40% med., 30% coarse to v. coarse, <5% pebbles 40-50% qtz, 30% dark metam, 10% igneous (feldspar, etc)	
30	coarser gravel & possibly small cobble gravel			→ poorly sorted sand & gravel: sand (60%): fine (20%), med. (45%), coarse to v. coarse (35%); pebbles & gravel (40% of total): 40% pebble gravel, 60% med. to coarse grvl. subangular to well rounded; 60% qtz, 40% metam. & igneous	striated (schist flake)
35	coarse gravel & cobble rock; Hard drilling yet	softening up some		→ poorly sorted gravel & sd (up to cobble size) → 60% of total sand (40% of total) & gravel (up to cobble size) sand: fine (25%), med. (30%), coarse (30%) & v. coarse (15%) gravel: pea gravel (20-35%), med. gravel (35-40%), coarse gravel and cobbles (25-45%) (30-50% qtz; 50-70% metam. & ign) angular to subangular cobble & crse gravel cuttings w/ subangular to well rounded sd.	
40	hard cobble drlg again			→ SAA except 40-50% total sd & pebble gravel (<20% of grvl.), while coarse cobbles & gravel (angular to subrounded cuttings) is 50-70% of gravel. (40-30% qtz, (30-40%) igneous, (30%) metam) rhyolite, granite, flint, qtzite...	
45	softens a little (sand?)			→ sample is 70% pea gravel to medium gravel w/ <10% sd and 10% or greater coarse to cobble gravel cuttings (60% metamorphic & igneous, 40% qtz. 5% show of brown fine sh, clay	
50					

*Some small loss of circulation has occurred from 20-50 feet in depth.

DRILL LOG

WELL/BORING NUMBER 15-GMW-5 ELEVATION _____ DATE 10/10/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 3 OF 4

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
50		softer drlg. water table in hole		→ jagged to ~~well~~ sub rounded cuttings fine (<10%), med, (30-40%), coarse (30%) & v. coarse 20-40% med gravel to coarse & cobble gravel	(some rose qtz) (some conglomerate) (60-70% qtz fign. stz, 30-40% metamorph)
55				→ (50% sd, 50% gravel & cobbles) → poorly sorted sand; <20% fine, 30-35% med, 30% coarse, 10% v. coarse (angular to med and round) grvl.; jagged & angular cuts, some subrounded grains <20% pea gravel, 30% small gravel, 50-60% coarse & cobble grvl.	
		sdy & small grvl drlg.			
		coarse drlg. med. grvl			
60				→ 40-50% brown, sandy (fine) clay with silt (to lt. brown) 50-60% mostly med grained sand (60% of sd; 20% each for fine, med & coarse) <10% jagged dark metamorphic (schist) pebble to cobble grvl.	
65				→ brown fine sandy clay w/ silt shows at <20% jagged to well rounded pebble gravel to v. coarse pebble to cobble gravel composed about 40% of sample to 60%; medium to coarse sand about 10-15% of sample (mostly metamorphic & igneous rock composition 60-70% with 30-40% qtz); jagged rocks are cuts of cobbles & coarse gravel	
		67 ft. soft ons w/ some (clay?)			
70				→ 50-70% lt. brown to brown fine sandy clay with silt & sand (<40% qtz com	

DRILL LOG

WELL/BORING NUMBER 15 GMW-5 ELEVATION _____ DATE 10/10/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ PAGE 4 OF 4

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DRILL LOG

WELL/BORING NUMBER 15 GMW-5 ELEVATION _____ DATE 10/10/86

WELL/BORING _____ LOCATION _____ LOGGER L. Schnelle

DRILL METHOD _____ _____ PAGE 4 OF 4

WATER LEVEL FIRST ENCOUNTERED _____ FINAL _____

DEPTH IN FEET	LITH COL	SAMPLE TYPE IDENT.	MOISTURE CONTENT WATER LEVEL	LITHOLOGIC DESCRIPTION	NOTES
75				Lt. brown fine to v.f. sandy clay (80-90%) with silt and <15% medium & coarse sd grains (subrounded); slightly plastic to moderately plastic	
80	mostly sandy clay			→ SAA w/ more medium & fine sand and <5% to 10% coarse pebble & cobble gravel.	
		minor gravel/sand layer		50% Brown silty sandy clay	
85				→ 50% coarse pebble gravel cuttings from 84 feet (with <20% of this 50% being medium & coarse sd). → Show of caliche.	
		minor gravel/sand layer			
90				→ 80% brown silty, fine sandy clay (like at 75 to 80 feet) except <10% coarse gravel cuttings from 88 feet and about 10-20% hard ~~[illegible]~~ calcified (or cemented) layer of tan color.	
	T.D. on 5-inch hole				
95					
100					

WELL/PIEZOMETER COMPLETION DIAGRAM

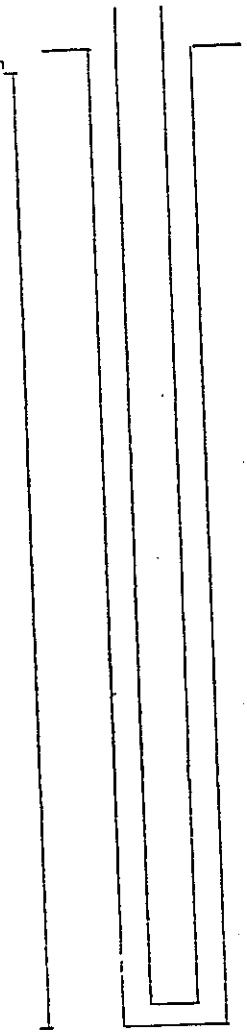
Piezometer Number 15 GMW-5

Project GAC/PLA RI Phase II

Aquifer Upper Alluvial Unit

Static Water Level 14m+2.95ft = 48.88' on 10/12/86 at 0830hrs

Depth



73.0
42.6
20.4

Geologist LEE SCHNELLE

Driller DANNY WHITE

Date of Installation 10/11/86

Hole Depth 90 feet (5 inch), 80 feet (10 inch)*

Stickup 2 feet (PVC), 1.5 feet (steel)

Protective Casing +1.5 to 20 Total 21.5

Well Casing +2.7 to 73.0 Total 75.7

Top Seal

Portland/Bentonite Grout from surface to 41

(pellet) ~~Bentonite Ply~~ from 41 to 43

Hole Diameter 10-inch to 80 feet, 5-inch to 90 feet

Casing Diameter 4-inch ID

Well Casing Depth 73.0 feet (52.6 solid, 20.4 slot)

Screen Diameter 4-inch ID, 0.020 slot

Centralizers 40.8 feet and 63.1 feet

Pump Type

Pump Capacity

Pump Setting

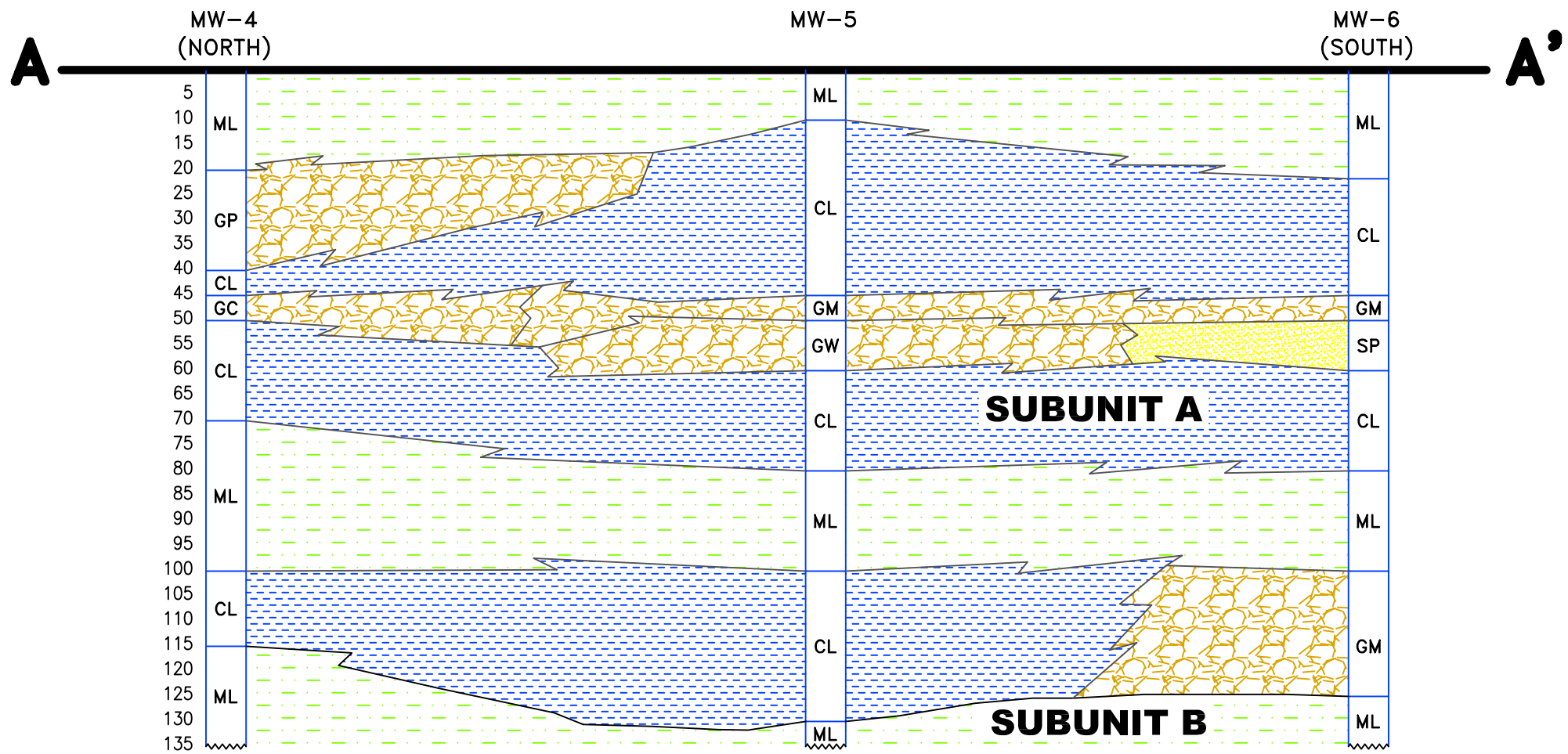
Average Pumping

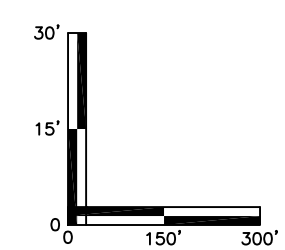
Remarks * hole collapsed back some (probably to 75 feet) prior to well casing installation.

→ note: dense bentonite at the base of the hole made development difficult and air + water surging were required.

FIELD PARAMETERS

Arizona Well I.D.	Well Name or Number	Date	Time	pH	µmhos/cm Electrical Conductance	°F Temperature	Notes * 2-3gpm discharge occurs around the well top where g[illegible] [illegible]
B(1-1)-15 bcc	15GMW-5	10/11/86	1600	7.95	2000-2100	74-75°F (estimated)	7.3gpm discharge (meas.) muddy discharge (moderately to highly turbid)
"	"	"	1630	7.90	2150	74.5°F fresh sample 75°F (5min old sample)	7.5-8.5gpm * discharge (meas) (smoky to lightly turbid)
"	"	"	1700	pH meter not reading properly	2100	75°F	9gpm discharge (meas) (smoky to light cloudy or far w/ low turbidity)
"	"	"	1715	"	2200	74.5°	10gpm (meas. discharge) almost clear (some fine sediment)
"	"	"	1730	"	2150-2250	74.5 to 75°F	~ same or slightly greater discharge clear water (minimal sediment)
			1722	shut	down	development	
	Development by two methods from 1150 hrs to 1722 hrs — problem in development time due to heavy bentonite mud in annular space around well screen						

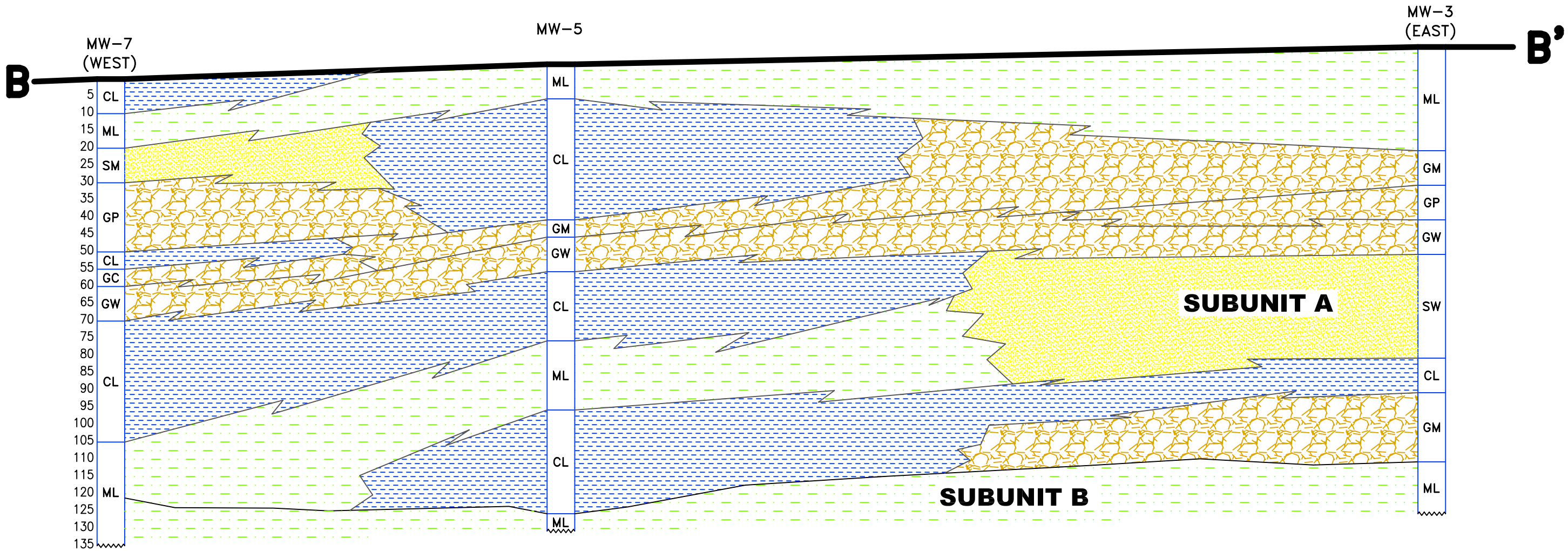


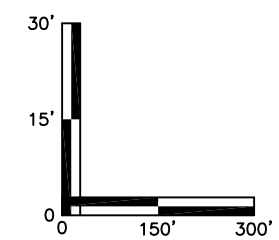


Scale: 1"=300'
10X Vertical Exaggeration

Western Avenue Plume WQARF Site Avondale & Goodyear, Arizona	DATE: 3/7/06
	DESIGNED:
	CHECKED: PRP
Cross Section A–A'	APPROVED:
	DRAWN: RDH
	PROJ.: 1303.021.03
GeoTrans, Inc. A TETRA TECH COMPANY	Figure B1

D:\Projects\GeoTrans\Tempe\WestAve\E025\drawings\25cs01-b.dwg 05/07/2001 17:09:36





Scale: 1"=300'
10X Vertical Exaggeration

Western Avenue Plume WQARF Site Avondale & Goodyear, Arizona	DATE: 3/7/06
	DESIGNED:
Cross Section B–B'	CHECKED: PRP
	APPROVED:
	DRAWN: RDH
	PROJ.: 1303.021.03
GeoTrans, Inc. A TETRA TECH COMPANY	Figure B2

D:\Projects\GeoTrans\Tempe\WestAve\E025\drawings\25cs02-b.dwg 05/08/2001 10:36:26

ICF KAISER

COPY

FASP ANALYTICAL RESULTS NARRATIVE

1.0 ANALYSIS: Volatile Organics in Soil by FASP Modifications of EPA Methods 8010 and 8020.

2.0 SITE: Western Dry Cleaners

3.0 SAMPLES:

A total of 1 rinsate water and 14 soil samples were analyzed as follows:

SAMPLE	COLLECTION DATE	ANALYSIS DATE
WDC-1S	3/20/95	3/20/95
WDC-1D	3/20/95	3/20/95
WDC-2S	3/20/95	3/20/95
WDC-3S	3/21/95	3/21/95
WDC-4D	3/20/95	3/20/95
WDC-5D	3/20/95	3/20/95
WDC-6S	3/20/95	3/20/95
WDC-7S	3/21/95	3/21/95
WDC-8S	3/21/95	3/21/95
WDC-9S	3/21/95	3/21/95
WDC-10S	3/21/95	3/21/95
WDC-11S	3/20/95	3/20/95
WDC-12S	3/21/95	3/21/95
WDC-14S	3/21/95	3/21/95
WDC-15S	3/21/95	3/23/95

All soil sample results are reported on a wet weight basis.

4.0 QUALITY CONTROL: All samples were analyzed utilizing a dual column gas chromatograph. A DB-624 was utilized as the primary quantitation column, and a DB-VRX was utilized as the confirmation column. Positive results for samples are presented for both columns with associated qualifiers. Quality control (QC) summary forms are provided for both the primary and confirmation columns. Only QC outliers observed on the primary column are discussed within this narrative, unless otherwise noted.

4.1 INITIAL CALIBRATION: A five point initial calibration (ICAL) was performed on 3/19/95 for EPA Method 8010 and 8020 analytes. The FASP quality control (QC) guidelines for percent relative standard deviation (%RSD), which are noted on the initial calibration summary forms, were met for all target analytes. Average relative response factors (RRF's) from the initial calibrations were used to calculate analyte concentrations on days that initial calibrations were analyzed. (See attached initial calibration summary.)

4.2 CONTINUING CALIBRATION: Continuing calibration (CCAL) standards were analyzed on 3/20/95, 3/21/95 and 3/23/95 for EPA Method 8010 and 8020 analytes. The relative response factor (RRF) from the CCAL was used to calculate sample analyte concentrations on dates that initial calibrations were not analyzed. The FASP QC criteria for CCAL percent difference (%D) relative to the associated ICAL were met for all analytes. (See attached continuing calibration summary.)

4.3 INTERNAL STANDARD: An internal standard (I.S.) of 4-bromofluorobenzene was used for both the initial calibrations and continuing calibrations. The relative response factor (RRF) was calculated as follows:

$$RRF = \frac{(\text{Area target})\ (\text{ng I.S.})}{(\text{Area I.S.})\ (\text{ng target})}$$

The internal standard was added to every sample, method blank, laboratory control sample and matrix spike sample analyzed. Target analyte concentrations were calculated as follows:

$$\text{ng target} = \frac{(\text{Area target})\ (\text{ng I.S.})}{(\text{Area I.})\ (\text{RRF})}$$

4.4 BLANK ANALYSES: Blank analyses were performed on all dates that samples were analyzed. Blank analyses on all dates showed no results above the 4.0 ug/Kg detection limits.

4.5 SURROGATE ANALYSES: Surrogate spiking compounds consisting of 1-chloro-2-bromopropane and fluorobenzene were added to every field sample, method blank, laboratory control sample and matrix spike sample analyzed. Surrogate recovery is used to estimate the adequacy of system performance. All recoveries were within the FASP QC criteria. (See attached surrogate recovery summary forms.)

4.6 LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) prepared from a solution of vinyl chloride, carbon tetrachloride, 1,2-dichloroethane, trichloroethene, 1,2-dichloropropane, cis-1,3-dichloropropene, 1,1,2-trichloroethane, tetrachloroethene, bromoform, benzene, and 1,4-dichlorobenzene was analyzed once every ten samples. The purpose of this QC sample is to determine the validity of the instrument calibration using a separate source standard. All LCS analyte recoveries were within FASP QC criteria for the primary column. (See attached LCS summary.)

4.7 MATRIX SPIKE/SPIKE DUPLICATE ANALYSIS: Sample WDC-9S was used to prepare matrix spike and matrix spike duplicates. All MS\MSD analyte recoveries were within FASP QC criteria for the primary column. (See attached MS\MSD summary.)

4.8 CONFIRMATION VERIFICATION SAMPLE RESULTS: All sample results reported were non detect, therefore a confirmation verification report is not included in this package.

4.9 HOLDING TIMES: All holding times were met for these samples.

5.0 DATA QUALIFIERS: Included with this data package is a qualifier sheet explaining all data qualifiers.

5.1 DISCUSSION OF RESULTS:

The associated QC sample results were generally acceptable.

During the course of this analysis, field summary data was turned into the client on a fast turn around basis.

Sample WDC-15S was reanalyzed on 3/23/95 due to a leak on the first (3/21/95) run.

Confirmation of qualitative results was performed and all sample results reported are based on dual column analysis. The second column results information is reported in the QC summary that is in this report.

QUALIFIER SHEET

B	This flag is used when the analyte is found in the associated method blank as well as in the sample, indicating possible contamination.
E	This flag indicates that the calculated concentration for an analyte exceeds the linear calibration range, possibly resulting in an artificially low result.
D	This flag indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract.
J	This flag indicates an estimated value. It is used when the analyte is only tentatively identified or present below the FMDL.
JA	This flag indicates an estimated value. It is used when an analyte in the audit cylinder exceeds the percent recovery of 50%-150%.
JC	This flag indicates an estimated value. It is used when an analyte in the continuing calibration exceeds the percent difference (%D) of 25%.
JH	This flag indicates that the holding time for a given sample has been exceeded, which may possibly ensue in an artificially low result.
JI	This flag indicates an estimated value. It is used when an analyte in the initial calibration exceeds the average percent relative standard deviation (%RSD) 30%.
JL	This flag indicates an estimated value. It is used when an analyte in the laboratory control sample exceeds the percent recovery of 70%-125%.
JS	This flag indicates an estimated value. It is used when the surrogate in a sample exceeds the percent recovery of 65%-130%.
N	This flag indicates that the percent difference between the primary and confirmation columns exceeds 75%.
PJ	This flag indicates that the percent difference between the primary and confirmation columns exceeds 50% but is less than 75%.
P	This flag indicates that the percent difference between the primary and confirmation columns exceeds 25% but is less than 50%.

EPA METHOD 8010 INITIAL CALIBRATION DATA

FASP Method 8010 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-624

COMPOUND	Midpoint RT	1.5 % RT Window		RELATIVE RESPONSE FACTORS					Average RRF	SD	%RSD	QC LIMITS
				20 ng	40 ng	100 ng	200 ng	400 ng				
Dichlorodifluoromethane/	3.12	3.10	3.14	1.95E+00	1.91E+00	1.91E+00	1.96E+00	1.76E+00	1.90E+00	7.20E-02	4	+/- 50%
Chloromethane		-----	-----	---	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.74	3.71	3.77	2.64E+00	2.81E+00	2.85E+00	2.93E+00	2.58E+00	2.76E+00	1.31E-01	5	+/- 50%
Bromomethane/Chloroethane	4.40	4.36	4.43	2.68E+00	2.42E+00	2.38E+00	2.72E+00	2.42E+00	2.53E+00	1.45E-01	6	+/- 50%
Trichlorofluoromethane	5.12	5.08	5.16	3.28E+00	3.39E+00	3.53E+00	3.85E+00	3.56E+00	3.52E+00	1.92E-01	5	+/- 50%
1,1-Dichloroethene	6.18	6.13	6.22	4.27E+00	4.47E+00	4.51E+00	4.78E+00	4.55E+00	4.52E+00	1.62E-01	4	+/- 30%
Methylene Chloride	7.25	7.20	7.30	5.43E+00	5.52E+00	5.52E+00	5.65E+00	5.36E+00	5.49E+00	9.84E-02	2	+/- 30%
trans-1,2-Dichloroethene	7.85	7.80	7.91	4.38E+00	4.52E+00	4.59E+00	4.68E+00	4.45E+00	4.52E+00	1.06E-01	2	+/- 30%
1,1-Dichloroethane	8.88	8.81	8.95	4.48E+00	4.53E+00	4.64E+00	4.85E+00	4.56E+00	4.61E+00	1.29E-01	3	+/- 30%
cis-1,2-Dichloroethene	10.39	10.31	10.46	4.63E+00	4.76E+00	4.86E+00	4.99E+00	4.61E+00	4.77E+00	1.43E-01	3	+/- 30%
Chloroform	11.28	11.19	11.36	5.68E+00	5.91E+00	5.90E+00	5.89E+00	5.43E+00	5.76E+00	1.86E-01	3	+/- 30%
1,1,1-Trichloroethane	11.70	11.61	11.79	5.35E+00	5.51E+00	5.58E+00	5.62E+00	5.23E+00	5.46E+00	1.48E-01	3	+/- 30%
Carbon Tetrachloride	12.15	12.06	12.24	6.29E+00	6.40E+00	6.53E+00	6.44E+00	5.94E+00	6.32E+00	2.06E-01	3	+/- 30%
1,2-Dichloroethane	12.84	12.75	12.94	4.43E+00	4.60E+00	4.62E+00	4.57E+00	4.17E+00	4.48E+00	1.69E-01	4	+/- 30%
Trichloroethene	14.70	14.59	14.81	5.80E+00	5.94E+00	5.68E+00	5.68E+00	5.35E+00	5.69E+00	1.94E-01	3	+/- 30%
1,2-Dichloropropane	15.39	15.28	15.51	4.23E+00	4.49E+00	4.38E+00	4.55E+00	4.26E+00	4.38E+00	1.26E-01	3	+/- 30%
Bromodichloromethane	16.35	16.23	16.47	3.90E+00	4.07E+00	4.09E+00	4.15E+00	4.01E+00	4.05E+00	8.22E-02	2	+/- 30%
cis-1,3-Dichloropropene	17.88	17.74	18.01	3.72E+00	3.94E+00	4.00E+00	4.02E+00	3.83E+00	3.90E+00	1.12E-01	3	+/- 30%
trans-1,3-Dichloropropene	20.21	20.06	20.36	3.53E+00	3.57E+00	3.65E+00	3.65E+00	3.50E+00	3.58E+00	6.14E-02	2	+/- 30%
1-Chloro-2-bromopropane	20.41	20.25	20.56	2.91E+00	3.13E+00	2.92E+00	2.90E+00	2.81E+00	2.94E+00	1.18E-01	4	+/- 30%
-surrogate	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.99	20.83	21.15	5.05E+00	5.10E+00	4.83E+00	4.75E+00	4.51E+00	4.85E+00	2.15E-01	4	+/- 30%
Tetrachloroethene	21.45	21.29	21.61	5.81E+00	5.98E+00	6.04E+00	6.06E+00	5.83E+00	5.94E+00	1.04E-01	2	+/- 30%
Dibromochloromethane	22.71	22.54	22.88	2.67E+00	2.91E+00	2.97E+00	2.94E+00	2.80E+00	2.86E+00	1.09E-01	4	+/- 30%
Chlorobenzene	25.40	25.21	25.59	1.98E+00	2.03E+00	2.01E+00	2.20E+00	2.10E+00	2.06E+00	7.95E-02	4	+/- 30%
Bromoform	29.76	29.54	29.98	1.78E+00	1.83E+00	1.90E+00	1.86E+00	1.77E+00	1.83E+00	4.87E-02	3	+/- 30%
4-Bromofluorobenzene	31.22	30.99	31.46	-----	-----	-----	-----	-----	-----	-----	-----	-----
-Internal standard	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1,1,2,2-Tetrachloroethane	32.00	31.76	32.23	3.62E+00	3.41E+00	3.40E+00	3.19E+00	2.99E+00	3.32E+00	2.14E-01	6	+/- 30%
1,3-Dichlorobenzene	34.62	34.36	34.88	2.88E+00	3.00E+00	2.99E+00	3.01E+00	2.89E+00	2.95E+00	5.68E-02	2	+/- 30%
1,4-Dichlorobenzene	34.87	34.60	35.12	3.18E+00	3.35E+00	3.20E+00	3.34E+00	3.12E+00	3.24E+00	9.19E-02	3	+/- 30%
1,2-Dichlorobenzene	35.75	35.48	36.02	2.93E+00	3.13E+00	2.93E+00	3.12E+00	2.86E+00	2.96E+00	9.46E-02	3	+/- 30%

FASP Method 8010 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-VRX

COMPOUND	Midpoint RT	1.5 % RT Window		RELATIVE RESPONSE FACTORS 20 ng	40 ng	100 ng	200 ng	400 ng	Average RRF	SD	%RSD	QC LIMITS
Dichlorodifluoromethane/	3.07	3.05	3.09	9.42E-01	5.27E-01	9.06E-01	9.26E-01	8.96E-01	8.39E-01	1.57E-01	19	+/- 50%
Chloromethane	---	-----	-----	---	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.56	3.53	3.59	1.79E+00	1.09E+00	1.71E+00	1.90E+00	1.88E+00	1.68E+00	3.02E-01	18	+/- 50%
Bromomethane/Chloroethane	4.10	4.07	4.13	2.14E+00	1.18E+00	1.62E+00	1.76E+00	1.77E+00	1.69E+00	3.09E-01	18	+/- 50%
Trichlorofluoromethane	5.07	5.03	5.11	3.07E+00	2.35E+00	3.57E+00	3.72E+00	3.71E+00	3.28E+00	5.24E-01	16	+/- 50%
1,1-Dichloroethene	5.84	5.80	5.88	3.24E+00	2.48E+00	3.70E+00	3.75E+00	3.65E+00	3.36E+00	4.75E-01	14	+/- 30%
Methylene Chloride	6.05	6.00	6.10	5.72E+00	4.23E+00	5.90E+00	6.12E+00	5.91E+00	5.58E+00	6.87E-01	12	+/- 30%
trans-1,2-Dichloroethene	7.24	7.19	7.29	3.89E+00	2.89E+00	4.10E+00	4.24E+00	4.06E+00	3.84E+00	4.87E-01	13	+/- 30%
1,1-Dichloroethane	7.72	7.66	7.78	4.22E+00	3.09E+00	4.38E+00	4.51E+00	4.33E+00	4.10E+00	5.15E-01	13	+/- 30%
cis-1,2-Dichloroethene	8.92	8.85	8.99	4.23E+00	3.09E+00	4.38E+00	4.53E+00	4.36E+00	4.12E+00	5.24E-01	13	+/- 30%
Chloroform	9.39	9.32	9.46	5.37E+00	3.93E+00	5.48E+00	5.59E+00	5.27E+00	5.13E+00	6.10E-01	12	+/- 30%
1,2-Dichloroethane	10.88	10.80	10.96	4.03E+00	2.90E+00	4.16E+00	4.08E+00	4.04E+00	3.84E+00	4.75E-01	12	+/- 30%
1,1,1-Trichloroethane	11.09	11.01	11.17	5.38E+00	3.93E+00	5.35E+00	5.57E+00	5.21E+00	5.09E+00	5.90E-01	12	+/- 30%
Carbon tetrachloride	11.98	11.89	12.07	5.71E+00	4.17E+00	5.88E+00	6.07E+00	5.76E+00	5.52E+00	6.87E-01	12	+/- 30%
1,2-Dichloropropane	13.75	13.65	13.85	3.45E+00	2.49E+00	3.87E+00	3.98E+00	3.84E+00	3.52E+00	5.50E-01	16	+/- 30%
Trichloroethene	13.89	13.79	13.99	6.25E+00	4.48E+00	6.29E+00	5.48E+00	5.81E+00	5.66E+00	6.64E-01	12	+/- 30%
Bromodichloromethane	13.98	13.88	14.08	4.21E+00	2.96E+00	3.78E+00	4.31E+00	3.74E+00	3.80E+00	4.76E-01	13	+/- 30%
cis-1,3-Dichloropropene	16.03	15.91	16.15	3.41E+00	2.52E+00	3.69E+00	3.73E+00	3.61E+00	3.39E+00	4.51E-01	13	+/- 30%
trans-1,3-Dichloropropene	17.47	17.34	17.60	3.30E+00	2.39E+00	3.29E+00	3.41E+00	3.35E+00	3.15E+00	3.82E-01	12	+/- 30%
1,1,2-Trichloroethane	17.86	17.73	17.99	4.82E+00	3.41E+00	4.59E+00	4.46E+00	4.28E+00	4.31E+00	4.84E-01	11	+/- 30%
1-Chloro-2-bromopropane	18.41	18.27	18.55	2.55E+00	1.88E+00	2.69E+00	2.87E+00	2.88E+00	2.57E+00	3.67E-01	14	+/- 30%
-surrogate	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	19.54	19.39	19.69	2.59E+00	1.91E+00	2.75E+00	2.76E+00	2.73E+00	2.55E+00	3.25E-01	13	+/- 30%
Tetrachloroethene	21.38	21.22	21.54	5.14E+00	3.76E+00	5.38E+00	5.40E+00	4.92E+00	4.92E+00	6.05E-01	12	+/- 30%
Chlorobenzene	24.27	24.09	24.45	1.65E+00	1.27E+00	1.91E+00	1.96E+00	1.98E+00	1.75E+00	2.71E-01	15	+/- 30%
Bromoform	26.22	26.02	26.42	1.78E+00	1.30E+00	1.94E+00	1.77E+00	1.77E+00	1.71E+00	2.15E-01	13	+/- 30%
1,1,2,2-Tetrachloroethane	28.18	27.97	28.39	3.12E+00	2.20E+00	3.28E+00	3.03E+00	2.98E+00	2.93E+00	3.75E-01	13	+/- 30%
4-Bromofluorobenzene	30.10	29.87	30.32	-----	-----	-----	-----	-----	-----	-----	-----	-----
-Internal standard	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1,3-Dichlorobenzene	34.13	33.87	34.38	2.44E+00	1.87E+00	2.68E+00	2.69E+00	2.71E+00	2.48E+00	3.22E-01	13	+/- 30%
1,4-Dichlorobenzene	34.24	33.98	34.49	3.06E+00	2.25E+00	3.14E+00	3.03E+00	3.05E+00	2.90E+00	3.31E-01	11	+/- 30%
1,2-Dichlorobenzene	35.13	34.87	35.39	2.62E+00	2.07E+00	2.79E+00	2.70E+00	2.65E+00	2.57E+00	2.57E-01	10	+/- 30%

00007

EPA METHOD 8020 INITIAL CALIBRATION DATA

FASP Method 8020 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March, 19 1995

Column: DB-VRX

COMPOUND	Midpoint RT	1.5 % RT Window		PEAK AREAS				
				20 ng	40 ng	100 ng	200 ng	400 ng
Benzene	12.10	12.01	12.19	43690	88130	225250	454970	922610
Fluorobenzene--surrogate	12.72	12.62	12.82	29140	59150	150790	310225	641275
Trichloroethene	13.86	13.76	13.96	27730	55762	138935	275210	567715
Toluene	18.48	18.34	18.62	39555	78535	208365	427990	880815
Chlorobenzene	24.20	24.02	24.38	43470	87490	226910	467670	968440
Ethylbenzene	25.37	25.18	25.56	34585	70590	182110	377740	783610
p,m-Xylene	26.35	26.15	26.55	82650	167170	436410	893540	1825000
o-Xylene	28.22	28.01	28.43	33545	68630	176900	366985	760695
4-Bromofluorobenzene	30.02	29.79	30.25	705135	701010	693530	686195	681365
-Internal standard		---	---	---	---	---	---	---

COMPOUND	RELATIVE RESPONSE FACTORS					Average RRF	SD	% RSD	QC LIMITS
	20 ng	40 ng	100 ng	200 ng	400 ng				
Benzene	1.24E+00	1.26E+00	1.30E+00	1.33E+00	1.35E+00	1.30E+00	4.25E-02	3	+/- 30%
Fluorobenzene--surrogate	8.27E-01	8.44E-01	8.70E-01	9.04E-01	9.41E-01	8.77E-01	4.14E-02	5	+/- 30%
Trichloroethene	7.87E-01	7.95E-01	8.01E-01	8.02E-01	8.33E-01	8.04E-01	1.58E-02	2	+/- 30%
Toluene	1.12E+00	1.12E+00	1.20E+00	1.25E+00	1.29E+00	1.20E+00	6.82E-02	6	+/- 30%
Chlorobenzene	1.23E+00	1.25E+00	1.31E+00	1.36E+00	1.42E+00	1.31E+00	7.05E-02	5	+/- 30%
Ethylbenzene	9.81E-01	1.01E+00	1.05E+00	1.10E+00	1.15E+00	1.06E+00	6.15E-02	6	+/- 30%
p,m-Xylene	2.34E+00	2.38E+00	2.52E+00	2.60E+00	2.68E+00	2.51E+00	1.27E-01	5	+/- 30%
o-Xylene	9.51E-01	9.79E-01	1.02E+00	1.07E+00	1.12E+00	1.03E+00	5.98E-02	6	+/- 30%

FASP Method 8020 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-624

COMPOUND	Midpoint RT	1.5 % RT Window		PEAK AREAS 20 ng	40 ng	100 ng	200 ng	400 ng
Benzene	12.73	12.63	12.83	83006	180095	501208	1068449	2316244
Fluorobenzene--surrogate	13.57	13.47	13.67	53214	115646	339448	695640	1482904
---	---	---	---	---	---	---	---	---
Toluene	19.08	18.94	19.22	77074	164174	470032	984116	2089328
Chlorobenzene	25.39	25.20	25.58	81856	180112	510684	1068480	2315431
Ethylbenzene	26.01	25.81	26.21	66562	144756	412926	864605	1841510
p,m-Xylene	26.62	26.42	26.82	171219	378641	1020848	2158228	4723542
o-Xylene	28.76	28.54	28.98	65825	141200	398362	842232	1782608
4-Bromofluorobenzene	31.20	30.97	31.43	1715570	1709148	1689232	1644627	1640542
---Internal standard		---	---	---	---	---	---	---

COMPOUND	RELATIVE RESPONSE FACTORS 20 ng	40 ng	100 ng	200 ng	400 ng	Average RRF	SD	% RSD	QC LIMITS
Benzene	9.68E-01	1.05E+00	1.19E+00	1.30E+00	1.41E+00	1.18E+00	1.61E-01	14	+/- 30%
Fluorobenzene--surrogate	6.20E-01	6.77E-01	8.04E-01	8.46E-01	9.04E-01	7.70E-01	1.06E-01	14	+/- 30%
---	---	---	---	---	---	---	---	---	---
Toluene	8.99E-01	9.61E-01	1.11E+00	1.20E+00	1.27E+00	1.09E+00	1.41E-01	13	+/- 30%
Chlorobenzene	9.54E-01	1.05E+00	1.21E+00	1.30E+00	1.41E+00	1.19E+00	1.65E-01	14	+/- 30%
Ethylbenzene	7.76E-01	8.47E-01	9.78E-01	1.05E+00	1.12E+00	9.55E-01	1.28E-01	13	+/- 30%
p,m-Xylene	2.00E+00	2.22E+00	2.42E+00	2.62E+00	2.88E+00	2.43E+00	3.08E-01	13	+/- 30%
o-Xylene	7.67E-01	8.26E-01	9.43E-01	1.02E+00	1.09E+00	9.30E-01	1.19E-01	13	+/- 30%

EPA METHOD 8010 CONTINUING CALIBRATION DATA

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.14	3.12	3.16	394167	1.46E+00	1.90E+00	-23	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.75	3.72	3.78	663402	2.45E+00	2.76E+00	-11	+/- 50%
Bromomethane/Chloroethane	4.45	4.42	4.48	378586	1.40E+00	2.53E+00	-45	+/- 50%
Trichlorofluoromethane	5.14	5.10	5.18	792556	2.93E+00	3.52E+00	-17	+/- 50%
1,1-Dichloroethene	6.20	6.15	6.25	1069696	3.95E+00	4.52E+00	-12	+/- 25%
Methylene Chloride	7.29	7.24	7.34	1271750	4.70E+00	5.49E+00	-14	+/- 25%
trans-1,2-Dichloroethene	7.88	7.82	7.94	1096280	4.05E+00	4.52E+00	-10	+/- 25%
1,1-Dichloroethane	8.91	8.84	8.98	1121230	4.14E+00	4.61E+00	-10	+/- 25%
cis-1,2-Dichloroethene	10.41	10.33	10.49	1156068	4.27E+00	4.77E+00	-10	+/- 25%
Chloroform	11.30	11.22	11.38	1366352	5.05E+00	5.76E+00	-12	+/- 25%
1,1,1-Trichloroethane	11.73	11.64	11.82	1275673	4.72E+00	5.46E+00	-14	+/- 25%
Carbon Tetrachloride	12.17	12.08	12.26	1500118	5.55E+00	6.32E+00	-12	+/- 25%
1,2-Dichloroethane	12.86	12.76	12.96	1107005	4.09E+00	4.48E+00	-9	+/- 25%
Trichloroethene	14.71	14.60	14.82	1346772	4.98E+00	5.69E+00	-13	+/- 25%
1,2-Dichloropropane	15.40	15.28	15.52	1083371	4.00E+00	4.38E+00	-9	+/- 25%
Bromodichloromethane	16.35	16.23	16.47	1014024	3.75E+00	4.05E+00	-7	+/- 25%
cis-1,3-Dichloropropene	17.87	17.74	18.00	974690	3.60E+00	3.90E+00	-8	+/- 25%
trans-1,3-Dichloropropene	20.20	20.05	20.35	927726	3.43E+00	3.58E+00	-4	+/- 25%
1-Chloro-2-bromopropane	20.40	20.25	20.55	729197	2.70E+00	2.94E+00	-8	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.98	20.82	21.14	1228250	4.54E+00	4.85E+00	-6	+/- 25%
Tetrachloroethene	21.44	21.28	21.60	1391934	5.15E+00	5.94E+00	-13	+/- 25%
Dibromochloromethane	22.69	22.52	22.86	745632	2.76E+00	2.86E+00	-4	+/- 25%
Chlorobenzene	25.38	25.19	25.57	500477	1.85E+00	2.06E+00	-10	+/- 25%
Bromoform	29.73	29.51	29.95	511552	1.89E+00	1.83E+00	3	+/- 25%
4-Bromofluorobenzene	31.20	30.97	31.43	541018	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,1,2,2-Tetrachloroethane	31.97	31.73	32.21	959244	3.55E+00	3.32E+00	7	+/- 25%
1,3-Dichlorobenzene	34.59	34.33	34.85	722069	2.67E+00	2.95E+00	-10	+/- 25%
1,4-Dichlorobenzene	34.85	34.59	35.11	778648	2.88E+00	3.24E+00	-11	+/- 25%
1,2-Dichlorobenzene	35.73	35.46	36.00	734459	2.72E+00	2.96E+00	-8	+/- 25%

NR: Analyte not recovered NA: Not applicable

00012

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.09	3.07	3.12	409910	7.61E-01	8.39E-01	-9	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.59	3.56	3.62	597300	1.11E+00	1.68E+00	-34	+/- 50%
Bromomethane/Chloroethane	4.13	4.10	4.16	681300	1.27E+00	1.69E+00	-25	+/- 50%
Trichlorofluoromethane	5.11	5.07	5.15	1792197	3.33E+00	3.28E+00	1	+/- 50%
1,1-Dichloroethene	5.91	5.86	5.95	1880859	3.49E+00	3.36E+00	4	+/- 25%
Methylene Chloride	6.10	6.06	6.15	2839299	5.27E+00	5.58E+00	-5	+/- 25%
trans-1,2-Dichloroethene	7.30	7.24	7.35	2053405	3.81E+00	3.84E+00	-1	+/- 25%
1,1-Dichloroethane	7.77	7.71	7.83	2165030	4.02E+00	4.10E+00	-2	+/- 25%
cis-1,2-Dichloroethene	8.96	8.90	9.03	2155190	4.00E+00	4.12E+00	-3	+/- 25%
Chloroform	9.43	9.36	9.50	2654895	4.93E+00	5.13E+00	-4	+/- 25%
1,2-Dichloroethane	10.91	10.83	11.00	2075671	3.85E+00	3.84E+00	0	+/- 25%
1,1,1-Trichloroethane	11.13	11.05	11.22	2615869	4.86E+00	5.09E+00	-5	+/- 25%
Carbon tetrachloride	12.01	11.92	12.10	2876265	5.34E+00	5.52E+00	-3	+/- 25%
1,2-Dichloropropane	13.77	13.66	13.87	2034614	3.78E+00	3.52E+00	7	+/- 25%
Trichloroethene	13.91	13.80	14.01	2760902	5.13E+00	5.66E+00	-9	+/- 25%
Bromodichloromethane	14.00	13.90	14.11	2025419	3.76E+00	3.80E+00	-1	+/- 25%
cis-1,3-Dichloropropene	16.03	15.91	16.15	1875580	3.48E+00	3.39E+00	3	+/- 25%
trans-1,3-Dichloropropene	17.47	17.34	17.60	1794817	3.33E+00	3.15E+00	6	+/- 25%
1,1,2-Trichloroethane	17.85	17.72	17.99	2407753	4.47E+00	4.31E+00	4	+/- 25%
1-Chloro-2-bromopropane	18.41	18.27	18.54	1375175	2.55E+00	2.57E+00	-1	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
Dibromochloromethane	19.53	19.38	19.67	1438440	2.67E+00	2.55E+00	5	+/- 25%
Tetrachloroethene	21.37	21.21	21.53	2652510	4.93E+00	4.92E+00	0	+/- 25%
Chlorobenzene	24.25	24.07	24.43	970950	1.80E+00	1.75E+00	3	+/- 25%
Bromoform	26.19	25.99	26.38	1061100	1.97E+00	1.71E+00	15	+/- 25%
1,1,2,2-Tetrachloroethane	28.14	27.92	28.35	1862875	3.46E+00	2.93E+00	18	+/- 25%
4-Bromofluorobenzene	30.07	29.84	30.29	1076925	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,3-Dichlorobenzene	34.11	33.85	34.36	1366490	2.54E+00	2.48E+00	2	+/- 25%
1,4-Dichlorobenzene	34.30	34.04	34.56	1528260	2.84E+00	2.90E+00	-2	+/- 25%
1,2-Dichlorobenzene	35.11	34.85	35.38	1402275	2.60E+00	2.57E+00	1	+/- 25%

NR: Analyte not recovered NA: Not applicable

00013

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.16	3.14	3.18	386683	1.54E+00	1.90E+00	-19	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.75	3.72	3.78	603101	2.40E+00	2.76E+00	-13	+/- 50%
Bromomethane/Chloroethane	4.44	4.41	4.47	453041	1.80E+00	2.53E+00	-29	+/- 50%
Trichlorofluoromethane	5.17	5.13	5.21	775195	3.08E+00	3.52E+00	-13	+/- 50%
1,1-Dichloroethene	6.21	6.16	6.26	1014720	4.03E+00	4.52E+00	-11	+/- 25%
Methylene Chloride	7.28	7.23	7.33	1221195	4.85E+00	5.49E+00	-12	+/- 25%
trans-1,2-Dichloroethene	7.89	7.83	7.95	1002071	3.98E+00	4.52E+00	-12	+/- 25%
1,1-Dichloroethane	8.92	8.85	8.99	1046116	4.16E+00	4.61E+00	-10	+/- 25%
cis-1,2-Dichloroethene	10.41	10.33	10.49	1005118	3.99E+00	4.77E+00	-16	+/- 25%
Chloroform	11.30	11.22	11.38	1257126	4.99E+00	5.76E+00	-13	+/- 25%
1,1,1-Trichloroethane	11.73	11.64	11.82	1190449	4.73E+00	5.46E+00	-13	+/- 25%
Carbon Tetrachloride	12.17	12.08	12.26	1404838	5.58E+00	6.32E+00	-12	+/- 25%
1,2-Dichloroethane	12.86	12.76	12.96	1023925	4.07E+00	4.48E+00	-9	+/- 25%
Trichloroethene	14.71	14.60	14.82	1246132	4.95E+00	5.69E+00	-13	+/- 25%
1,2-Dichloropropane	15.40	15.28	15.52	989259	3.93E+00	4.38E+00	-10	+/- 25%
Bromodichloromethane	16.36	16.24	16.48	928008	3.69E+00	4.05E+00	-9	+/- 25%
cis-1,3-Dichloropropene	17.88	17.75	18.01	897126	3.56E+00	3.90E+00	-9	+/- 25%
trans-1,3-Dichloropropene	20.20	20.05	20.35	865131	3.44E+00	3.58E+00	-4	+/- 25%
1-Chloro-2-bromopropane	20.41	20.26	20.56	671590	2.67E+00	2.94E+00	-9	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.98	20.82	21.14	1106961	4.40E+00	4.85E+00	-9	+/- 25%
Tetrachloroethene	21.45	21.29	21.61	1328120	5.28E+00	5.94E+00	-11	+/- 25%
Dibromochloromethane	22.70	22.53	22.87	683357	2.72E+00	2.86E+00	-5	+/- 25%
Chlorobenzene	25.39	25.20	25.58	480218	1.91E+00	2.06E+00	-8	+/- 25%
Bromoform	29.74	29.52	29.96	468530	1.86E+00	1.83E+00	2	+/- 25%
4-Bromofluorobenzene	31.22	30.99	31.45	503376	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,1,2,2-Tetrachloroethane	31.99	31.75	32.23	803774	3.19E+00	3.32E+00	-4	+/- 25%
1,3-Dichlorobenzene	34.61	34.35	34.87	674929	2.68E+00	2.95E+00	-9	+/- 25%
1,4-Dichlorobenzene	34.86	34.60	35.12	736889	2.93E+00	3.24E+00	-10	+/- 25%
1,2-Dichlorobenzene	35.74	35.47	36.01	680504	2.70E+00	2.96E+00	-9	+/- 25%

NR: Analyte not recovered NA: Not applicable

00014

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.12	3.09	3.14	441090	8.19E-01	8.39E-01	-2	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.59	3.57	3.62	765186	1.42E+00	1.68E+00	-15	+/- 50%
Bromomethane/Chloroethane	4.14	4.11	4.18	764354	1.42E+00	1.69E+00	-16	+/- 50%
Trichlorofluoromethane	5.12	5.08	5.16	1769429	3.28E+00	3.28E+00	0	+/- 50%
1,1-Dichloroethene	5.90	5.85	5.94	1844006	3.42E+00	3.36E+00	2	+/- 25%
Methylene Chloride	6.10	6.05	6.14	2855045	5.30E+00	5.58E+00	-5	+/- 25%
trans-1,2-Dichloroethene	7.30	7.25	7.36	2046890	3.80E+00	3.84E+00	-1	+/- 25%
1,1-Dichloroethane	7.78	7.72	7.84	2164010	4.02E+00	4.10E+00	-2	+/- 25%
cis-1,2-Dichloroethene	8.97	8.90	9.04	2195320	4.07E+00	4.12E+00	-1	+/- 25%
Chloroform	9.44	9.37	9.51	2686240	4.98E+00	5.13E+00	-3	+/- 25%
1,2-Dichloroethane	10.92	10.84	11.00	2008141	3.73E+00	3.84E+00	-3	+/- 25%
1,1,1-Trichloroethane	11.14	11.06	11.22	2630669	4.88E+00	5.09E+00	-4	+/- 25%
Carbon tetrachloride	12.02	11.93	12.11	2874565	5.33E+00	5.52E+00	-3	+/- 25%
1,2-Dichloropropane	13.77	13.67	13.88	1931687	3.58E+00	3.52E+00	2	+/- 25%
Trichloroethene	13.92	13.81	14.02	2973664	5.52E+00	5.66E+00	-3	+/- 25%
Bromodichloromethane	14.01	13.91	14.12	1804240	3.35E+00	3.80E+00	-12	+/- 25%
cis-1,3-Dichloropropene	16.04	15.92	16.16	1850890	3.43E+00	3.39E+00	1	+/- 25%
trans-1,3-Dichloropropene	17.48	17.35	17.61	1746193	3.24E+00	3.15E+00	3	+/- 25%
1,1,2-Trichloroethane	17.86	17.73	18.00	2310382	4.29E+00	4.31E+00	-1	+/- 25%
1-Chloro-2-bromopropane	18.42	18.28	18.56	1370690	2.54E+00	2.57E+00	-1	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
Dibromochloromethane	19.53	19.39	19.68	1397960	2.59E+00	2.55E+00	2	+/- 25%
Tetrachloroethene	21.38	21.22	21.54	2669180	4.95E+00	4.92E+00	1	+/- 25%
Chlorobenzene	24.26	24.08	24.44	982000	1.82E+00	1.75E+00	4	+/- 25%
Bromoform	26.20	26.01	26.40	983735	1.83E+00	1.71E+00	7	+/- 25%
1,1,2,2-Tetrachloroethane	28.16	27.94	28.37	1722585	3.20E+00	2.93E+00	9	+/- 25%
4-Bromofluorobenzene	30.09	29.86	30.31	1077765	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,3-Dichlorobenzene	34.13	33.87	34.38	1376500	2.55E+00	2.48E+00	3	+/- 25%
1,4-Dichlorobenzene	34.32	34.06	34.58	1542080	2.86E+00	2.90E+00	-1	+/- 25%
1,2-Dichlorobenzene	35.13	34.86	35.39	1407330	2.61E+00	2.57E+00	2	+/- 25%

NR: Analyte not recovered NA: Not applicable

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 23, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.11	3.09	3.13	396439	1.62E+00	1.90E+00	-15	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.74	3.71	3.77	628677	2.57E+00	2.76E+00	-7	+/- 50%
Bromomethane/Chloroethane	4.43	4.40	4.46	442453	1.81E+00	2.53E+00	-28	+/- 50%
Trichlorofluoromethane	5.14	5.10	5.18	790992	3.24E+00	3.52E+00	-8	+/- 50%
1,1-Dichloroethene	6.13	6.08	6.18	1016180	4.16E+00	4.52E+00	-8	+/- 25%
Methylene Chloride	7.26	7.21	7.31	1176836	4.81E+00	5.49E+00	-12	+/- 25%
trans-1,2-Dichloroethene	7.86	7.80	7.92	986120	4.03E+00	4.52E+00	-11	+/- 25%
1,1-Dichloroethane	8.88	8.81	8.95	1030634	4.22E+00	4.61E+00	-9	+/- 25%
cis-1,2-Dichloroethene	10.38	10.30	10.46	1048472	4.29E+00	4.77E+00	-10	+/- 25%
Chloroform.	11.30	11.22	11.38	1234584	5.05E+00	5.76E+00	-12	+/- 25%
1,1,1-Trichloroethane	11.69	11.60	11.78	1192532	4.88E+00	5.46E+00	-11	+/- 25%
Carbon Tetrachloride	12.14	12.05	12.23	1357075	5.55E+00	6.32E+00	-12	+/- 25%
1,2-Dichloroethane	12.83	12.73	12.93	964360	3.94E+00	4.48E+00	-12	+/- 25%
Trichloroethene	14.67	14.56	14.78	1225004	5.01E+00	5.69E+00	-12	+/- 25%
1,2-Dichloropropane	15.37	15.25	15.49	972270	3.98E+00	4.38E+00	-9	+/- 25%
Bromodichloromethane	16.33	16.21	16.45	900140	3.68E+00	4.05E+00	-9	+/- 25%
cis-1,3-Dichloropropene	17.84	17.71	17.97	857202	3.51E+00	3.90E+00	-10	+/- 25%
trans-1,3-Dichloropropene	20.17	20.02	20.32	773553	3.16E+00	3.58E+00	-12	+/- 25%
1-Chloro-2-bromopropane	20.37	20.22	20.52	672558	2.75E+00	2.94E+00	-6	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.94	20.78	21.10	1043420	4.27E+00	4.85E+00	-12	+/- 25%
Tetrachloroethene	21.40	21.24	21.56	1239231	5.07E+00	5.94E+00	-15	+/- 25%
Dibromochloromethane	22.66	22.49	22.83	649801	2.66E+00	2.86E+00	-7	+/- 25%
Chlorobenzene	25.36	25.17	25.55	456742	1.87E+00	2.06E+00	-9	+/- 25%
Bromoform	29.72	29.50	29.94	430797	1.76E+00	1.83E+00	-4	+/- 25%
4-Bromofluorobenzene	31.20	30.97	31.43	488932	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,1,2,2-Tetrachloroethane	31.97	31.73	32.21	737730	3.02E+00	3.32E+00	-9	+/- 25%
1,3-Dichlorobenzene	34.59	34.33	34.85	673859	2.76E+00	2.95E+00	-7	+/- 25%
1,4-Dichlorobenzene	34.84	34.58	35.10	719897	2.94E+00	3.24E+00	-9	+/- 25%
1,2-Dichlorobenzene	35.72	35.45	35.99	660956	2.70E+00	2.96E+00	-9	+/- 25%

NA: Not applicable

00016

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 23, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.08	3.06	3.10	394041	8.70E-01	8.39E-01	4	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.59	3.56	3.62	685949	1.52E+00	1.68E+00	-10	+/- 50%
Bromomethane/Chloroethane	4.14	4.11	4.17	670443	1.48E+00	1.69E+00	-13	+/- 50%
Trichlorofluoromethane	5.10	5.06	5.14	1576272	3.48E+00	3.28E+00	6	+/- 50%
1,1-Dichloroethene	5.84	5.80	5.88	1583849	3.50E+00	3.36E+00	4	+/- 25%
Methylene Chloride	6.07	6.02	6.12	2566227	5.67E+00	5.58E+00	2	+/- 25%
trans-1,2-Dichloroethene	7.27	7.22	7.32	1823860	4.03E+00	3.84E+00	5	+/- 25%
1,1-Dichloroethane	7.75	7.69	7.81	1929480	4.26E+00	4.10E+00	4	+/- 25%
cis-1,2-Dichloroethene	8.94	8.87	9.01	1952830	4.31E+00	4.12E+00	5	+/- 25%
Chloroform	9.41	9.34	9.48	2402390	5.31E+00	5.13E+00	4	+/- 25%
1,2-Dichloroethane	10.89	10.81	10.97	1786451	3.95E+00	3.84E+00	3	+/- 25%
1,1,1-Trichloroethane	11.10	11.02	11.18	2330908	5.15E+00	5.09E+00	1	+/- 25%
Carbon tetrachloride	11.98	11.89	12.07	2574420	5.69E+00	5.52E+00	3	+/- 25%
1,2-Dichloropropane	13.73	13.63	13.83	1717442	3.79E+00	3.52E+00	8	+/- 25%
Trichloroethene	13.88	13.78	13.98	2678227	5.92E+00	5.66E+00	5	+/- 25%
Bromodichloromethane	13.98	13.88	14.08	1564540	3.46E+00	3.80E+00	-9	+/- 25%
cis-1,3-Dichloropropene	16.00	15.88	16.12	1600640	3.54E+00	3.39E+00	4	+/- 25%
trans-1,3-Dichloropropene	17.44	17.31	17.57	1495051	3.30E+00	3.15E+00	5	+/- 25%
1,1,2-Trichloroethane	17.82	17.69	17.95	1979218	4.37E+00	4.31E+00	1	+/- 25%
1-Chloro-2-bromopropane	18.38	18.24	18.52	1185240	2.62E+00	2.57E+00	2	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
Dibromochloromethane	19.49	19.34	19.64	1193240	2.64E+00	2.55E+00	3	+/- 25%
Tetrachloroethene	21.34	21.18	21.50	2279700	5.04E+00	4.92E+00	2	+/- 25%
Chlorobenzene	24.22	24.04	24.40	832760	1.84E+00	1.75E+00	5	+/- 25%
Bromoform	26.16	25.96	26.36	808180	1.79E+00	1.71E+00	4	+/- 25%
1,1,2,2-Tetrachloroethane	28.12	27.91	28.33	1370695	3.03E+00	2.93E+00	4	+/- 25%
4-Bromofluorobenzene	30.06	29.83	30.29	905390	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,3-Dichlorobenzene	34.10	33.84	34.36	1180742	2.61E+00	2.48E+00	5	+/- 25%
1,4-Dichlorobenzene	34.29	34.03	34.55	1336747	2.95E+00	2.90E+00	2	+/- 25%
1,2-Dichlorobenzene	35.10	34.84	35.36	1210930	2.67E+00	2.57E+00	4	+/- 25%

NR: Analyte not recovered NA: Not applicable

00017

EPA METHOD 8020 CONTINUING CALIBRATION DATA

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.74	12.64	12.84	984417	1.15E+00	1.18E+00	3	+/- 25%
Fluorobenzene--surrogate	13.58	13.48	13.68	639046	7.47E-01	7.70E-01	3	+/- 25%
---	---	---	---	---	---	---	---	---
Toluene	19.06	18.92	19.20	907077	1.06E+00	1.09E+00	3	+/- 25%
Chlorobenzene	25.36	25.17	25.55	985127	1.15E+00	1.19E+00	3	+/- 25%
Ethylbenzene	25.99	25.80	26.18	796656	9.32E-01	9.55E-01	2	+/- 25%
p,m-Xylene	26.60	26.40	26.80	1990760	2.33E+00	2.43E+00	4	+/- 25%
o-Xylene	28.72	28.50	28.94	778044	9.10E-01	9.30E-01	2	+/- 25%
4-Bromofluorobenzene	31.18	30.95	31.41	1710048	---	---	---	---
-Internal standard	---	---	---	---	---	---	---	---

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.11	12.02	12.20	412950	1.20E+00	1.30E+00	8	+/- 25%
Fluorobenzene--surrogate	12.74	12.64	12.83	280880	8.15E-01	8.77E-01	7	+/- 25%
Trichloroethene	13.87	13.76	13.97	255830	7.42E-01	8.04E-01	8	+/- 25%
Toluene	18.49	18.35	18.63	388865	1.13E+00	1.20E+00	6	+/- 25%
Chlorobenzene	24.21	24.03	24.39	425070	1.23E+00	1.31E+00	6	+/- 25%
Ethylbenzene	25.34	25.15	25.53	342420	9.93E-01	1.06E+00	6	+/- 25%
p,m-Xylene	26.33	26.13	26.52	811520	2.35E+00	2.51E+00	6	+/- 25%
o-Xylene	28.19	27.97	28.40	333985	9.69E-01	1.03E+00	6	+/- 25%
4-Bromofluorobenzene	30.03	29.80	30.25	689550	---		---	---
-Internal standard	---	---	---	---	---		---	---

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.74	12.64	12.84	848934	1.19E+00	1.18E+00	-0	+/- 25%
Fluorobenzene--surrogate	13.59	13.49	13.69	553758	7.74E-01	7.70E-01	-0	+/- 25%
---	---	---	---	---	---	---	---	---
Toluene	19.07	18.93	19.21	783984	1.10E+00	1.09E+00	-1	+/- 25%
Chlorobenzene	25.37	25.18	25.56	848968	1.19E+00	1.19E+00	-0	+/- 25%
Ethylbenzene	26.00	25.81	26.20	690294	9.64E-01	9.55E-01	-1	+/- 25%
p,m-Xylene	26.61	26.41	26.81	1698174	2.37E+00	2.43E+00	2	+/- 25%
o-Xylene	28.74	28.52	28.96	672830	9.40E-01	9.30E-01	-1	+/- 25%
4-Bromofluorobenzene	31.20	30.97	31.43	1431506	---	---	---	---
-Internal standard	---	---	---	---	---	---	---	---

00021

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.11	12.02	12.20	370155	1.23E+00	1.30E+00	5	+/- 25%
Fluorobenzene--surrogate	12.74	12.64	12.84	251610	8.33E-01	8.77E-01	5	+/- 25%
Trichloroethene	13.88	13.78	13.98	225950	7.48E-01	8.04E-01	7	+/- 25%
Toluene	18.51	18.37	18.65	348175	1.15E+00	1.20E+00	4	+/- 25%
Chlorobenzene	24.22	24.04	24.40	379320	1.26E+00	1.31E+00	4	+/- 25%
Ethylbenzene	25.36	25.17	25.55	306505	1.01E+00	1.06E+00	4	+/- 25%
p,m-Xylene	26.34	26.14	26.54	728060	2.41E+00	2.51E+00	4	+/- 25%
o-Xylene	28.21	28.00	28.42	298660	9.89E-01	1.03E+00	4	+/- 25%
4-Bromofluorobenzene	30.05	29.82	30.28	603985	---		---	---
-Internal standard	---	---	---	---	---		---	---

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 23, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.71	12.61	12.81	715274	1.22E+00	1.18E+00	-3	+/- 25%
Fluorobenzene--surrogate	13.55	13.45	13.65	449149	7.68E-01	7.70E-01	0	+/- 25%
---	---	---	---	---	---	---	---	---
Toluene	19.03	18.89	19.17	668173	1.14E+00	1.09E+00	-5	+/- 25%
Chlorobenzene	25.34	25.15	25.53	717448	1.23E+00	1.19E+00	-3	+/- 25%
Ethylbenzene	25.96	25.77	26.15	579314	9.91E-01	9.55E-01	-4	+/- 25%
p,m-Xylene	26.58	26.38	26.78	1457064	2.49E+00	2.43E+00	-3	+/- 25%
o-Xylene	28.71	28.49	28.93	570883	9.76E-01	9.30E-01	-5	+/- 25%
4-Bromofluorobenzene	31.17	30.94	31.40	1169630	---	---	---	---
-Internal standard	---	---	---	---	---	---	---	---

00023

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 23, 1995
Initial Calibration Date: March 19, 1995

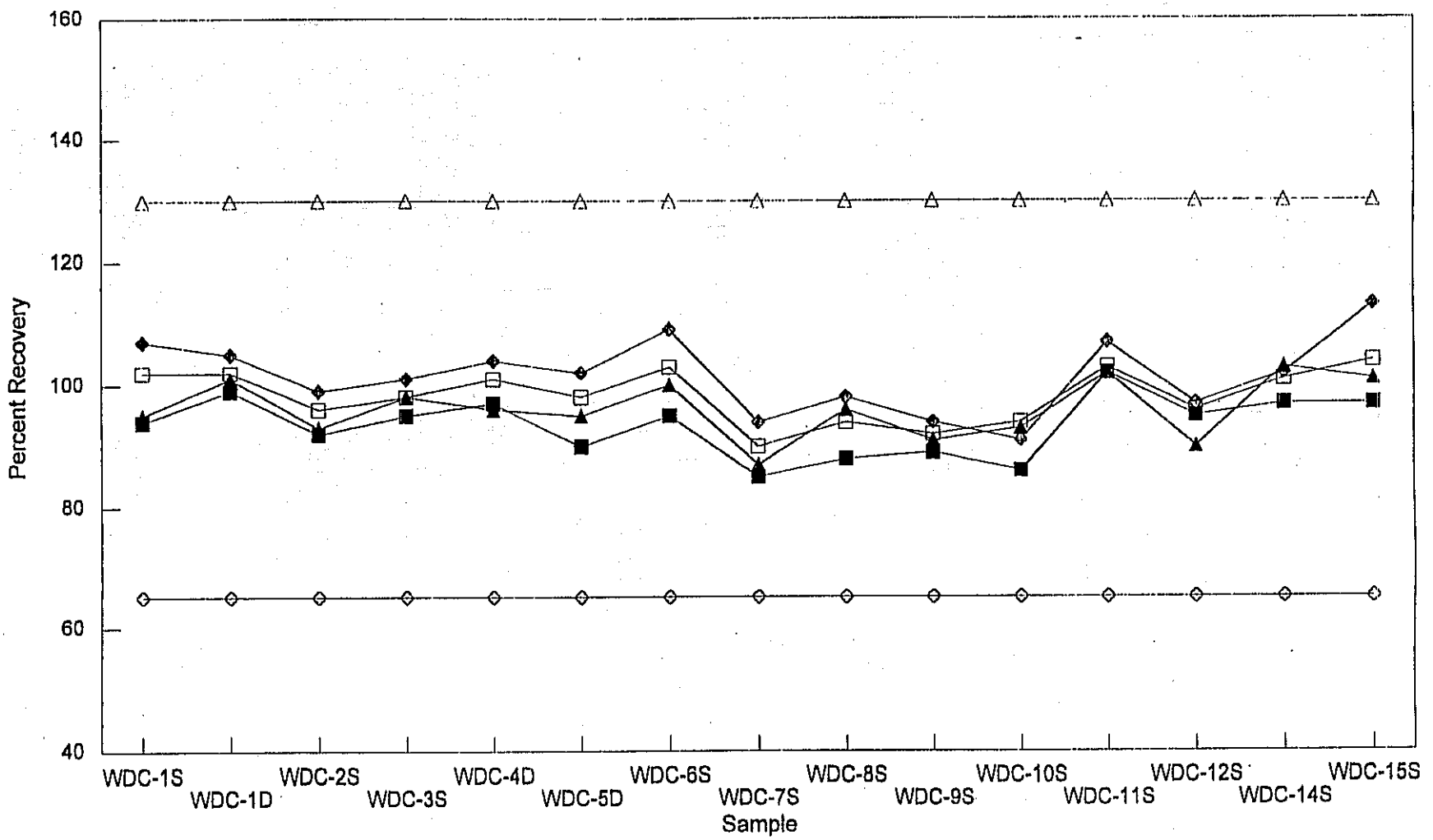
Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.08	11.99	12.17	317070	1.26E+00	1.30E+00	3	+/- 25%
Fluorobenzene--surrogate	12.71	12.61	12.81	215210	8.54E-01	8.77E-01	3	+/- 25%
Trichloroethene	13.85	13.75	13.95	196550	7.80E-01	8.04E-01	3	+/- 25%
Toluene	18.47	18.33	18.61	298770	1.19E+00	1.20E+00	1	+/- 25%
Chlorobenzene	24.19	24.01	24.37	324470	1.29E+00	1.31E+00	2	+/- 25%
Ethylbenzene	25.33	25.14	25.52	262175	1.04E+00	1.06E+00	2	+/- 25%
p,m-Xylene	26.31	26.11	26.51	625740	2.48E+00	2.51E+00	1	+/- 25%
o-Xylene	28.18	27.97	28.39	255440	1.01E+00	1.03E+00	1	+/- 25%
4-Bromofluorobenzene	30.02	29.79	30.25	503860	---		---	---
-Internal standard	---	---	---	---	---		---	---

EPA METHOD 8010/8020 SURROGATE RECOVERY CONTROL CHART

FASP Method 8010/8020 Surrogate Recovery Control Chart

Western Dry Cleaners



00026

FASP METHOD 8010/8020 SURROGATE RECOVERY SUMMARY

SITE: Western Dry Cleaners

				COLUMN: DB-624		COLUMN: DB-VRX		
				% RECOVERY		% RECOVERY		
	Sample	Date Sampled	Date Analyzed	1-Chloro-2-bromopropane	Fluorobenzene	1-Chloro-2-bromopropane	Fluorobenzene	QC LIMITS
1	WDC-1S	03/20/95	03/20/95	94	107	95	102	65-130%
2	WDC-1D	03/20/95	03/20/95	99	105	101	102	65-130%
3	WDC-2S	03/20/95	03/20/95	92	99	93	96	65-130%
4	WDC-3S	03/21/95	03/21/95	95	101	98	98	65-130%
5	WDC-4D	03/20/95	03/20/95	97	104	96	101	65-130%
6	WDC-5D	03/20/95	03/20/95	90	102	95	98	65-130%
7	WDC-6S	03/20/95	03/20/95	95	109	100	103	65-130%
8	WDC-7S	03/21/95	03/21/95	85	94	87	90	65-130%
9	WDC-8S	03/21/95	03/21/95	88	98	96	94	65-130%
10	WDC-9S	03/21/95	03/21/95	89	94	91	92	65-130%
11	WDC-10S	03/21/95	03/21/95	86	91	93	94	65-130%
12	WDC-11S	03/20/95	03/20/95	102	107	102	103	65-130%
13	WDC-12S	03/21/95	03/21/95	95	97	90	96	65-130%
14	WDC-14S	03/21/95	03/21/95	97	102	103	101	65-130%
15	WDC-15S	03/21/95	03/23/95	97	113	101	104	65-130%
	*OUT OF QC LIMITS:			0 of 15	0 of 15	0 of 15	0 of 15	

* NR: Analyte not recovered.

00027

EPA METHOD 8010/8020 BLANK SUMMARY

FASP METHOD 8010/8020 METHOD BLANK SUMMARY

SITE: Western Dry Cleaners

COLUMN: DB-624, Quantitation

DATE		CONTAMINANTS (ug/Kg)	FMDL (ug/Kg)	SURROGATE % RECOVERY		
				1-Chloro-2-bromopropane	Fluorobenzene	QC Limits
03/20/95	BLK0320A		4	98	96	65-130%
	BLK0320B		4	98	98	65-130%
03/21/95	BLK0321A		4	98	98	65-130%
	BLK0321B		4	86	93	65-130%
03/23/95	BLK0323A		4	90	98	65-130%
	BLK0323B		4	95	102	65-130%

COLUMN: DB-VRX, Confirmation

DATE		CONTAMINANTS (ug/Kg)	FMDL (ug/Kg)	SURROGATE % RECOVERY		
				1-Chloro-2-bromopropane	Fluorobenzene	QC Limits
03/20/95	BLK0320A		4	98	99	65-130%
	BLK0320B		4	96	94	65-130%
03/21/95	BLK0321A		4	99	98	65-130%
	BLK0321B		4	89	91	65-130%
03/23/95	BLK0323A		4	100	96	65-130%
	BLK0323B		4	100	97	65-130%

UPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	BLK0320A

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date:	03/20/95	Sample Matrix:	Soil
ample Analysis Date:	03/20/95	Units:	ug/Kg
eliminary Report Date:	03/21/95	Dilution Factor:	1
olumn:	DB-624	Sample Weight:	5 g

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
romomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		96

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
BLK0320B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	BLK0321A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil
Sample Analysis Date:	03/21/95	Units:	ug/Kg
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Weight:	5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
rans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
rans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
Dibromochloromethane	<4		4
hlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
BLK0321B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	86

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	93

PERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	BLK0323A

REGION 9 FASP VOLATILE ORGANICS RESULTS

mple Collection Date:	03/23/95	Sample Matrix:	Soil
mple Analysis Date:	03/23/95	Units:	ug/Kg
eliminary Report Date:	03/24/95	Dilution Factor:	1
lumn:	DB-624	Sample Weight:	5 g

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
omomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
loroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		90

IETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
,m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
BLK0323B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/23/95
Sample Analysis Date: 03/23/95
Preliminary Report Date: 03/24/95
Column: DB-624

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	102

EPA METHOD 8010/8020 LABORATORY CONTROL SAMPLE RECOVERY

FASP METHOD 8010/8020 LCS RECOVERY SUMMARY

SITE: Western Dry Cleaners

COLUMN: DB-624, Quantitation

DATE		Vinyl chloride	Carbon tet.	1,2-DCA	TCE	1,2-DCP	cis-1,3-DCP	1,1,2-TCA	PCE	Bromoform	1,4-DCB	Benzene	% Surr. Rec.	
													1-Chloro-2-bp	Fluorobenzene
03/20/95	LCS0320A	61	91	90	89	90	99	90	93	92	86	92	85	84
	LCS0320B	64	91	88	90	90	94	88	94	91	87	93	95	101
	LCS0320C	65	88	88	89	90	96	88	96	84	85	93	96	101
	LCS0320D	63	89	89	89	91	97	93	96	96	85	91	97	96
03/21/95	LCS0321A	62	89	86	88	88	96	90	91	90	81	90	94	98
	LCS0321B	62	87	87	87	85	93	92	90	92	81	90	95	96
	LCS0321C	64	87	85	87	89	93	84	88	82	79	87	93	90
03/23/95	LCS0323A	58	85	89	85	85	95	97	92	102	86	85	95	96
	LCS0323B	61	95	98	93	96	104	103	100	106	88	91	95	100
	LCS0323C	58	88	90	85	87	99	92	91	94	81	88	91	96
	QC LIMITS	50-150%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	65-130%	65-130%
	*OUT OF LIMITS:	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10

COLUMN: DB-VRX, Confirmation

DATE		Vinyl chloride	1,2-DCA	Carbon tet.	1,2-DCP	TCE	cis-1,3-DCP	1,1,2-TCA	PCE	Bromoform	1,4-DCB	Benzene	% Surr. Rec.	
													1-Chloro-2-bp	Fluorobenzene
03/20/95	LCS0320A	65	93	96	85	97	100	93	97	94	86	85	91	84
	LCS0320B	73	87	91	84	90	94	88	92	88	85	93	96	100
	LCS0320C	87	85	91	84	90	94	85	93	79	82	92	98	98
	LCS0320D	95	89	92	90	89	98	91	94	90	84	89	97	93
03/21/95	LCS0321A	49*	90	92	91	83	99	94	94	95	83	90	101	96
	LCS0321B	73	92	92	89	84	96	92	91	91	82	88	97	93
	LCS0321C	68	83	86	84	83	88	82	88	81	79	88	91	93
03/23/95	LCS0323A	41*	86	86	84	78	96	94	92	103	81	87	99	95
	LCS0323B	54	93	92	91	84	102	97	97	105	87	91	98	95
	LCS0323C	50	86	87	83	79	95	90	90	93	80	87	97	94
	QC LIMITS	50-150%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	65-130%	65-130%
	*OUT OF LIMITS:	2 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10

UPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320A

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date: 03/20/95
ample Analysis Date: 03/20/95
eliminary Report Date: 03/21/95
olumn: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
yl chloride	24		4
omomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
l-Dichloroethene	<4		4
ethylene chloride	<4		4
ns-1,2-Dichloroethene	<4		4
l-Dichloroethane	<4		4
-1,2-Dichloroethene	<4		4
loroform	<4		4
,1-Trichloroethane	<4		4
rbon tetrachloride	36		4
-Dichloroethane	36		4
chloroethene	35		4
-Dichloropropane	36		4
omodichloromethane	<4		4
-1,3-Dichloropropene	39		4
ns-1,3-Dichloropropene	<4		4
,2-Trichloroethane	36		4
trachloroethene	37		4
romochloromethane	<4		4
lorobenzene	<4		4
omoform	37		4
,2,2-Tetrachloroethane	<4		4
-Dichlorobenzene	<4		4
-Dichlorobenzene	34		4
-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	85

THOD 8020 COMPOUND	RESULTS	Q	FMDL
nzene	37		4
uene	<4		4
lorobenzene	<4		4
ylbenzene	<4		4
-Xylene	<4		4
ylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	84

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	26		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	36		4
1,2-Dichloroethane	35		4
Trichloroethene	36		4
1,2-Dichloropropane	36		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	38		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	35		4
Tetrachloroethene	37		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	36		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	35		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	37		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	101

PERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0320C

REGION 9 FASP VOLATILE ORGANICS RESULTS

mple Collection Date:	03/20/95	Sample Matrix:	Water
mple Analysis Date:	03/20/95	Units:	ug/L
eliminary Report Date:	03/21/95	Dilution Factor:	1
lumn:	DB-624	Sample Volume:	5 mL

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
yl chloride	26		4
omomethane/Chloroethane	<4		4
chlorofluoromethane	<4		4
-Dichloroethene	<4		4
ethylene chloride	<4		4
ns-1,2-Dichloroethene	<4		4
-Dichloroethane	<4		4
-1,2-Dichloroethene	<4		4
loroform	<4		4
,1-Trichloroethane	<4		4
arbon tetrachloride	35		4
2-Dichloroethane	35		4
ichloroethene	36		4
2-Dichloropropane	36		4
omodichloromethane	<4		4
s-1,3-Dichloropropene	38		4
ns-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	35		4
etrachloroethene	38		4
bromochloromethane	<4		4
hlorobenzene	<4		4
romoform	33		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	34		4
2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	96

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	37		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320D

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	36		4
Trichloroethene	36		4
1,2-Dichloropropane	36		4
Bromodichloromethane	36		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	39		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	37		4
Dibromochloromethane	38		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	38		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	34		4
	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	36		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	96

PERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0321A

REGION 9 FASP VOLATILE ORGANICS RESULTS

nple Collection Date:	03/21/95	Sample Matrix:	Water
nple Analysis Date:	03/21/95	Units:	ug/L
liminary Report Date:	03/22/95	Dilution Factor:	1
umn:	DB-624	Sample Volume:	5 mL

thod 8010 Compound	RESULTS	Q	FMDL
hlorodifluoromethane/Chloromethane	<4		4
yl chloride	25		4
omomethane/Chloroethane	<4		4
chlorofluoromethane	<4		4
-Dichloroethene	<4		4
thylene chloride	<4		4
ns-1,2-Dichloroethene	<4		4
-Dichloroethane	<4		4
-1,2-Dichloroethene	<4		4
loroform	<4		4
,1-Trichloroethane	<4		4
rbon tetrachloride	35		4
-Dichloroethane	35		4
chloroethene	35		4
-Dichloropropane	35		4
omodichloromethane	<4		4
-1,3-Dichloropropene	39		4
ns-1,3-Dichloropropene	<4		4
,2-Trichloroethane	36		4
trachloroethene	36		4
romochloromethane	<4		4
lorobenzene	<4		4
omoform	36		4
,2,2-Tetrachloroethane	<4		4
-Dichlorobenzene	<4		4
-Dichlorobenzene	33		4
-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
nzene	36		4
luene	<4		4
lorobenzene	<4		4
hylbenzene	<4		4
m-Xylene	<4		4
Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0321B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	35		4
1,2-Dichloroethane	35		4
Trichloroethene	35		4
1,2-Dichloropropane	34		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	37		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	37		4
Tetrachloroethene	36		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	37		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	32		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	36		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	96

JPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0321C

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date:	03/21/95	Sample Matrix:	Water
ample Analysis Date:	03/21/95	Units:	ug/L
eliminary Report Date:	03/22/95	Dilution Factor:	1
olumn:	DB-624	Sample Volume:	5 mL

ethod 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
nyl chloride	25		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	35		4
,2-Dichloroethane	34		4
richloroethene	35		4
,2-Dichloropropane	36		4
romodichloromethane	<4		4
is-1,3-Dichloropropene	37		4
ans-1,3-Dichloropropene	<4		4
,1,2-Trichloroethane	33		4
etrachloroethene	35		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	33		4
,1,2,2-Tetrachloroethane	<4		4
,3-Dichlorobenzene	<4		4
,4-Dichlorobenzene	32		4
,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		93

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	35		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		90

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0323A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/23/95
Sample Analysis Date: 03/23/95
Preliminary Report Date: 03/24/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	23		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	34		4
1,2-Dichloroethane	36		4
Trichloroethene	34		4
1,2-Dichloropropane	34		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	38		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	39		4
Tetrachloroethene	37		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	41		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	34		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	34		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		96

UPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0323B

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date:	03/23/95	Sample Matrix:	Water
ample Analysis Date:	03/23/95	Units:	ug/L
reliminary Report Date:	03/24/95	Dilution Factor:	1
olumn:	DB-624	Sample Volume:	5 mL

ethod 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
inyl chloride	24		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	38		4
2-Dichloroethane	39		4
richloroethene	37		4
2-Dichloropropane	38		4
romodichloromethane	<4		4
is-1,3-Dichloropropene	42		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	41		4
etrachloroethene	40		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	42		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	35		4
2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		95

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	36		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		100

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0323C

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/23/95
Sample Analysis Date: 03/23/95
Preliminary Report Date: 03/24/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	23		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	35		4
1,2-Dichloroethane	36		4
Trichloroethene	34		4
1,2-Dichloropropane	35		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	40		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	37		4
Tetrachloroethene	36		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	38		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	33		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	91

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	35		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	96

EPA METHOD 8010/8020 MATRIX SPIKE SAMPLE SUMMARY

FASP METHOD 8010/8020 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SUMMARY

Site: Western Dry Cleaners

QC Sample: WDC-9S

Date Analyzed: March 21, 1995

COLUMN: DB-624

COMPOUND	Spike Added (ug/Kg)	Sample Conc. (ug/Kg)	MS Conc. (ug/Kg)	MS % Recovery	MSD Conc. (ug/Kg)	MSD % Recovery	RECOVERY QC LIMITS	RPD	RPD QC LIMITS
Vinyl chloride	40	ND	28	70	28	70	65-130%	0	+/-50
Carbon tet.	40	ND	37	93	37	93	65-130%	0	+/-50
1,2-DCA	40	ND	36	90	38	95	65-130%	-5	+/-50
TCE	40	ND	37	93	35	88	65-130%	6	+/-50
1,2-DCP	40	ND	37	93	35	88	65-130%	6	+/-50
cis-1,3-DCP	40	ND	39	98	39	98	65-130%	0	+/-50
1,1,2-TCA	40	ND	38	95	37	93	65-130%	3	+/-50
PCE	40	ND	37	93	37	93	65-130%	0	+/-50
Bromoform	40	ND	37	93	37	93	65-130%	0	+/-50
1,4-DCB	40	ND	32	80	32	80	65-130%	0	+/-50
Benzene	40	ND	37	93	37	93	65-130%	0	+/-50

COLUMN: DB-VRX

COMPOUND	Spike Added (ug/Kg)	Sample Conc. (ug/Kg)	MS Conc. (ug/Kg)	MS % Recovery	MSD Conc. (ug/Kg)	MSD % Recovery	RECOVERY QC LIMITS	RPD	RPD QC LIMITS
Vinyl chloride	40	ND	26	65	28	70	65-130%	-7	+/-50
1,2-DCA	40	ND	36	90	36	90	65-130%	0	+/-50
Carbon tet.	40	ND	33	83	38	95	65-130%	-14	+/-50
1,2-DCP	40	ND	35	88	36	90	65-130%	-3	+/-50
TCE	40	ND	35	88	35	88	65-130%	0	+/-50
cis-1,3-DCP	40	ND	37	93	39	98	65-130%	-5	+/-50
1,1,2-TCA	40	ND	35	88	37	93	65-130%	-6	+/-50
PCE	40	ND	35	88	38	95	65-130%	-8	+/-50
Bromoform	40	ND	35	88	37	93	65-130%	-6	+/-50
1,4-DCB	40	ND	31	78	32	80	65-130%	-3	+/-50
Benzene	40	ND	34	85	36	90	65-130%	-6	+/-50

*Out of advisory QC limits ND: Analyte not detected

UPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-9S MS

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date:	03/21/95	Sample Matrix:	Soil
ample Analysis Date:	03/21/95	Units:	ug/Kg
reliminary Report Date:	03/22/95	Dilution Factor:	1
olumn:	DB-624	Sample Weight:	5 g

lethod 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
inyl chloride	28		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
lethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
,1-Dichloroethane	<4		4
is-1,2-Dichloroethene	<4		4
hloroform	<4		4
,1,1-Trichloroethane	<4		4
arbon tetrachloride	37		4
,2-Dichloroethane	36		4
richloroethene	37		4
,2-Dichloropropane	37		4
romodichloromethane	<4		4
is-1,3-Dichloropropene	39		4
ans-1,3-Dichloropropene	<4		4
,1,2-Trichloroethane	38		4
etrachloroethene	37		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	37		4
,1,2,2-Tetrachloroethane	<4		4
,3-Dichlorobenzene	<4		4
,4-Dichlorobenzene	32		4
,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	37		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
,m-Xylene	<4		4
-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	95

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-9S MSD

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil
Sample Analysis Date:	03/21/95	Units:	ug/Kg
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Weight:	5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	26		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	36		4
1,2-Dichloroethane	33		4
Trichloroethene	35		4
1,2-Dichloropropane	35		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	37		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	35		4
Tetrachloroethene	35		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	35		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	31		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	34		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	99

EPA METHOD 8010/8020 SAMPLE RESULTS

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-1S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		107

UPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-1D

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date:	03/20/95	Sample Matrix:	Soil
ample Analysis Date:	03/20/95	Units:	ug/Kg
reliminary Report Date:	03/21/95	Dilution Factor:	1
rimary Column:	DB-624	Sample Weight:	5 g
onfirmation Column:	DB-VRX		

lethod 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
inyl chloride	<4		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
lethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
,1-Dichloroethane	<4		4
is-1,2-Dichloroethene	<4		4
hloroform	<4		4
,1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
,2-Dichloroethane	<4		4
richloroethene	<4		4
,2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
,1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	<4		4
,1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
,4-Dichlorobenzene	<4		4
,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		99

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		105

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-2S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil
Sample Analysis Date:	03/20/95	Units:	ug/Kg
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Weight:	5 g
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	92

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	99

UPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-3S

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date: 03/21/95
ample Analysis Date: 03/21/95
reliminary Report Date: 03/22/95
rimary Column: DB-624
onfirmation Column: DB-VRX

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

ethod 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
romomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ins-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
bromochloromethane	<4		4
ilorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
nzene	<4		4
luene	<4		4
lorobenzene	<4		4
ylbenzene	<4		4
n-Xylene	<4		4
Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-4D

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95
Sample Analysis Date:	03/20/95
Preliminary Report Date:	03/21/95
Primary Column:	DB-624
Confirmation Column:	DB-VRX

Sample Matrix:	Soil
Units:	ug/Kg
Dilution Factor:	1
Sample Weight:	5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	104

PERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-5D

REGION 9 FASP VOLATILE ORGANICS RESULTS

mple Collection Date:	03/20/95	Sample Matrix:	Soil
mple Analysis Date:	03/20/95	Units:	ug/Kg
eliminary Report Date:	03/21/95	Dilution Factor:	1
mary Column:	DB-624	Sample Weight:	5 g
nfirmation Column:	DB-VRX		

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
romomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
bromochloromethane	<4		4
lorobenzene	<4		4
moform	<4		4
2,2-Tetrachloroethane	<4		4
Dichlorobenzene	<4		4
-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		90

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
hylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-6S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil
Sample Analysis Date:	03/20/95	Units:	ug/Kg
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Weight:	5 g
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		109

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-7S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil
Sample Analysis Date:	03/21/95	Units:	ug/Kg
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Weight:	5 g
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
inyl chloride	<4		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
lethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
,1-Dichloroethane	<4		4
is-1,2-Dichloroethene	<4		4
hloroform	<4		4
,1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
,2-Dichloroethane	<4		4
richloroethene	<4		4
,2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
ibromochloromethane	<4		4
hlorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	85

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
m-Xylene	<4		4
-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	94

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-8S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	88

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	98

UPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-9S

REGION 9 FASP VOLATILE ORGANICS RESULTS

mple Collection Date:	03/21/95	Sample Matrix:	Soil
mple Analysis Date:	03/21/95	Units:	ug/Kg
eliminary Report Date:	03/22/95	Dilution Factor:	1
imary Column:	DB-624	Sample Weight:	5 g
onfirmation Column:	DB-VRX		

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
omomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ns-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
loroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
omodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ns-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
bromochloromethane	<4		4
lorobenzene	<4		4
omoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		89

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
luene	<4		4
lorobenzene	<4		4
hylbenzene	<4		4
m-Xylene	<4		4
Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		94

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-10S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil
Sample Analysis Date:	03/21/95	Units:	ug/Kg
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Weight:	5 g
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		86

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		91

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-11S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Water
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Volume:	5 mL
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
rans-1,2-Dichloroethene	<4		4
l,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
l,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
l,2-Dichloroethane	<4		4
Trichloroethene	<4		4
l,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
rans-1,3-Dichloropropene	<4		4
l,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
,1,2,2-Tetrachloroethane	<4		4
,3-Dichlorobenzene	<4		4
,4-Dichlorobenzene	<4		4
,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		102

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
,m-Xylene	<4		4
-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		107

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-12S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
Methylene chloride	<4		4
rans-1,2-Dichloroethene	<4		4
,1-Dichloroethane	<4		4
is-1,2-Dichloroethene	<4		4
Chloroform	<4		4
,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
,2-Dichloroethane	<4		4
Trichloroethene	<4		4
,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
is-1,3-Dichloropropene	<4		4
rans-1,3-Dichloropropene	<4		4
,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
,1,2,2-Tetrachloroethane	<4		4
,3-Dichlorobenzene	<4		4
,4-Dichlorobenzene	<4		4
,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
oluene	<4		4
hlorobenzene	<4		4
thylbenzene	<4		4
,m-Xylene	<4		4
-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	97

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-14S

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	<4		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	<4		4
Trichloroethene	<4		4
1,2-Dichloropropane	<4		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	<4		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<4		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	102

UPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-15S

REGION 9 FASP VOLATILE ORGANICS RESULTS

ample Collection Date: 03/21/95
ample Analysis Date: 03/23/95
eliminary Report Date: 03/24/95
imary Column: DB-624
onfirmation Column: DB-VRX

Sample Matrix: Soil
Units: ug/Kg
Dilution Factor: 1
Sample Weight: 5 g

ethod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<4		4
nyl chloride	<4		4
omomethane/Chloroethane	<4		4
ichlorofluoromethane	<4		4
1-Dichloroethene	<4		4
ethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	<4		4
2-Dichloroethane	<4		4
ichloroethene	<4		4
2-Dichloropropane	<4		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	<4		4
etrachloroethene	<4		4
bromochloromethane	<4		4
hlorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<4		4
luene	<4		4
hlorobenzene	<4		4
nylbenzene	<4		4
m-Xylene	<4		4
Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	113

TRAFFIC REPORTS

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Marnie Greenbie Scott Goodwin

PRINT NAME: Marnie Greenbie Scott Goodwin

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-11S	3-20-95	1038		rinsate	2
	WDC-16SV	3-20-95	1007		soil vapor	1
	WDC-1S	3-20-95	1136		soil	1
	WDC-1D	3-20-95	1150		soil	1
	WDC-2S	3-20-95	1230		soil	1
	WDC-2SV	3-20-95	1220		soil vapor 2.5 Hmm	1
	WDC-4D	3-20-95	1315		soil	1
	WDC-4DV	3-20-95	1257		soil vapor 1.8 Hmm	1
✓ WDC-14A	WDC-14DV	3-20-95	1256		soil vapor 1.8 Hmm	1
	WDC-15V	3-20-95	1052		soil vapor 1.0 Hmm	1
					TOTAL NUMBER OF CONTAINERS	11

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Marnie Greenbie	Marnie Greenbie			3/20/95 1427 2:27	
		RJ White	R.J. White	3/20/95 1430	

Final Disposal; Date & Time disposed: _____ Signature _____

00069

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Marnie Greenbie Scott Goodwin

PRINT NAME: Marnie Greenbie Scott Goodwin

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-SSV	3-20-95	1343		soil vapor HNu 4.5	1
	WDC-SD	3-20-95	1359		soil	
	WDC-65V	3-20-95	1418		soil vapor HNu 1.5	
	WDC-65	3-20-95	1425		soil	
					TOTAL NUMBER OF CONTAINERS	

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Scott Goodwin	Scott Goodwin			3-20-95/1521	
		R.J. White	R.J. White	3/20/95 1522	

Final Disposal; Date & Time disposed: _____ Signature _____

000070

ADHS Laboratory 20 (10/90)

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Marnie Greenbie

PRINT NAME: Marnie Greenbie

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-12S	3-21-95	0915		rinsate	2
	WDC-7S	3-21-95	10:02		soil	1
	WDC-8S	3-21-95	1032		soil	1
	WDC-9S	3-21-95	1120		soil (QA/QC)	1
	WDC-10S	3-21-95	1255		soil	1
	WDC-15S	3-21-95	1260		soil	1
	WDC-03S	3-21-95	1348		soil	1
	WDC-14S	3-21-95	1353		soil	1
					TOTAL NUMBER OF CONTAINERS	9

00071

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Scott Goodwin	Scott Goodwin			3-21-95/1457	
		RJ White	R.J. White	3/21/95 1500	

Final Disposal; Date & Time disposed: _____ Signature _____

SAMPLE LOG-IN

SITE: Phoenix, Az

ANALYST: RJW

DATE	SAMPLE ID	MATRIX	ANALYSIS	INTL.	COMMENT
3/20/95	ASC-104	water	Co60/Cs60	RJW	
	ASC-102				
	ASC-101				QA/QC
	ASC-105				
	ASC-105				
	WDC-115	RINSATE		MWD	
	WDC-16SV	SOIL Vapor			
	WDC-15	SOIL			
	WDC-10	SOIL			
	WDC-25	SOIL			
	WDC-23V	SOIL Vapor			
	WDC-40	SOIL			
	WDC-45V	SOIL Vapor			
	WDC-14SV	SOIL Vapor			
	WDC-1SV	SOIL Vapor			
	WDC-5SV	SOIL GAS			
	WDC-5D	SOIL			
	WDC-6SV	SOIL GAS			
	WDC-6S	SOIL			
3/21/95	WDC-17SV	SOIL GAS			
	WDC-7SV				
	-8SV				
	-9SV				
	-10SV				
	-15SV				
	-13SV				
	-3SV				
	-12S	rinsate			
	-7S	soil			
	-8S				
	-9S				QA/QC
	-10S				
	-15S				
	-03S				
	-14S				

SAMPLE RUN LOG

SITE: Phoenix, AZ
METHOD: Mod. 8010/8020

ANALYST: RSW

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
3/19/95	RSW	1	MEA001	ICAL1	20ml A-618 / 20ml A-626 / 5ml H_2O	
				ICAL2	A-619 /	
				ICAL3	A-620 /	
				ICAL4	A-621 /	
				ICAL5	A-622 /	

00075

SITE: Phoenix Ab
METHOD: 8010/8020

ANALYST: RSW

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
3/20/95	RSW	1	M20K001	CCAL	20ml A-621 / 20ml A-626 / 5ml H_2O	
		2	002	blank	20ml A-616 / 20ml A-626 / 5ml H_2O	
		3	003	LCS	20ml A-625 / 20ml A-626 / 20ml A-616 / 5ml H_2O	
		4	004	MBS:T	10ml Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		5	005	ASC-101	~5g Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		6	006	ASC-102		
		7	007	ASC-10[illegible]		
		8	008	ASC-103		
		9	009	ASC-105		
		10	010	ASC-101MS	~5g / 20 ml A-625 / 20ml A-616 / 20ml A626 / 5ml H_2O	
		11	011	ASC-101MSD	" " " "	
		12	012	WOC-15V	10ml samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		13	013	WOC-4SV		
		14	014	WOC-14SV		
		15	015	LCS	20ml A-625 / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		16	016	WOC-25V	10 ml samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		17	017	WOC-16SV	" " " "	
		18	018	WOC-11S	~~5g~~ / 20ml A-616 / 20ml A-626 / ~~5ml H_2O~~	
		19	019	WOC-15	~5g / " " / 5ml H_2O	
		20	020	WOC-10		
		21	021	WOC-25		
		22	022	WOC-40		
		23	023	WOC-5SV	10ml Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		24	024	WOC-6SV	" " " " "	
		25	025	WOC-5D	~5g / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		26	026	WOC-6S	" " " "	
		27	027	RCB-W-8	100ml inj / 20ml A-616 / [illegible]	

00076

SITE: Phoenix, AZ
METHOD: 8010/8020

ANALYST: YMP

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
~~3/20/95~~	~~BSW~~	~~29~~	~~029~~	~~LCS~~		
		~~30~~	~~030~~	~~Blank~~		
3/21/95	YMP	1	MZ1001	CCAL	20ul A-621/20ul A-626/5ml H_2O	
		2	002	BLANK	20ul A-616/20ul A-626/5ml H_2O	
		3	003	LCS	20ul A-625/20ul A-626/5ml H_2O/20ul A-616	
		4	004	NIST	10ul samp/20ul A-616/20ul A-626/5ml H_2O	
		5	5	WDL-17SV		
		6	6	WDL-7SV		
		7	7	WDL-8SV		
		8	8	WDL-9SV		
		9	9	WDL-10SV		
		10	10	WDL-15SV		
		11	11	WDL-13SV		
		12	12	WDL-3SV		
		13	13	WDL-12S	~~5ml~~ 5ml/20ul A-616/20ul A-626/~~5ml H_2O~~	
		14	14	WDL-7S	5g/" " " /5ml H_2O	
		15	15	LCS	20ul A-625/20ul A-616/20ul A-626/5ml H_2O	
		16	16	WDL-8S	5 g/20ul A-616/20ul A-626/5ml H_2O	
		17	17	WDL-9S		
		18	18	WDL-10S		
		19	19	WDL-15S		
		20	20	WDL-03S		
		21	21	WDL-14S		
		22	22	WDL-9S MS	5g/20ul A-625/20ul A-616/20ul A-626/5ml H_2O	
		23	23	WDL-9S MSD	5g/" " " "	

00077

SITE: Phoenix, AZ
METHOD: Mod. 8010/8020

ANALYST: [illegible]

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
~~03/23/95~~	~~[illegible]~~	1	~~M23 M24~~ 001	CCAL	20uL A-621 / 20uL A-626 / 5 mL H_2O	
03/23/95		2	002	BLANK	20uL A-626 / 20uL A-616 / 5 mL H_2O	
		3	003	LCS	20uL A-625 / 20uL A-626 / 20uL A-616 / 5 mL H_2O	
		4	004	NIST	20uL A-626 / 20uL A-616 / 10 mL NIST / 5 mL H_2O	
		5	5	LOG-53SV	20uL A-626 / 20uL 616 / 10 mL samp / 5 mL H_2O	
		6	6	LOG-06SV		
		7	7	LOG-08SV		
		8	8	LOG-05SV		
		9	9	LOG-23DS	5g	
		10	10	LOG-05DS		
		11	11	SHT-3		
		12	12	LOG-08DS MS		
		13	13	LOG-08DS MSD		
		14	14	LOG-08DS ~~MSD~~ 23W		
		15	15	LCS	20uL A-625	
		16	16	SHT-~~3~~ 4 MS	5g 20uL A-625	
		17	17	SHT-~~3~~ 4 MSD		
		18	18	WBC-15S	5g	
		19	19	EXD-6SV	10 mL samp / 20uL A-616 / 20uL A-626 / 5 mL H_2O	
		20	20	EXD-11SV		
		21	21	EXD-13SV		
		22	22	EXD-3SV		
		23	23	EXD-3DS	~5g / 20uL A-616 / 20uL A-626 / 5 mL H_2O	
		24	24	EXD-6DS	" " " "	
		25	25	LCS	20uL A-625 / 20uL A-626 / 20uL A-616 / 5 mL H_2O	
		26	26	BLANK	20uL A-616 / 20uL A-626 / 5 mL H_2O	

00078

SAMPLE WEIGHT LOG

SITE: Phoenix AZ ANALYST: RJW

DATE	SAMPLE ID	Sample wt.(g)	Sol. vol.(ml)	INTL.	COMMENT
3/20/95	WDC-1S	5.0	—	RJW	
	WDC-1D	5.0	—		
	WDC-2S	5.0	—		
	WDC-4D	5.0	—		
	WDC-5D	5.0		qwd	
	WDC-6S	5.0			
3/21/95	WDC-7S	5.1g			
	WDC-8S	5.2g			
	WDC-9S	5.3g			
	WDC-10S	5.4g			
	WDC-15S	5.3g			
	WDC-03S	5.1g			
	WDC-14S	5.1g			
	WDC-9MS	5.1g			
	WDC-9MSD	5.3g			
03/22/95	COG ~~WDC~~-03DS	5.2g			
	COG ~~WDC~~-04DS	5.1g			
	COG-07~~DS~~ AS	5.3g			
	COT-07DS	5.0g			
	SHT-3	5.3g			
	SHT-4	5.1g			
	SHT-9	5.1g			
	SHT-11	5.3g			
	COG-02AS	5.3g			
	COG-01DS	5.2g			
	COG-06DS	5.2g			
	COG-05DS	5.0g			
	SHT-~~B~~ 3	5.1g			
	COG-08DS	5.1g			
	COG-08DSMS	5.0g			
	COG-08DSMSD	5.3g			
	SHT-4MS ~~COG~~	5.1g			
	SHT-4MSD	5.2g			
	WDC-15S	5.2g			

STANDARD LOG

NO. A-614 DATE 2/21/95 / 2/26/95 ANALYST BK

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	LCS (Working)	A-613	20 mg/ml	1 ml	2 ml	10 mg/ml
2.	~~working~~	~~A613~~	~~20 mg/ml~~	~~1 ml~~	~~10 ml~~	~~10 mg/ml~~ BK
3.						
4.						
5.						
6.						
7.						
8.						
9.						

NO. A-615 DATE 3/12/95 ANALYST RPW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	Surrogate	Stock	2000	1 mL	10	200
2.	1-Chloro-2-BP					
3.	Fluorobenz					
4.						
5.						
6.						
7.						
8.						
9.						

M-502-S
1-Chloro-2-bromopro
2.0 mg/mL in MeOH
Lot 104-152
AccuStanda

NO. A-616 DATE 3/12/95 ANALYST RPW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	Surrogate	A-615	200	100 ~~100~~	2 ~~2~~	10 ~~10~~
2.	(working)			~~375~~	~~5~~	~~15~~ RPW
3.						
4.						
5.	3/20/95					
6.				250	5	10
7.	3/24/95					
8.				250	5	10
9.						

NO. A-617 DATE 3/12/95 ANALYST RTW

COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1. M601/602	Stock	200	1mL	10	20
2. M502/601B	↓	↓	↓	↓	↓
3. M502-28	↓	↓	↓	↓	↓
4. M505-60	↓	↓	↓	↓	↓
5. A-615 (surrogate)	A-615	↓	↓	↓	↓
6.					

M-502-28
cis-1,2-Dichloroethe
0.2 mg/mL in MeOH
Lot 025-145

M-601/602
Purgeable Halocarbons
0.2 mg/mL in MeOH
Lot 124-066

M-502-60
o,m,p-Xylenes Mix
0.2 mg/mL in MeOH
Lot 023-105

M-502B/M-601B
Volatile Organic Cmp
0.2 mg/mL in MeOH
Lot 025-252

AccuStandard AccuStandard AccuStandard AccuStandard

NO. A-618 → A-622 DATE 3/12/95 ANALYST RTW

COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1. A-618	A-617	20 ~~0~~ RTW	100	2	1
2. A-619	↓	↓	200	↓	2
3. A-620	↓	↓	500	↓	5
4. A-621	↓	↓	1000	↓	10
5. A-622	↓	↓	2000	↓	20
6.					
7.					
8.					
9.					

NO. A-623 DATE 3/12/95 ANALYST RTW

COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1. 4-BFB (I.S)	Stock	~~150~~	~~1mL~~ RTW	10	~~15~~
2. Stock		2000	~~500~~ RTW		
3.					
4. Also working			1mL	10	20
5. ~~in 2mL std~~					
6.					
7.					
8.					
9.					

CLP-004-80X
p-Bromofluorobenzene
2.0 mg/mL in MeOH
Lot 124-463

AccuStandard

NO. A-624 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	LCS (Stock)	Stock	200	1mL	10	20
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

CLP-LCS-V
Laboratory Control Sample
0.2 mg/mL in MeOH
Lot 124-192
AccuStandard

NO. A-625 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	LCS	A-624	20	1mL	2	10
2.	(working)					
3.						
4.						
5.	3/24/95			1mL	2	10
6.						
7.						
8.						
9.						

NO. A-626 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	4-BFB (F.S)	A-623	200	~~2.5mL~~	RSW	
2.						
3.	working			~~200~~	~~2~~	
4.				500	5	20
5.						
6.	3/24/95					
7.				500	5	20
8.						
9.						

ANALYTICAL RESULTS
TABLE 1A

Case No.:
Site: Western Dry Cleaners - Soils
Lab.: Region 9, Richmond
Reviewer: Dawn Conley, US EPA/QAMS
Date: May 22, 1995

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in ug/Kg

Station Location															
Sample I.D.	WDC-1D			WDC-1S			WDC-2S			WDC-3S D2			WDC-9S		
Date of Collection	3/20/95			3/20/95			3/20/95			3/21/95			3/21/95		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
METHOD 8010:															
Dichlorodifluoromethane/Chloromethane	4 U			4 U			4 U			4 U			4 U		
Vinyl chloride	4 U			4 U			4 U			4 U			4 U		
Bromomethane/Chloroethane	4 U			4 U			4 U			4 U			4 U		
Trichlorofluoromethane	4 U			4 U			4 U			4 U			4 U		
1,1-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
Methylene chloride	4 U			4 U			4 U			4 U			4 U		
trans-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
1,1-Dichloroethane	4 U			4 U			4 U			4 U			4 U		
cis-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
Chloroform	4 U			4 U			4 U			4 U			4 U		
1,1,1-Trichloroethane	4 U			4 U			4 U			4 U			4 U		
Carbon tetrachloride	4 U			4 U			4 U			4 U			4 U		
1,2-Dichloroethane	4 U			4 U			4 U			4 U			4 U		
Trichloroethene	4 U			4 U			4 U			4 U			4 U		
1,2-Dichloropropane	4 U			4 U			4 U			4 U			4 U		
Bromodichloromethane	4 U			4 U			4 U			4 U			4 U		
cis-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4 U		
trans-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4 U		
1,1,2-Trichloroethane	4 U			4 U			4 U			4 U			4 U		
Tetrachloroethene	4 U			4 U			4 U			4 U			4 U		
Dibromochloromethane	4 U			4 U			4 U			4 U			4 U		
Chlorobenzene	4 U			4 U			4 U			4 U			4 U		
Bromoform	4 U			4 U			4 U			4 U			4 U		
1,1,2,2-Tetrachloroethane	4 U			4 U			4 U			4 U			4 U		
1,3-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
1,4-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
1,2-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
METHOD 8020:															
Benzene	4 U			4 U			4 U			4 U			4 U		
Toluene	4 U			4 U			4 U			4 U			4 U		
Chlorobenzene	4 U			4 U			4 U			4 U			4 U		
Ethylbenzene	4 U			4 U			4 U			4 U			4 U		
Xylene (meta- & para-)	4 U			4 U			4 U			4 U			4 U		
Xylene (ortho)	4 U			4 U			4 U			4 U			4 U		

Val-Validity Refer to Data Qualifiers in Table 1B.
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.:
Site: Western Dry Cleaners - Soils
Lab.: Region 9, Richmond
Reviewer: Dawn Conley, US EPA/QAMS
Date: May 22, 1995

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in ug/Kg

Station Location	WDC-10S D1			WDC-14S D2			WDC-15S D1			Method Blank			Method Blank		
Sample I.D.										BLK0320A			BLK0320B		
Date of Collection	3/21/95			3/21/95			3/21/95								
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
METHOD 8010:															
Dichlorodifluoromethane/Chloromethane	4 U			4 U			4 U			4 U			4 U		
Vinyl chloride	4 U			4 U			4 U			4 U			4 U		
Bromomethane/Chloroethane	4 U			4 U			4 U			4 U			4 U		
Trichlorofluoromethane	4 U			4 U			4 U			4 U			4 U		
1,1-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
Methylene chloride	4 U			4 U			4 U			4 U			4 U		
trans-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
1,1-Dichloroethane	4 U			4 U			4 U			4 U			4 U		
cis-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4 U		
Chloroform	4 U			4 U			4 U			4 U			4 U		
1,1,1-Trichloroethane	4 U			4 U			4 U			4 U			4 U		
Carbon tetrachloride	4 U			4 U			4 U			4 U			4 U		
1,2-Dichloroethane	4 U			4 U			4 U			4 U			4 U		
Trichloroethene	4 U			4 U			4 U			4 U			4 U		
1,2-Dichloropropane	4 U			4 U			4 U			4 U			4 U		
Bromodichloromethane	4 U			4 U			4 U			4 U			4 U		
cis-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4 U		
trans-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4 U		
1,1,2-Trichloroethane	4 U			4 U			4 U			4 U			4 U		
Tetrachloroethene	4 U			4 U			4 U			4 U			4 U		
Dibromochloromethane	4 U			4 U			4 U			4 U			4 U		
Chlorobenzene	4 U			4 U			4 U			4 U			4 U		
Bromoform	4 U			4 U			4 U			4 U			4 U		
1,1,2,2-Tetrachloroethane	4 U			4 U			4 U			4 U			4 U		
1,3-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
1,4-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
1,2-Dichlorobenzene	4 U			4 U			4 U			4 U			4 U		
METHOD 8020:															
Benzene	4 U			4 U			4 U			4 U			4 U		
Toluene	4 U			4 U			4 U			4 U			4 U		
Chlorobenzene	4 U			4 U			4 U			4 U			4 U		
Ethylbenzene	4 U			4 U			4 U			4 U			4 U		
Xylene (meta- & para-)	4 U			4 U			4 U			4 U			4 U		
Xylene (ortho)	4 U			4 U			4 U			4 U			4 U		

Val-Validity Refer to Data Qualifiers in Table 1B.
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.:
Site: Western Dry Cleaners - Soils
Lab.: Region 9, Richmond
Reviewer: Dawn Conley, US EPA/QAMS
Date: May 22, 1995

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in ug/Kg

Sample I.D.	Method Blank BLK0321A			Method Blank BLK0321B			Method Blank BLK0323A			Method Blank BLK0323B			CRQL		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
METHOD 8010:															
Dichlorodifluoromethane/Chloromethane	4 U			4 U			4 U			4 U			4		
Vinyl chloride	4 U			4 U			4 U			4 U			4		
Bromomethane/Chloroethane	4 U			4 U			4 U			4 U			4		
Trichlorofluoromethane	4 U			4 U			4 U			4 U			4		
1,1-Dichloroethene	4 U			4 U			4 U			4 U			4		
Methylene chloride	4 U			4 U			4 U			4 U			4		
trans-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4		
1,1-Dichloroethane	4 U			4 U			4 U			4 U			4		
cis-1,2-Dichloroethene	4 U			4 U			4 U			4 U			4		
Chloroform	4 U			4 U			4 U			4 U			4		
1,1,1-Trichloroethane	4 U			4 U			4 U			4 U			4		
Carbon tetrachloride	4 U			4 U			4 U			4 U			4		
1,2-Dichloroethane	4 U			4 U			4 U			4 U			4		
Trichloroethene	4 U			4 U			4 U			4 U			4		
1,2-Dichloropropane	4 U			4 U			4 U			4 U			4		
Bromodichloromethane	4 U			4 U			4 U			4 U			4		
cis-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4		
trans-1,3-Dichloropropene	4 U			4 U			4 U			4 U			4		
1,1,2-Trichloroethane	4 U			4 U			4 U			4 U			4		
Tetrachloroethene	4 U			4 U			4 U			4 U			4		
Dibromochloromethane	4 U			4 U			4 U			4 U			4		
Chlorobenzene	4 U			4 U			4 U			4 U			4		
Bromoform	4 U			4 U			4 U			4 U			4		
1,1,2,2-Tetrachloroethane	4 U			4 U			4 U			4 U			4		
1,3-Dichlorobenzene	4 U			4 U			4 U			4 U			4		
1,4-Dichlorobenzene	4 U			4 U			4 U			4 U			4		
1,2-Dichlorobenzene	4 U			4 U			4 U			4 U			4		
METHOD 8020:															
Benzene	4 U			4 U			4 U			4 U			4		
Toluene	4 U			4 U			4 U			4 U			4		
Chlorobenzene	4 U			4 U			4 U			4 U			4		
Ethylbenzene	4 U			4 U			4 U			4 U			4		
Xylene (meta- & para-)	4 U			4 U			4 U			4 U			4		
Xylene (ortho)	4 U			4 U			4 U			4 U			4		

Val-Validity Refer to Data Qualifiers in Table 1B.
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.:
Site: Western Dry Cleaners - Soils
Lab.: Region 9, Richmond
Reviewer: Dawn Conley, US EPA/QAMS
Date: May 22, 1995

Analysis Type: Low Level Soil
Samples for Volatiles

Concentration in ug/Kg

Station Location															
Sample I.D.	WDC-11S EB			WDC-12S EB											
Date of Collection	3/20/95			3/21/95											
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
METHOD 8010:															
Dichlorodifluoromethane/Chloromethane	4 U			4 U											
Vinyl chloride	4 U			4 U											
Bromomethane/Chloroethane	4 U			4 U											
Trichlorofluoromethane	4 U			4 U											
1,1-Dichloroethene	4 U			4 U											
Methylene chloride	4 U			4 U											
trans-1,2-Dichloroethene	4 U			4 U											
1,1-Dichloroethane	4 U			4 U											
cis-1,2-Dichloroethene	4 U			4 U											
Chloroform	4 U			4 U											
1,1,1-Trichloroethane	4 U			4 U											
Carbon tetrachloride	4 U			4 U											
1,2-Dichloroethane	4 U			4 U											
Trichloroethene	4 U			4 U											
1,2-Dichloropropane	4 U			4 U											
Bromodichloromethane	4 U			4 U											
cis-1,3-Dichloropropene	4 U			4 U											
trans-1,3-Dichloropropene	4 U			4 U											
1,1,2-Trichloroethane	4 U			4 U											
Tetrachloroethene	4 U			4 U											
Dibromochloromethane	4 U			4 U											
Chlorobenzene	4 U			4 U											
Bromoform	4 U			4 U											
1,1,2,2-Tetrachloroethane	4 U			4 U											
1,3-Dichlorobenzene	4 U			4 U											
1,4-Dichlorobenzene	4 U			4 U											
1,2-Dichlorobenzene	4 U			4 U											
METHOD 8020:															
Benzene	4 U			4 U											
Toluene	4 U			4 U											
Chlorobenzene	4 U			4 U											
Ethylbenzene	4 U			4 U											
Xylene (meta- & para-)	4 U			4 U											
Xylene (ortho)	4 U			4 U											

Val-Validity Refer to Data Qualifiers in Table 1B.
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

TABLE 1B
DATA QUALIFIERS

The definitions of the following qualifiers are prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

NO QUALIFIERS indicate that the data are acceptable both qualitatively and quantitatively.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

DATE: May 22, 1995

MEMORANDUM

SUBJECT: Review of Analytical Data

FROM: Dawn Conley, Environmental Scientist/Chemist
Quality Assurance Management Section (QAMS), P-3-2

THROUGH: Vance S. Fong P.E., Chief
Quality Assurance Management Section (QAMS), P-3-2

TO: Jerelean Johnson, Remedial Project Manager
Planning and Assessment Section, H-8-1

Attached are comments resulting from QAMS Region IX review of the following analytical data:

SITE:	Western Dry Cleaners
EPA SSI NO.:	ZZ
CERCLIS ID NO.:	ZZAZ077095VSF1
CASE/SAS NO.:	FSP-WDC-1S
SDG NO.:	N/A
LABORATORY:	Region IX Field Analytical Services Program (FASP)
ANALYSIS:	Volatiles by SW-846 Methods 8010/8020 (Modified)
SAMPLE NO.:	8 Soil Samples and 2 Rinsate Samples (see Case Summary)
COLLECTION DATE:	March 20 through 21, 1995
REVIEWER:	Dawn Conley QAMS,P-3-2/USEPA

If there are any questions, please contact Dawn C. Conley (QAMS/USEPA) at (415)744-1494.

Attachment

Printed on Recycled Paper

3) "Analysis of Halogenated and Aromatic Volatile Organic Compounds in Soil and Water by Purge and Trap Gas Chromatography"; ICF Kaiser - November 1994.

II. Validation Summary

	VOA Acceptable	VOA Comment
HOLDING TIMES	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[NO]	[A]
FIELD QC	[N/A]	[ ]
LABORATORY BLANKS	[YES]	[ ]
SURROGATES	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[ ]
SYSTEM PERFORMANCE	[YES]	[ ]

III. Introduction

Eight (8) low level soil samples and two (2) rinsate samples from the Western Dry Cleaners were submitted to the EPA Region IX Field Analytical Services Program (FASP) for volatile organic analyses by SW-846 Methods 8010/8020 (Modified) during the period from March 20 through 21, 1995.

IV. Validity and Comments

A) Large percent Differences (%Ds) in the Continuing Calibrations for bromomethane/chloroethane, were noted for the primary column. The secondary column percent differences (%D) were within acceptable range for those compounds. The 3/20/95 standard demonstrated a large percent difference on the secondary column for vinyl chloride.

The Continuing Calibration checks the instrument performance daily and produces the Relative Response Factors for each target analyte that are used for quantitation.

These deviations are not expected to affect the quality of the results, because one column had been within acceptable range for each analyte and all samples were nondetect.

B) The purpose of the Laboratory Control Sample (LCS) is to serve as a monitor of the overall performance of all steps in the analysis, including sample preparation under ideal conditions. The LCSs were prepared from two separate sources, a liquid standard solution and a National Institute of Standards and Technologies (NIST) gaseous standard. Vinyl Chloride in samples LSC0321A and LCS0323A was not within control limits on the secondary column. The primary column was within control limits for all analytes. The samples were all not detect on both columns, so this should not have an effect on the quality of the data.

C) Two coeluting pairs of target analytes, dichlorodifluoromethane/chloromethane and bromomethane/chloroethane, are reported in Table 1A. Chromatographic peaks for these pairs of analytes cannot be resolved on the DB-624 column or DB-VRX column under the conditions used. Trichlorofluoromethane splits into two

coeluting peaks on both columns. All samples were non-detect, so this should not have an effect on the quality of the data.

D) Results below the Contract Required Quantitation Limits (CRQL) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection. Only results above the CRQL were reported.

E) All other results are considered valid for all purposes.

Data Validation Report

Case No.: FSP-WDC-1S
Site: Western Dry Cleaners
Laboratory: Region IX Field Analytical Services Program (FASP)
Reviewer: Dawn Conley, QAMS, P-3-2/USEPA
Date: May 22, 1995

I. Case Summary

SAMPLE INFORMATION:

VOA Sample Numbers:	WDC-1S, WDC-1D, WDC-2S, WDC-3S, WDC-9S, WDC-10S, WDC-11S, WDC-12S, WDC-14S and WDC-15S
Concentration and Matrix:	Low Level Soil
Analysis:	Volatiles by SW-846 Methods 8010/8020 (Modified)
SOW:	N/A
Collection Date:	March 20 through 21, 1995
Sample Receipt Date:	March 20 through 21, 1995
Extraction Date:	N/A
Analysis Date:	March 20 through 23, 1995
FIELD QC:	None
Trip Blanks (TB):	None
Field Blanks (FB):	None
Equipment Blanks (EB):	WDC-11S and WDC-12S
Background Samples (BG):	WDC-1S, WDC-1D, WDC-2S, and WDC-3S
Field Duplicates (D1):	WDC-10S and WDC-15S
Field Duplicates (D2):	WDC-3S and WDC-14S

METHOD BLANKS AND ASSOCIATED SAMPLES:

BLK0320A:	LCS0320B, WDC-1S, WDC-1D, WDC-2S, WDC-11S, AND LCS0320C
BLK0320B:	N/A
BLK0321A:	LCS0321B, WDC-9S, WDC-10S, WDC-3S, WDC-14S, WDC-9SMS, WDC-9SMSD, WDC-12S, AND LCS0321C
BLK0321B:	N/A
BLK0323A:	WDC-15S
BLK0323B:	N/A

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifiers

TPO ACTION:

SAMPLING ISSUES: None.
OTHER: None.

TPO ATTENTION:

SAMPLING ISSUES: None.
OTHER: None.

ADDITIONAL COMMENTS:

This report was prepared according to the following documents:

1) "USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review" - February 1994.
2) "Guidelines For Data Validation of 8010A/8020A Packages"; ICF Kaiser - May 1994

ICF KAISER

FASP ANALYTICAL RESULTS NARRATIVE

1.0 ANALYSIS: Volatile Organics in Soil Gas by FASP Modifications of EPA Methods 8010 and 8020.

2.0 SITE: Western Dry Cleaners

3.0 SAMPLES:

A total of 15 soil gas samples were analyzed as follows:

SAMPLE	COLLECTION DATE	ANALYSIS DATE
WDC-1SV	3/20/95	3/20/95
WDC-2SV	3/20/95	3/20/95
WDC-3SV	3/21/95	3/21/95
WDC-4SV	3/20/95	3/20/95
WDC-5SV	3/20/95	3/20/95
WDC-6SV	3/20/95	3/20/95
WDC-7SV	3/21/95	3/21/95
WDC-8SV	3/21/95	3/21/95
WDC-9SV	3/21/95	3/21/95
WDC-10SV	3/21/95	3/21/95
WDC-13SV	3/21/95	3/21/95
WDC-14SV	3/20/95	3/20/95
WDC-15SV	3/21/95	3/21/95
WDC-16SV	3/20/95	3/20/95
WDC-17SV	3/21/95	3/21/95

4.0 QUALITY CONTROL: All samples were analyzed utilizing a dual column gas chromatograph. A DB-624 was utilized as the primary quantitation column, and a DB-VRX was utilized as the confirmation column. Positive results for samples are presented for both columns with associated qualifiers. Quality control (QC) summary forms are provided for both the primary and confirmation columns. Only QC outliers observed on the primary column are discussed within this narrative, unless otherwise noted.

4.1 INITIAL CALIBRATION: A five point initial calibration (ICAL) was performed on 3/19/95 for EPA Method 8010 and 8020 analytes. FASP quality control (QC) guidelines for percent relative standard deviation (%RSD), which are noted on the initial calibration summary forms, were met for all target analytes. Average relative response factors (RRF's) from the initial calibrations were used to calculate analyte concentrations on days that initial calibrations were analyzed. (See attached initial calibration summary.)

4.2 CONTINUING CALIBRATION: Continuing calibration (CCAL) standards were analyzed on 3/20/95 and 3/21/95 for EPA Methods 8010 and 8020 analytes. The relative response factor (RRF) from the CCAL was used to calculate sample analyte concentrations on dates that initial calibrations were not analyzed. The FASP QC criteria for CCAL percent difference (%D) relative to the associated ICAL were met for all analytes for the primary column (DB-624). (See attached continuing calibration summary.)

4.3 INTERNAL STANDARD: An internal standard (I.S.) of 4-bromofluorobenzene was used for both the initial calibrations and continuing calibrations. The relative response factor (RRF) was calculated as follows:

$$RRF = \frac{(\text{Area target})\ (\text{ng I.S.})}{(\text{Area I.S.})\ (\text{ng target})}$$

The internal standard was added to every sample, method blank, laboratory control sample and matrix spike sample analyzed. Target analyte concentrations were calculated as follows:

$$\text{ng target} = \frac{(\text{Area target})\ (\text{ng I.S.})}{(\text{Area I.})\ (\text{RRF})}$$

4.4 BLANK ANALYSES: Blank analyses were performed on all dates that samples were analyzed. Blank analyses on all dates showed no results above the 2.0 ug/L detection limits.

4.5 SURROGATE ANALYSES: A surrogate spiking solution containing 1-chloro-2-bromopropane and fluorobenzene were added to every field sample, method blank, laboratory control sample and matrix spike sample analyzed. Surrogate recovery is used to estimate the adequacy of system performance. All surrogate recoveries for these samples were within the FASP QC criteria.

4.6 LABORATORY CONTROL SAMPLE: A laboratory control sample (LCS) prepared from a solution of vinyl chloride, carbon tetrachloride, 1,2-dichloroethane, trichloroethene, 1,2-dichloropropane, cis-1,3-dichloropropene, 1,1,2-trichloroethane, tetrachloroethene, bromoform, benzene, and 1,4-dichlorobenzene was analyzed once every ten samples. The purpose of this QC sample is to determine the validity of the instrument calibration using a separate source standard. All recoveries were within FASP QC criteria for the primary column. (See attached LCS summary.)

In addition to the analysis of the LCS mixture described above, a National Institute of Standards and Technology (NIST) traceable gaseous standard consisting of vinyl chloride, methylene chloride, 1,1-dichloroethane, chloroform, trichloroethene, 1,2-dichloropropane, tetrachloroethene, chlorobenzene, benzene, and toluene was analyzed once every daily sequence. The purpose of the NIST LCS is to determine the validity of the instrument calibration with a second source standard which approximates the

sample matrix. All NIST LCS recoveries were within FASP QC criteria for the primary column. (See attached LCS summary.)

4.7 MATRIX SPIKE/SPIKE DUPLICATE ANALYSIS: Matrix spike/matrix spike duplicate analyses are not performed on soil gas samples.

4.8 CONFIRMATION VERIFICATION SAMPLE RESULTS: The summary of the confirmational analysis of tetrachloroethene, p,m-xylene and o-xylene with an associated %D qualifier is provided as a part of this report. Sample WDC-3SV exceeded the %D criteria for o-xylene. (See attached Confirmation Verification Summary.)

4.9 HOLDING TIMES: All holding times (12 hours) were met for these samples.

5.0 DATA QUALIFIERS: Included with this data package is a qualifier sheet explaining all data qualifiers.

5.1 DISCUSSION OF RESULTS:

The associated QC sample results were generally acceptable.

During the course of this analysis, field summary data was turned into the client on a fast turn around basis.

Results were reported for samples that were less than FASP reporting limits for tetrachloroethene (PCE). The following samples showed positive results for PCE less than the reporting limits: WDC-1SV, WDC-2SV, WDC-4SV and WDC-14SV.

In the calibration of the instrument, the response factors for the coeluting pairs dichlorodifluoromethane/chloromethane and bromomethane/chloroethane are calculated by either summing the areas of the peaks or by re-integrating the peaks. If a re-integration was performed, the new areas are attached to the standard chromatograms.

Confirmation of qualitative results was performed and all sample results reported are based on dual column analysis. The second column results information is reported in the QC summary that is in this report.

QUALIFIER SHEET

B	This flag is used when the analyte is found in the associated method blank as well as in the sample, indicating possible contamination.
E	This flag indicates that the calculated concentration for an analyte exceeds the linear calibration range, possibly resulting in an artificially low result.
D	This flag indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract.
J	This flag indicates an estimated value. It is used when the analyte is only tentatively identified or present below the FMDL.
JA	This flag indicates an estimated value. It is used when an analyte in the audit cylinder exceeds the percent recovery of 50%-150%.
JC	This flag indicates an estimated value. It is used when an analyte in the continuing calibration exceeds the percent difference (%D) of 25%.
JH	This flag indicates that the holding time for a given sample has been exceeded, which may possibly ensue in an artificially low result.
JI	This flag indicates an estimated value. It is used when an analyte in the initial calibration exceeds the average percent relative standard deviation (%RSD) 30%.
JL	This flag indicates an estimated value. It is used when an analyte in the laboratory control sample exceeds the percent recovery of 70%-125%.
JS	This flag indicates an estimated value. It is used when the surrogate in a sample exceeds the percent recovery of 65%-130%.
N	This flag indicates that the percent difference between the primary and confirmation columns exceeds 75%.
PJ	This flag indicates that the percent difference between the primary and confirmation columns exceeds 50% but is less than 75%.
P	This flag indicates that the percent difference between the primary and confirmation columns exceeds 25% but is less than 50%.

EPA METHOD 8010 INITIAL CALIBRATION DATA

FASP Method 8010 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-624

COMPOUND	Midpoint RT	1.5 % RT Window		RELATIVE RESPONSE FACTORS					Average RRF	SD	%RSD	QC LIMITS
				20 ng	40 ng	100 ng	200 ng	400 ng				
Dichlorodifluoromethane/	3.12	3.10	3.14	1.95E+00	1.91E+00	1.91E+00	1.96E+00	1.76E+00	1.90E+00	7.20E-02	4	+/- 50%
Chloromethane		-----	-----	---	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.74	3.71	3.77	2.64E+00	2.81E+00	2.85E+00	2.93E+00	2.58E+00	2.76E+00	1.31E-01	5	+/- 50%
Bromomethane/Chloroethane	4.40	4.36	4.43	2.68E+00	2.42E+00	2.38E+00	2.72E+00	2.42E+00	2.53E+00	1.45E-01	6	+/- 50%
Trichlorofluoromethane	5.12	5.08	5.16	3.28E+00	3.39E+00	3.53E+00	3.85E+00	3.56E+00	3.52E+00	1.92E-01	5	+/- 50%
1,1-Dichloroethene	6.18	6.13	6.22	4.27E+00	4.47E+00	4.51E+00	4.78E+00	4.55E+00	4.52E+00	1.62E-01	4	+/- 30%
Methylene Chloride	7.25	7.20	7.30	5.43E+00	5.52E+00	5.52E+00	5.65E+00	5.36E+00	5.49E+00	9.84E-02	2	+/- 30%
trans-1,2-Dichloroethene	7.85	7.80	7.91	4.38E+00	4.52E+00	4.59E+00	4.68E+00	4.45E+00	4.52E+00	1.06E-01	2	+/- 30%
1,1-Dichloroethane	8.88	8.81	8.95	4.48E+00	4.53E+00	4.64E+00	4.85E+00	4.56E+00	4.61E+00	1.29E-01	3	+/- 30%
cis-1,2-Dichloroethene	10.39	10.31	10.46	4.63E+00	4.76E+00	4.86E+00	4.99E+00	4.61E+00	4.77E+00	1.43E-01	3	+/- 30%
Chloroform	11.28	11.19	11.36	5.68E+00	5.91E+00	5.90E+00	5.89E+00	5.43E+00	5.76E+00	1.86E-01	3	+/- 30%
1,1,1-Trichloroethane	11.70	11.61	11.79	5.35E+00	5.51E+00	5.58E+00	5.62E+00	5.23E+00	5.46E+00	1.48E-01	3	+/- 30%
Carbon Tetrachloride	12.15	12.06	12.24	6.29E+00	6.40E+00	6.53E+00	6.44E+00	5.94E+00	6.32E+00	2.06E-01	3	+/- 30%
1,2-Dichloroethane	12.84	12.75	12.94	4.43E+00	4.60E+00	4.62E+00	4.57E+00	4.17E+00	4.48E+00	1.69E-01	4	+/- 30%
Trichloroethene	14.70	14.59	14.81	5.80E+00	5.94E+00	5.68E+00	5.68E+00	5.35E+00	5.69E+00	1.94E-01	3	+/- 30%
1,2-Dichloropropane	15.39	15.28	15.51	4.23E+00	4.49E+00	4.38E+00	4.55E+00	4.26E+00	4.38E+00	1.26E-01	3	+/- 30%
Bromodichloromethane	16.35	16.23	16.47	3.90E+00	4.07E+00	4.09E+00	4.15E+00	4.01E+00	4.05E+00	8.22E-02	2	+/- 30%
cis-1,3-Dichloropropene	17.88	17.74	18.01	3.72E+00	3.94E+00	4.00E+00	4.02E+00	3.83E+00	3.90E+00	1.12E-01	3	+/- 30%
trans-1,3-Dichloropropene	20.21	20.06	20.36	3.53E+00	3.57E+00	3.65E+00	3.65E+00	3.50E+00	3.58E+00	6.14E-02	2	+/- 30%
1-Chloro-2-bromopropane	20.41	20.25	20.56	2.91E+00	3.13E+00	2.92E+00	2.90E+00	2.81E+00	2.94E+00	1.18E-01	4	+/- 30%
-surrogate	---	---	---	---	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.99	20.83	21.15	5.05E+00	5.10E+00	4.83E+00	4.75E+00	4.51E+00	4.85E+00	2.15E-01	4	+/- 30%
Tetrachloroethene	21.45	21.29	21.61	5.81E+00	5.98E+00	6.04E+00	6.06E+00	5.83E+00	5.94E+00	1.04E-01	2	+/- 30%
Dibromochloromethane	22.71	22.54	22.88	2.67E+00	2.91E+00	2.97E+00	2.94E+00	2.80E+00	2.86E+00	1.09E-01	4	+/- 30%
Chlorobenzene	25.40	25.21	25.59	1.98E+00	2.03E+00	2.01E+00	2.20E+00	2.10E+00	2.06E+00	7.95E-02	4	+/- 30%
Bromoform	29.76	29.54	29.98	1.78E+00	1.83E+00	1.90E+00	1.86E+00	1.77E+00	1.83E+00	4.87E-02	3	+/- 30%
4-Bromofluorobenzene	31.22	30.99	31.46	-----	-----	-----	-----	-----	-----	-----	-----	-----
-Internal standard	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1,1,2,2-Tetrachloroethane	32.00	31.76	32.23	3.62E+00	3.41E+00	3.40E+00	3.19E+00	2.99E+00	3.32E+00	2.14E-01	6	+/- 30%
1,3-Dichlorobenzene	34.62	34.36	34.88	2.88E+00	3.00E+00	2.99E+00	3.01E+00	2.89E+00	2.95E+00	5.68E-02	2	+/- 30%
1,4-Dichlorobenzene	34.87	34.60	35.12	3.18E+00	3.35E+00	3.20E+00	3.34E+00	3.12E+00	3.24E+00	9.19E-02	3	+/- 30%
1,2-Dichlorobenzene	35.75	35.48	36.02	2.93E+00	3.13E+00	2.93E+00	3.12E+00	2.86E+00	2.96E+00	9.46E-02	3	+/- 30%

00600

FASP Method 8010 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-VRX

COMPOUND	Midpoint RT	1.5 % RT Window		RELATIVE RESPONSE FACTORS 20 ng	40 ng	100 ng	200 ng	400 ng	Average RRF	SD	%RSD	QC LIMITS
Dichlorodifluoromethane/	3.07	3.05	3.09	9.42E-01	5.27E-01	9.06E-01	9.26E-01	8.96E-01	8.39E-01	1.57E-01	19	+/- 50%
Chloromethane	---	-----	-----	---	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.56	3.53	3.59	1.79E+00	1.09E+00	1.71E+00	1.90E+00	1.88E+00	1.68E+00	3.02E-01	18	+/- 50%
Bromomethane/Chloroethane	4.10	4.07	4.13	2.14E+00	1.18E+00	1.62E+00	1.76E+00	1.77E+00	1.69E+00	3.09E-01	18	+/- 50%
Trichlorofluoromethane	5.07	5.03	5.11	3.07E+00	2.35E+00	3.57E+00	3.72E+00	3.71E+00	3.28E+00	5.24E-01	16	+/- 50%
1,1-Dichloroethene	5.84	5.80	5.88	3.24E+00	2.48E+00	3.70E+00	3.75E+00	3.65E+00	3.36E+00	4.75E-01	14	+/- 30%
Methylene Chloride	6.05	6.00	6.10	5.72E+00	4.23E+00	5.90E+00	6.12E+00	5.91E+00	5.58E+00	6.87E-01	12	+/- 30%
trans-1,2-Dichloroethene	7.24	7.19	7.29	3.89E+00	2.89E+00	4.10E+00	4.24E+00	4.06E+00	3.84E+00	4.87E-01	13	+/- 30%
1,1-Dichloroethane	7.72	7.66	7.78	4.22E+00	3.09E+00	4.38E+00	4.51E+00	4.33E+00	4.10E+00	5.15E-01	13	+/- 30%
cis-1,2-Dichloroethene	8.92	8.85	8.99	4.23E+00	3.09E+00	4.38E+00	4.53E+00	4.36E+00	4.12E+00	5.24E-01	13	+/- 30%
Chloroform	9.39	9.32	9.46	5.37E+00	3.93E+00	5.48E+00	5.59E+00	5.27E+00	5.13E+00	6.10E-01	12	+/- 30%
1,2-Dichloroethane	10.88	10.80	10.96	4.03E+00	2.90E+00	4.16E+00	4.08E+00	4.04E+00	3.84E+00	4.75E-01	12	+/- 30%
1,1,1-Trichloroethane	11.09	11.01	11.17	5.38E+00	3.93E+00	5.35E+00	5.57E+00	5.21E+00	5.09E+00	5.90E-01	12	+/- 30%
Carbon tetrachloride	11.98	11.89	12.07	5.71E+00	4.17E+00	5.88E+00	6.07E+00	5.76E+00	5.52E+00	6.87E-01	12	+/- 30%
1,2-Dichloropropane	13.75	13.65	13.85	3.45E+00	2.49E+00	3.87E+00	3.98E+00	3.84E+00	3.52E+00	5.50E-01	16	+/- 30%
Trichloroethene	13.89	13.79	13.99	6.25E+00	4.48E+00	6.29E+00	5.48E+00	5.81E+00	5.66E+00	6.64E-01	12	+/- 30%
Bromodichloromethane	13.98	13.88	14.08	4.21E+00	2.96E+00	3.78E+00	4.31E+00	3.74E+00	3.80E+00	4.76E-01	13	+/- 30%
cis-1,3-Dichloropropene	16.03	15.91	16.15	3.41E+00	2.52E+00	3.69E+00	3.73E+00	3.61E+00	3.39E+00	4.51E-01	13	+/- 30%
trans-1,3-Dichloropropene	17.47	17.34	17.60	3.30E+00	2.39E+00	3.29E+00	3.41E+00	3.35E+00	3.15E+00	3.82E-01	12	+/- 30%
1,1,2-Trichloroethane	17.86	17.73	17.99	4.82E+00	3.41E+00	4.59E+00	4.46E+00	4.28E+00	4.31E+00	4.84E-01	11	+/- 30%
1-Chloro-2-bromopropane	18.41	18.27	18.55	2.55E+00	1.88E+00	2.69E+00	2.87E+00	2.88E+00	2.57E+00	3.67E-01	14	+/- 30%
-surrogate	---	---	---	---	---	---	---	---	---	---	---	---
Dibromochloromethane	19.54	19.39	19.69	2.59E+00	1.91E+00	2.75E+00	2.76E+00	2.73E+00	2.55E+00	3.25E-01	13	+/- 30%
Tetrachloroethene	21.38	21.22	21.54	5.14E+00	3.76E+00	5.38E+00	5.40E+00	4.92E+00	4.92E+00	6.05E-01	12	+/- 30%
Chlorobenzene	24.27	24.09	24.45	1.65E+00	1.27E+00	1.91E+00	1.96E+00	1.98E+00	1.75E+00	2.71E-01	15	+/- 30%
Bromoform	26.22	26.02	26.42	1.78E+00	1.30E+00	1.94E+00	1.77E+00	1.77E+00	1.71E+00	2.15E-01	13	+/- 30%
1,1,2,2-Tetrachloroethane	28.18	27.97	28.39	3.12E+00	2.20E+00	3.28E+00	3.03E+00	2.98E+00	2.93E+00	3.75E-01	13	+/- 30%
4-Bromofluorobenzene	30.10	29.87	30.32	-----	-----	-----	-----	-----	-----	-----	-----	-----
-Internal standard	---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1,3-Dichlorobenzene	34.13	33.87	34.38	2.44E+00	1.87E+00	2.68E+00	2.69E+00	2.71E+00	2.48E+00	3.22E-01	13	+/- 30%
1,4-Dichlorobenzene	34.24	33.98	34.49	3.06E+00	2.25E+00	3.14E+00	3.03E+00	3.05E+00	2.90E+00	3.31E-01	11	+/- 30%
1,2-Dichlorobenzene	35.13	34.87	35.39	2.62E+00	2.07E+00	2.79E+00	2.70E+00	2.65E+00	2.57E+00	2.57E-01	10	+/- 30%

00091

EPA METHOD 8020 INITIAL CALIBRATION DATA

FASP Method 8020 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March 19, 1995

Column: DB-624

COMPOUND	Midpoint RT	1.5 % RT Window		PEAK AREAS				
				20 ng	40 ng	100 ng	200 ng	400 ng
Benzene	12.73	12.63	12.83	83006	180095	501208	1068449	2316244
Fluorobenzene--surrogate	13.57	13.47	13.67	53214	115646	339448	695640	1482904
---	---	---	---	---	---	---	---	---
Toluene	19.08	18.94	19.22	77074	164174	470032	984116	2089328
Chlorobenzene	25.39	25.20	25.58	81856	180112	510684	1068480	2315431
Ethylbenzene	26.01	25.81	26.21	66562	144756	412926	864605	1841510
p,m-Xylene	26.62	26.42	26.82	171219	378641	1020848	2158228	4723542
o-Xylene	28.76	28.54	28.98	65825	141200	398362	842232	1782608
4-Bromofluorobenzene	31.20	30.97	31.43	1715570	1709148	1689232	1644627	1640542
---Internal standard		---	---	---	---	---	---	---

COMPOUND	RELATIVE RESPONSE FACTORS					Average RRF	SD	% RSD	QC LIMITS
	20 ng	40 ng	100 ng	200 ng	400 ng				
Benzene	9.68E-01	1.05E+00	1.19E+00	1.30E+00	1.41E+00	1.18E+00	1.61E-01	14	+/- 30%
Fluorobenzene--surrogate	6.20E-01	6.77E-01	8.04E-01	8.46E-01	9.04E-01	7.70E-01	1.06E-01	14	+/- 30%
---	---	---	---	---	---	---	---	---	---
Toluene	8.99E-01	9.61E-01	1.11E+00	1.20E+00	1.27E+00	1.09E+00	1.41E-01	13	+/- 30%
Chlorobenzene	9.54E-01	1.05E+00	1.21E+00	1.30E+00	1.41E+00	1.19E+00	1.65E-01	14	+/- 30%
Ethylbenzene	7.76E-01	8.47E-01	9.78E-01	1.05E+00	1.12E+00	9.55E-01	1.28E-01	13	+/- 30%
p,m-Xylene	2.00E+00	2.22E+00	2.42E+00	2.62E+00	2.88E+00	2.43E+00	3.08E-01	13	+/- 30%
o-Xylene	7.67E-01	8.26E-01	9.43E-01	1.02E+00	1.09E+00	9.30E-01	1.19E-01	13	+/- 30%

FASP Method 8020 Initial Calibration Summary With Internal Standard

Site: Phoenix, AZ

Calibration Date: March, 19 1995

Column: DB-VRX

COMPOUND	Midpoint RT	1.5 % RT Window		PEAK AREAS				
				20 ng	40 ng	100 ng	200 ng	400 ng
Benzene	12.10	12.01	12.19	43690	88130	225250	454970	922610
Fluorobenzene--surrogate	12.72	12.62	12.82	29140	59150	150790	310225	641275
Trichloroethene	13.86	13.76	13.96	27730	55762	138935	275210	567715
Toluene	18.48	18.34	18.62	39555	78535	208365	427990	880815
Chlorobenzene	24.20	24.02	24.38	43470	87490	226910	467670	968440
Ethylbenzene	25.37	25.18	25.56	34585	70590	182110	377740	783610
p,m-Xylene	26.35	26.15	26.55	82650	167170	436410	893540	1825000
o-Xylene	28.22	28.01	28.43	33545	68630	176900	366985	760695
4-Bromofluorobenzene	30.02	29.79	30.25	705135	701010	693530	686195	681365
-Internal standard		---	---	---	---	---	---	---

COMPOUND	RELATIVE RESPONSE FACTORS					Average RRF	SD	% RSD	QC LIMITS
	20 ng	40 ng	100 ng	200 ng	400 ng				
Benzene	1.24E+00	1.26E+00	1.30E+00	1.33E+00	1.35E+00	1.30E+00	4.25E-02	3	+/- 30%
Fluorobenzene--surrogate	8.27E-01	8.44E-01	8.70E-01	9.04E-01	9.41E-01	8.77E-01	4.14E-02	5	+/- 30%
Trichloroethene	7.87E-01	7.95E-01	8.01E-01	8.02E-01	8.33E-01	8.04E-01	1.58E-02	2	+/- 30%
Toluene	1.12E+00	1.12E+00	1.20E+00	1.25E+00	1.29E+00	1.20E+00	6.82E-02	6	+/- 30%
Chlorobenzene	1.23E+00	1.25E+00	1.31E+00	1.36E+00	1.42E+00	1.31E+00	7.05E-02	5	+/- 30%
Ethylbenzene	9.81E-01	1.01E+00	1.05E+00	1.10E+00	1.15E+00	1.06E+00	6.15E-02	6	+/- 30%
p,m-Xylene	2.34E+00	2.38E+00	2.52E+00	2.60E+00	2.68E+00	2.51E+00	1.27E-01	5	+/- 30%
o-Xylene	9.51E-01	9.79E-01	1.02E+00	1.07E+00	1.12E+00	1.03E+00	5.98E-02	6	+/- 30%

EPA METHOD 8010 CONTINUING CALIBRATION DATA

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.14	3.12	3.16	394167	1.46E+00	1.90E+00	-23	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.75	3.72	3.78	663402	2.45E+00	2.76E+00	-11	+/- 50%
Bromomethane/Chloroethane	4.45	4.42	4.48	378586	1.40E+00	2.53E+00	-45	+/- 50%
Trichlorofluoromethane	5.14	5.10	5.18	792556	2.93E+00	3.52E+00	-17	+/- 50%
1,1-Dichloroethene	6.20	6.15	6.25	1069696	3.95E+00	4.52E+00	-12	+/- 25%
Methylene Chloride	7.29	7.24	7.34	1271750	4.70E+00	5.49E+00	-14	+/- 25%
trans-1,2-Dichloroethene	7.88	7.82	7.94	1096280	4.05E+00	4.52E+00	-10	+/- 25%
1,1-Dichloroethane	8.91	8.84	8.98	1121230	4.14E+00	4.61E+00	-10	+/- 25%
cis-1,2-Dichloroethene	10.41	10.33	10.49	1156068	4.27E+00	4.77E+00	-10	+/- 25%
Chloroform	11.30	11.22	11.38	1366352	5.05E+00	5.76E+00	-12	+/- 25%
1,1,1-Trichloroethane	11.73	11.64	11.82	1275673	4.72E+00	5.46E+00	-14	+/- 25%
Carbon Tetrachloride	12.17	12.08	12.26	1500118	5.55E+00	6.32E+00	-12	+/- 25%
1,2-Dichloroethane	12.86	12.76	12.96	1107005	4.09E+00	4.48E+00	-9	+/- 25%
Trichloroethene	14.71	14.60	14.82	1346772	4.98E+00	5.69E+00	-13	+/- 25%
1,2-Dichloropropane	15.40	15.28	15.52	1083371	4.00E+00	4.38E+00	-9	+/- 25%
Bromodichloromethane	16.35	16.23	16.47	1014024	3.75E+00	4.05E+00	-7	+/- 25%
cis-1,3-Dichloropropene	17.87	17.74	18.00	974690	3.60E+00	3.90E+00	-8	+/- 25%
trans-1,3-Dichloropropene	20.20	20.05	20.35	927726	3.43E+00	3.58E+00	-4	+/- 25%
1-Chloro-2-bromopropane	20.40	20.25	20.55	729197	2.70E+00	2.94E+00	-8	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.98	20.82	21.14	1228250	4.54E+00	4.85E+00	-6	+/- 25%
Tetrachloroethene	21.44	21.28	21.60	1391934	5.15E+00	5.94E+00	-13	+/- 25%
Dibromochloromethane	22.69	22.52	22.86	745632	2.76E+00	2.86E+00	-4	+/- 25%
Chlorobenzene	25.38	25.19	25.57	500477	1.85E+00	2.06E+00	-10	+/- 25%
Bromoform	29.73	29.51	29.95	511552	1.89E+00	1.83E+00	3	+/- 25%
4-Bromofluorobenzene	31.20	30.97	31.43	541018	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,1,2,2-Tetrachloroethane	31.97	31.73	32.21	959244	3.55E+00	3.32E+00	7	+/- 25%
1,3-Dichlorobenzene	34.59	34.33	34.85	722069	2.67E+00	2.95E+00	-10	+/- 25%
1,4-Dichlorobenzene	34.85	34.59	35.11	778648	2.88E+00	3.24E+00	-11	+/- 25%
1,2-Dichlorobenzene	35.73	35.46	36.00	734459	2.72E+00	2.96E+00	-8	+/- 25%

NR: Analyte not recovered NA: Not applicable

96000

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.09	3.07	3.12	409910	7.61E-01	8.39E-01	-9	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.59	3.56	3.62	597300	1.11E+00	1.68E+00	-34	+/- 50%
Bromomethane/Chloroethane	4.13	4.10	4.16	681300	1.27E+00	1.69E+00	-25	+/- 50%
Trichlorofluoromethane	5.11	5.07	5.15	1792197	3.33E+00	3.28E+00	1	+/- 50%
1,1-Dichloroethene	5.91	5.86	5.95	1880859	3.49E+00	3.36E+00	4	+/- 25%
Methylene Chloride	6.10	6.06	6.15	2839299	5.27E+00	5.58E+00	-5	+/- 25%
trans-1,2-Dichloroethene	7.30	7.24	7.35	2053405	3.81E+00	3.84E+00	-1	+/- 25%
1,1-Dichloroethane	7.77	7.71	7.83	2165030	4.02E+00	4.10E+00	-2	+/- 25%
cis-1,2-Dichloroethene	8.96	8.90	9.03	2155190	4.00E+00	4.12E+00	-3	+/- 25%
Chloroform	9.43	9.36	9.50	2654895	4.93E+00	5.13E+00	-4	+/- 25%
1,2-Dichloroethane	10.91	10.83	11.00	2075671	3.85E+00	3.84E+00	0	+/- 25%
1,1,1-Trichloroethane	11.13	11.05	11.22	2615869	4.86E+00	5.09E+00	-5	+/- 25%
Carbon tetrachloride	12.01	11.92	12.10	2876265	5.34E+00	5.52E+00	-3	+/- 25%
1,2-Dichloropropane	13.77	13.66	13.87	2034614	3.78E+00	3.52E+00	7	+/- 25%
Trichloroethene	13.91	13.80	14.01	2760902	5.13E+00	5.66E+00	-9	+/- 25%
Bromodichloromethane	14.00	13.90	14.11	2025419	3.76E+00	3.80E+00	-1	+/- 25%
cis-1,3-Dichloropropene	16.03	15.91	16.15	1875580	3.48E+00	3.39E+00	3	+/- 25%
trans-1,3-Dichloropropene	17.47	17.34	17.60	1794817	3.33E+00	3.15E+00	6	+/- 25%
1,1,2-Trichloroethane	17.85	17.72	17.99	2407753	4.47E+00	4.31E+00	4	+/- 25%
1-Chloro-2-bromopropane	18.41	18.27	18.54	1375175	2.55E+00	2.57E+00	-1	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
Dibromochloromethane	19.53	19.38	19.67	1438440	2.67E+00	2.55E+00	5	+/- 25%
Tetrachloroethene	21.37	21.21	21.53	2652510	4.93E+00	4.92E+00	0	+/- 25%
Chlorobenzene	24.25	24.07	24.43	970950	1.80E+00	1.75E+00	3	+/- 25%
Bromoform	26.19	25.99	26.38	1061100	1.97E+00	1.71E+00	15	+/- 25%
1,1,2,2-Tetrachloroethane	28.14	27.92	28.35	1862875	3.46E+00	2.93E+00	18	+/- 25%
4-Bromofluorobenzene	30.07	29.84	30.29	1076925	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,3-Dichlorobenzene	34.11	33.85	34.36	1366490	2.54E+00	2.48E+00	2	+/- 25%
1,4-Dichlorobenzene	34.30	34.04	34.56	1528260	2.84E+00	2.90E+00	-2	+/- 25%
1,2-Dichlorobenzene	35.11	34.85	35.38	1402275	2.60E+00	2.57E+00	1	+/- 25%

NR: Analyte not recovered NA: Not applicable

00097

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.16	3.14	3.18	386683	1.54E+00	1.90E+00	-19	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.75	3.72	3.78	603101	2.40E+00	2.76E+00	-13	+/- 50%
Bromomethane/Chloroethane	4.44	4.41	4.47	453041	1.80E+00	2.53E+00	-29	+/- 50%
Trichlorofluoromethane	5.17	5.13	5.21	775195	3.08E+00	3.52E+00	-13	+/- 50%
1,1-Dichloroethene	6.21	6.16	6.26	1014720	4.03E+00	4.52E+00	-11	+/- 25%
Methylene Chloride	7.28	7.23	7.33	1221195	4.85E+00	5.49E+00	-12	+/- 25%
trans-1,2-Dichloroethene	7.89	7.83	7.95	1002071	3.98E+00	4.52E+00	-12	+/- 25%
1,1-Dichloroethane	8.92	8.85	8.99	1046116	4.16E+00	4.61E+00	-10	+/- 25%
cis-1,2-Dichloroethene	10.41	10.33	10.49	1005118	3.99E+00	4.77E+00	-16	+/- 25%
Chloroform	11.30	11.22	11.38	1257126	4.99E+00	5.76E+00	-13	+/- 25%
1,1,1-Trichloroethane	11.73	11.64	11.82	1190449	4.73E+00	5.46E+00	-13	+/- 25%
Carbon Tetrachloride	12.17	12.08	12.26	1404838	5.58E+00	6.32E+00	-12	+/- 25%
1,2-Dichloroethane	12.86	12.76	12.96	1023925	4.07E+00	4.48E+00	-9	+/- 25%
Trichloroethene	14.71	14.60	14.82	1246132	4.95E+00	5.69E+00	-13	+/- 25%
1,2-Dichloropropane	15.40	15.28	15.52	989259	3.93E+00	4.38E+00	-10	+/- 25%
Bromodichloromethane	16.36	16.24	16.48	928008	3.69E+00	4.05E+00	-9	+/- 25%
cis-1,3-Dichloropropene	17.88	17.75	18.01	897126	3.56E+00	3.90E+00	-9	+/- 25%
trans-1,3-Dichloropropene	20.20	20.05	20.35	865131	3.44E+00	3.58E+00	-4	+/- 25%
1-Chloro-2-bromopropane	20.41	20.26	20.56	671590	2.67E+00	2.94E+00	-9	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
1,1,2-Trichloroethane	20.98	20.82	21.14	1106961	4.40E+00	4.85E+00	-9	+/- 25%
Tetrachloroethene	21.45	21.29	21.61	1328120	5.28E+00	5.94E+00	-11	+/- 25%
Dibromochloromethane	22.70	22.53	22.87	683357	2.72E+00	2.86E+00	-5	+/- 25%
Chlorobenzene	25.39	25.20	25.58	480218	1.91E+00	2.06E+00	-8	+/- 25%
Bromoform	29.74	29.52	29.96	468530	1.86E+00	1.83E+00	2	+/- 25%
4-Bromofluorobenzene	31.22	30.99	31.45	503376	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,1,2,2-Tetrachloroethane	31.99	31.75	32.23	803774	3.19E+00	3.32E+00	-4	+/- 25%
1,3-Dichlorobenzene	34.61	34.35	34.87	674929	2.68E+00	2.95E+00	-9	+/- 25%
1,4-Dichlorobenzene	34.86	34.60	35.12	736889	2.93E+00	3.24E+00	-10	+/- 25%
1,2-Dichlorobenzene	35.74	35.47	36.01	680504	2.70E+00	2.96E+00	-9	+/- 25%

NR: Analyte not recovered NA: Not applicable

00098

FASP Method 8010 Continuing Calibration Summary With Internal Standard

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Dichlorodifluoromethane/	3.12	3.09	3.14	441090	8.19E-01	8.39E-01	-2	+/- 50%
Chloromethane	---	---	---	---	---	---	---	+/- 50%
Vinyl chloride	3.59	3.57	3.62	765186	1.42E+00	1.68E+00	-15	+/- 50%
Bromomethane/Chloroethane	4.14	4.11	4.18	764354	1.42E+00	1.69E+00	-16	+/- 50%
Trichlorofluoromethane	5.12	5.08	5.16	1769429	3.28E+00	3.28E+00	0	+/- 50%
1,1-Dichloroethene	5.90	5.85	5.94	1844006	3.42E+00	3.36E+00	2	+/- 25%
Methylene Chloride	6.10	6.05	6.14	2855045	5.30E+00	5.58E+00	-5	+/- 25%
trans-1,2-Dichloroethene	7.30	7.25	7.36	2046890	3.80E+00	3.84E+00	-1	+/- 25%
1,1-Dichloroethane	7.78	7.72	7.84	2164010	4.02E+00	4.10E+00	-2	+/- 25%
cis-1,2-Dichloroethene	8.97	8.90	9.04	2195320	4.07E+00	4.12E+00	-1	+/- 25%
Chloroform	9.44	9.37	9.51	2686240	4.98E+00	5.13E+00	-3	+/- 25%
1,2-Dichloroethane	10.92	10.84	11.00	2008141	3.73E+00	3.84E+00	-3	+/- 25%
1,1,1-Trichloroethane	11.14	11.06	11.22	2630669	4.88E+00	5.09E+00	-4	+/- 25%
Carbon tetrachloride	12.02	11.93	12.11	2874565	5.33E+00	5.52E+00	-3	+/- 25%
1,2-Dichloropropane	13.77	13.67	13.88	1931687	3.58E+00	3.52E+00	2	+/- 25%
Trichloroethene	13.92	13.81	14.02	2973664	5.52E+00	5.66E+00	-3	+/- 25%
Bromodichloromethane	14.01	13.91	14.12	1804240	3.35E+00	3.80E+00	-12	+/- 25%
cis-1,3-Dichloropropene	16.04	15.92	16.16	1850890	3.43E+00	3.39E+00	1	+/- 25%
trans-1,3-Dichloropropene	17.48	17.35	17.61	1746193	3.24E+00	3.15E+00	3	+/- 25%
1,1,2-Trichloroethane	17.86	17.73	18.00	2310382	4.29E+00	4.31E+00	-1	+/- 25%
1-Chloro-2-bromopropane	18.42	18.28	18.56	1370690	2.54E+00	2.57E+00	-1	+/- 25%
-surrogate	---	---	---	---	---	---	---	---
Dibromochloromethane	19.53	19.39	19.68	1397960	2.59E+00	2.55E+00	2	+/- 25%
Tetrachloroethene	21.38	21.22	21.54	2669180	4.95E+00	4.92E+00	1	+/- 25%
Chlorobenzene	24.26	24.08	24.44	982000	1.82E+00	1.75E+00	4	+/- 25%
Bromoform	26.20	26.01	26.40	983735	1.83E+00	1.71E+00	7	+/- 25%
1,1,2,2-Tetrachloroethane	28.16	27.94	28.37	1722585	3.20E+00	2.93E+00	9	+/- 25%
4-Bromofluorobenzene	30.09	29.86	30.31	1077765	---	-----	---	---
-Internal standard	---	---	---	---	---	-----	---	---
1,3-Dichlorobenzene	34.13	33.87	34.38	1376500	2.55E+00	2.48E+00	3	+/- 25%
1,4-Dichlorobenzene	34.32	34.06	34.58	1542080	2.86E+00	2.90E+00	-1	+/- 25%
1,2-Dichlorobenzene	35.13	34.86	35.39	1407330	2.61E+00	2.57E+00	2	+/- 25%

NR: Analyte not recovered NA: Not applicable

00099

EPA METHOD 8020 CONTINUING CALIBRATION DATA

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.74	12.64	12.84	984417	1.15E+00	1.18E+00	3	+/- 25%
Fluorobenzene--surrogate	13.58	13.48	13.68	639046	7.47E-01	7.70E-01	3	+/- 25%
---	---	---	---	---	---	---	---	---
Toluene	19.06	18.92	19.20	907077	1.06E+00	1.09E+00	3	+/- 25%
Chlorobenzene	25.36	25.17	25.55	985127	1.15E+00	1.19E+00	3	+/- 25%
Ethylbenzene	25.99	25.80	26.18	796656	9.32E-01	9.55E-01	2	+/- 25%
p,m-Xylene	26.60	26.40	26.80	1990760	2.33E+00	2.43E+00	4	+/- 25%
o-Xylene	28.72	28.50	28.94	778044	9.10E-01	9.30E-01	2	+/- 25%
4-Bromofluorobenzene	31.18	30.95	31.41	1710048	---	---	---	---
-Internal standard	---	---	---	---	---	---	---	---

00101

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 20, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.11	12.02	12.20	412950	1.20E+00	1.30E+00	8	+/- 25%
Fluorobenzene--surrogate	12.74	12.64	12.83	280880	8.15E-01	8.77E-01	7	+/- 25%
Trichloroethene	13.87	13.76	13.97	255830	7.42E-01	8.04E-01	8	+/- 25%
Toluene	18.49	18.35	18.63	388865	1.13E+00	1.20E+00	6	+/- 25%
Chlorobenzene	24.21	24.03	24.39	425070	1.23E+00	1.31E+00	6	+/- 25%
Ethylbenzene	25.34	25.15	25.53	342420	9.93E-01	1.06E+00	6	+/- 25%
p,m-Xylene	26.33	26.13	26.52	811520	2.35E+00	2.51E+00	6	+/- 25%
o-Xylene	28.19	27.97	28.40	333985	9.69E-01	1.03E+00	6	+/- 25%
4-Bromofluorobenzene	30.03	29.80	30.25	689550	---		---	---
-Internal standard	---	---	---	---	---		---	---

00102

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

Standard Concentration: 200 ng
Column: DB-624

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.74	12.64	12.84	848934	1.19E+00	1.18E+00	-0	+/- 25%
Fluorobenzene--surrogate	13.59	13.49	13.69	553758	7.74E-01	7.70E-01	-0	+/- 25%
---	---	---	---	---	---	---	---	---
Toluene	19.07	18.93	19.21	783984	1.10E+00	1.09E+00	-1	+/- 25%
Chlorobenzene	25.37	25.18	25.56	848968	1.19E+00	1.19E+00	-0	+/- 25%
Ethylbenzene	26.00	25.81	26.20	690294	9.64E-01	9.55E-01	-1	+/- 25%
p,m-Xylene	26.61	26.41	26.81	1698174	2.37E+00	2.43E+00	2	+/- 25%
o-Xylene	28.74	28.52	28.96	672830	9.40E-01	9.30E-01	-1	+/- 25%
4-Bromofluorobenzene	31.20	30.97	31.43	1431506	---	---	---	---
*Internal standard	---	---	---	---	---	---	---	---

00103

FASP Method 8020 Continuing Calibration Summary

Site: Phoenix, AZ

Continuing Calibration Date: March 21, 1995
Initial Calibration Date: March 19, 1995

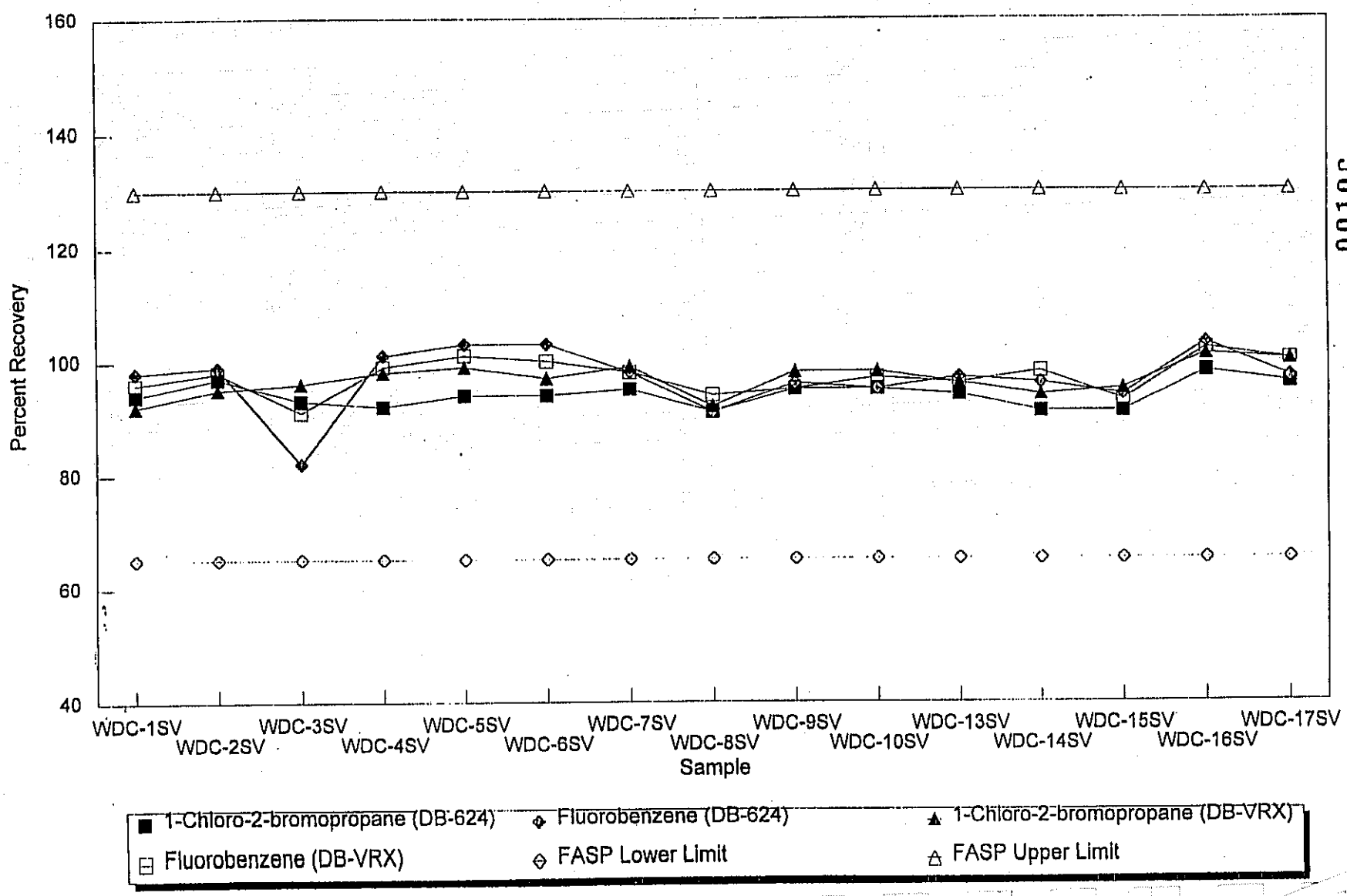
Standard Concentration: 200 ng
Column: DB-VRX

COMPOUND	Retention Time	1.5 % RT Window		Area	Rel-Response Factor - CCAL	Rel-Response Factor - ICAL	% D	QC Limits
Benzene	12.11	12.02	12.20	370155	1.23E+00	1.30E+00	5	+/- 25%
Fluorobenzene--surrogate	12.74	12.64	12.84	251610	8.33E-01	8.77E-01	5	+/- 25%
Trichloroethene	13.88	13.78	13.98	225950	7.48E-01	8.04E-01	7	+/- 25%
Toluene	18.51	18.37	18.65	348175	1.15E+00	1.20E+00	4	+/- 25%
Chlorobenzene	24.22	24.04	24.40	379320	1.26E+00	1.31E+00	4	+/- 25%
Ethylbenzene	25.36	25.17	25.55	306505	1.01E+00	1.06E+00	4	+/- 25%
p,m-Xylene	26.34	26.14	26.54	728060	2.41E+00	2.51E+00	4	+/- 25%
o-Xylene	28.21	28.00	28.42	298660	9.89E-01	1.03E+00	4	+/- 25%
4-Bromofluorobenzene	30.05	29.82	30.28	603985	---		---	---
-Internal standard	---	---	---	---	---		---	---

EPA METHOD 8010/8020 SURROGATE RECOVERY CONTROL CHART

FASP Method 8010/8020 Surrogate Recovery Control Chart

Western Dry Cleaners



00106

FASP METHOD 8010/8020 SURROGATE RECOVERY SUMMARY

SITE: Western Dry Cleaners

				COLUMN: DB-624		COLUMN: - DB-VRX		
				% RECOVERY		% RECOVERY		
	Sample	Date Sampled	Date Analyzed	1-Chloro-2-bromopropane	Fluorobenzene	1-Chloro-2-bromopropane	Fluorobenzene	QC LIMITS
1	WDC-1SV	03/20/95	03/20/95	94	98	92	96	65-130%
2	WDC-2SV	03/20/95	03/20/95	97	99	95	98	65-130%
3	WDC-3SV	03/21/95	03/21/95	93	82	96	91	65-130%
4	WDC-4SV	03/20/95	03/20/95	92	101	98	99	65-130%
5	WDC-5SV	03/20/95	03/20/95	94	103	99	101	65-130%
6	WDC-6SV	03/20/95	03/20/95	94	103	97	100	65-130%
7	WDC-7SV	03/21/95	03/21/95	95	98	99	98	65-130%
8	WDC-8SV	03/21/95	03/21/95	91	91	92	94	65-130%
9	WDC-9SV	03/21/95	03/21/95	95	96	98	95	65-130%
10	WDC-10SV	03/21/95	03/21/95	95	95	98	97	65-130%
11	WDC-13SV	03/21/95	03/21/95	94	97	96	96	65-130%
12	WDC-14SV	03/20/95	03/20/95	91	96	94	98	65-130%
13	WDC-15SV	03/21/95	03/21/95	91	94	95	93	65-130%
14	WDC-16SV	03/20/95	03/20/95	98	103	101	102	65-130%
15	WDC-17SV	03/21/95	03/21/95	96	97	100	100	65-130%
	*OUT OF QC LIMITS:			0 of 15	0 of 15	0 of 15	0 of 15	

* NR: Analyte not recovered.

00107

EPA METHOD 8010/8020 BLANK SUMMARY

FASP METHOD 8010/8020 METHOD BLANK SUMMARY

SITE: Western Dry Cleaners

COLUMN: DB-624, Quantitation

DATE		CONTAMINANTS (ug/L)	FMDL (ug/L)	SURROGATE % RECOVERY		
				1-Chloro-2-bromopropane	Fluorobenzene	QC Limits
03/20/95	BLK0320A		2	98	96	65-130%
	BLK0320B		2	98	98	65-130%
03/21/95	BLK0321A		2	98	98	65-130%
	BLK0321B		2	86	93	65-130%

COLUMN: DB-VRX, Confirmation

DATE		CONTAMINANTS (ug/L)	FMDL (ug/L)	SURROGATE % RECOVERY		
				1-Chloro-2-bromopropane	Fluorobenzene	QC Limits
03/20/95	BLK0320A		2	98	99	65-130%
	BLK0320B		2	96	94	65-130%
03/21/95	BLK0321A		2	99	98	65-130%
	BLK0321B		2	89	91	65-130%

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	BLK0320A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		96

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	BLK0320B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
BLK0321A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
,1-Dichloroethene	<2		2
Methylene chloride	<2		2
ans-1,2-Dichloroethene	<2		2
,1-Dichloroethane	<2		2
is-1,2-Dichloroethene	<2		2
hloroform	<2		2
,1,1-Trichloroethane	<2		2
arbon tetrachloride	<2		2
,2-Dichloroethane	<2		2
richloroethene	<2		2
,2-Dichloropropane	<2		2
romodichloromethane	<2		2
s-1,3-Dichloropropene	<2		2
ans-1,3-Dichloropropene	<2		2
1,2-Trichloroethane	<2		2
etrachloroethene	<2		2
ibromochloromethane	<2		2
hlorobenzene	<2		2
romoform	<2		2
1,2,2-Tetrachloroethane	<2		2
3-Dichlorobenzene	<2		2
4-Dichlorobenzene	<2		2
2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	98

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<2		2
luene	<2		2
lorobenzene	<2		2
ylbenzene	<2		2
n-Xylene	<2		2
Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
BLK0321B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	86

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	93

EPA METHOD 8010/8020 LABORATORY CONTROL SAMPLE RECOVERY

FASP METHOD 8010/8020 LCS RECOVERY SUMMARY

SITE: Western Dry Cleaners

COLUMN: DB-624, Quantitation

DATE		Vinyl chloride	Carbon tet.	1,2-DCA	TCE	1,2-DCP	cis-1,3-DCP	1,1,2-TCA	PCE	Bromoform	1,4-DCB	Benzene	% Surr. Rec.	
													1-Chloro-2-bp	Fluorobenzene
03/20/95	LCS0320A	61	91	90	89	90	99	90	93	92	86	92	85	84
	LCS0320B	64	91	88	90	90	94	88	94	91	87	93	95	101
	LCS0320C	65	88	88	89	90	96	88	96	84	85	93	96	101
	LCS0320D	63	89	89	89	91	97	93	96	96	85	91	97	96
03/21/95	LCS0321A	62	89	86	88	88	96	90	91	90	81	90	94	98
	LCS0321B	62	87	87	87	85	93	92	90	92	81	90	95	96
	LCS0321C	64	87	85	87	89	93	84	88	82	79	87	93	90
	QC LIMITS	50-150%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	65-130%	65-130%
	*OUT OF LIMITS:	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7

COLUMN: DB-VRX, Confirmation

DATE		Vinyl chloride	1,2-DCA	Carbon tet.	1,2-DCP	TCE	cis-1,3-DCP	1,1,2-TCA	PCE	Bromoform	1,4-DCB	Benzene	% Surr. Rec.	
													1-Chloro-2-bp	Fluorobenzene
03/20/95	LCS0320A	65	93	96	85	97	100	93	97	94	86	85	91	84
	LCS0320B	73	87	91	84	90	94	88	92	88	85	93	96	100
	LCS0320C	87	85	91	84	90	94	85	93	79	82	92	98	98
	LCS0320D	95	89	92	90	89	98	91	94	90	84	89	97	93
03/21/95	LCS0321A	49*	90	92	91	83	99	94	94	95	83	90	101	96
	LCS0321B	73	92	92	89	84	96	92	91	91	82	88	97	93
	LCS0321C	68	83	86	84	83	88	82	88	81	79	88	91	93
	QC LIMITS	50-150%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	70-125%	65-130%	65-130%
	*OUT OF LIMITS:	1 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7	0 of 7

00115

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
ichlorodifluoromethane/Chloromethane	<4		4
inyl chloride	24		4
romomethane/Chloroethane	<4		4
richlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
lethylene chloride	<4		4
ans-1,2-Dichloroethene	<4		4
1-Dichloroethane	<4		4
s-1,2-Dichloroethene	<4		4
hloroform	<4		4
1,1-Trichloroethane	<4		4
arbon tetrachloride	36		4
2-Dichloroethane	36		4
ichloroethene	35		4
2-Dichloropropane	36		4
romodichloromethane	<4		4
s-1,3-Dichloropropene	39		4
ans-1,3-Dichloropropene	<4		4
1,2-Trichloroethane	36		4
etrachloroethene	37		4
bromochloromethane	<4		4
hlorobenzene	<4		4
omoform	37		4
1,2,2-Tetrachloroethane	<4		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	34		4
2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	85

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
nzene	37		4
uene	<4		4
lorobenzene	<4		4
ylbenzene	<4		4
n-Xylene	<4		4
Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	84

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	26		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	36		4
1,2-Dichloroethane	35		4
Trichloroethene	36		4
1,2-Dichloropropane	36		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	38		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	35		4
Tetrachloroethene	37		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	36		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	35		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	37		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320C

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	26		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
,1-Dichloroethene	<4		4
Methylene chloride	<4		4
rans-1,2-Dichloroethene	<4		4
,1-Dichloroethane	<4		4
is-1,2-Dichloroethene	<4		4
Chloroform	<4		4
,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
,2-Dichloroethane	35		4
richloroethene	35		4
,2-Dichloropropane	36		4
romodichloromethane	36		4
s-1,3-Dichloropropene	<4		4
ans-1,3-Dichloropropene	38		4
1,2-Trichloroethane	<4		4
etrachloroethene	35		4
ibromochloromethane	38		4
hlorobenzene	<4		4
romoform	<4		4
1,2,2-Tetrachloroethane	33		4
3-Dichlorobenzene	<4		4
4-Dichlorobenzene	<4		4
2-Dichlorobenzene	34		4
	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		96

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	37		4
oluene	<4		4
hlorobenzene	<4		4
hylbenzene	<4		4
m-Xylene	<4		4
Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0320D

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	36		4
1,2-Dichloroethane	36		4
Trichloroethene	36		4
1,2-Dichloropropane	36		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	39		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	37		4
Tetrachloroethene	38		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	38		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	34		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	36		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	96

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0321A

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Water
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	35		4
1,2-Dichloroethane	35		4
Trichloroethene	35		4
1,2-Dichloropropane	35		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	39		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	36		4
Tetrachloroethene	36		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	36		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	33		4
1,2-Dichlorobenzene	<4		4
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	36		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
LCS0321B

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Water
Units: ug/L
Dilution Factor: 1
Sample Volume: 5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	<4		4
1,2-Dichloroethane	35		4
Trichloroethene	35		4
1,2-Dichloropropane	35		4
Bromodichloromethane	34		4
cis-1,3-Dichloropropene	<4		4
trans-1,3-Dichloropropene	37		4
1,1,2-Trichloroethane	<4		4
Tetrachloroethene	37		4
Dibromochloromethane	36		4
Chlorobenzene	<4		4
Bromoform	<4		4
1,1,2,2-Tetrachloroethane	37		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	<4		4
1,2-Dichlorobenzene	32		4
	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	36		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
p,m-Xylene	<4		4
o-Xylene	<4		4
	<4		4

Surrogate	Percent Recovery
Fluorobenzene	96

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	LCS0321C

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Water
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	5 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<4		4
Vinyl chloride	25		4
Bromomethane/Chloroethane	<4		4
Trichlorofluoromethane	<4		4
1,1-Dichloroethene	<4		4
Methylene chloride	<4		4
trans-1,2-Dichloroethene	<4		4
1,1-Dichloroethane	<4		4
cis-1,2-Dichloroethene	<4		4
Chloroform	<4		4
1,1,1-Trichloroethane	<4		4
Carbon tetrachloride	35		4
1,2-Dichloroethane	34		4
Trichloroethene	35		4
1,2-Dichloropropane	36		4
Bromodichloromethane	<4		4
cis-1,3-Dichloropropene	37		4
trans-1,3-Dichloropropene	<4		4
1,1,2-Trichloroethane	33		4
Tetrachloroethene	35		4
Dibromochloromethane	<4		4
Chlorobenzene	<4		4
Bromoform	33		4
1,1,2,2-Tetrachloroethane	<4		4
1,3-Dichlorobenzene	<4		4
1,4-Dichlorobenzene	32		4
1,2-Dichlorobenzene	<4		4

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	93

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	35		4
Toluene	<4		4
Chlorobenzene	<4		4
Ethylbenzene	<4		4
o,m-Xylene	<4		4
p-Xylene	<4		4

Surrogate	Percent Recovery
Fluorobenzene	90

EPA METHOD 8010/8020 NIST SAMPLE RECOVERY

FASP METHOD 8010/8020 NIST LCS SUMMARY

SITE: Werstern Dry Cleaners

COLUMN: DB-624, Quantitation

DATE		Vinyl chloride	Meth. Chloride	1,1-DCA	Chloroform	TCE	1,2-DCP	PCE	Chlorobenzene	Benzene	Toluene	QC LIMITS	% Surr. Rec.		QC LIMITS
													1-Chloro-2-bp	Fluorobenzene	
03/20/95	NIST0320	80	97	79	84	75	74	74	73	81	72	50-150 %	82	82	65-130%
03/21/95	NIST0321	87	97	81	86	79	78	76	76	84	77	50-150 %	95	100	65-130%
*OUT OF LIMITS:		0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2		0 of 2	0 of 2	

COLUMN: DB-VRX, Confirmation

DATE		Vinyl chloride	Meth. Chloride	1,1-DCA	Chloroform	1,2-DCP	TCE	PCE	Chlorobenzene	Benzene	Toluene	QC LIMITS	% Surr. Rec.		QC LIMITS
													1-Chloro-2-bp	Fluorobenzene	
03/20/95	NIST0320	107	83	78	81	68	76	73	70	83	73	50-150 %	81	82	65-130%
03/21/95	NIST0321	84	87	82	86	80	74	79	76	86	77	50-150 %	98	97	65-130%
*OUT OF LIMITS:		0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2	0 of 2		0 of 2	0 of 2	

00124

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	NIST0320

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	8.1		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	13		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	13		2
cis-1,2-Dichloroethene	<2		2
Chloroform	17		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	17		2
1,2-Dichloropropane	14		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	21		2
Dibromochloromethane	<2		2
Chlorobenzene	13		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		82

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	10		2
Toluene	11		2
Chlorobenzene	12		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		82

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
NIST0321

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	8.8		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	13		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	13		2
cis-1,2-Dichloroethene	<2		2
Chloroform	17		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	17		2
1,2-Dichloropropane	15		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	22		2
Dibromochloromethane	<2		2
Chlorobenzene	14		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	11		2
Toluene	12		2
Chlorobenzene	14		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	100

FASP METHOD CONFIRMATION VERIFICATION

FASP METHOD 8010/8020 CONFIRMATION VERIFICATION SAMPLE RESULT SUMMARY

Site: Western Dry Cleaners

Analyte: Tetrachloroethene (PCE)

Sample ID	Retention Time DB-624	Retention Time Window DB-624	ug/L DB-624	Retention Time DB-VRX	Retention Time Window DB-VRX	ug/L DB-VRX	Percent Difference	Q
WDC-1SV	21.40	21.29-21.61	1.5	21.32	21.22-21.54	1.3	15	
WDC-2SV	21.37	21.29-21.61	1.2	21.30	21.22-21.54	1.0	20	
WDC-4SV	21.36	21.29-21.61	1.1	21.30	21.22-21.54	1.0	10	
WDC-6SV	21.34	21.29-21.61	3.2	21.27	21.22-21.54	2.9	10	
WDC-7SV	21.40	21.29-21.61	4.0	21.34	21.22-21.54	3.9	3	
WDC-9SV	21.40	21.29-21.61	3.5	21.33	21.22-21.54	3.4	3	
WDC-10SV	21.39	21.29-21.61	5.4	21.32	21.22-21.54	5.3	2	
WDC-14SV	21.38	21.29-21.61	1.2	21.31	21.22-21.54	1.0	20	
WDC-15SV	21.39	21.29-21.61	5.3	21.32	21.22-21.54	5.2	2	

Analyte: p,m-Xylene

Sample ID	Retention Time DB-624	Retention Time Window DB-624	ug/L DB-624	Retention Time DB-VRX	Retention Time Window DB-VRX	ug/L DB-VRX	Percent Difference	Q
WDC-3SV	26.56	26.41-26.81	3.3	26.27	26.14-26.54	3.9	18	

Analyte: o-Xylene

Sample ID	Retention Time DB-624	Retention Time Window DB-624	ug/L DB-624	Retention Time DB-VRX	Retention Time Window DB-VRX	ug/L DB-VRX	Percent Difference	Q
WDC-3SV	28.68	28.52-28.96	2.6	28.14	28.00-28.42	3.6	38	P

EPA METHOD 8010/8020 SAMPLE RESULTS

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-1SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	1.5	J	2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-1SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	<2		2
Chlorobenzene	1.3	J	2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		92

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		96

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-2SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	1.2	J	2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	99

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-2SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-VRX	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	1.0	J	2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-3SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		93

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	3.3		2
o-Xylene	2.6	P	2
	Surrogate		Percent Recovery
	Fluorobenzene		82

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-3SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		96

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	3.9		2
o-Xylene	3.6	P	2
	Surrogate		Percent Recovery
	Fluorobenzene		91

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-4SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	1.1	J	2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		92

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		101

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-4SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	<2		2
Chlorobenzene	1.0	J	2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		99

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-5SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Volume:	10 mL
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	103

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-6SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	3.2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		103

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-6SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-VRX	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	2.9		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		97

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		100

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-7SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	4.0		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-7SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-VRX	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	3.9		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		99

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-8SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		91

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		91

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-9SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	3.5		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	96

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-9SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	<2		2
Chlorobenzene	3.4		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		95

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-10SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Column:	DB-624	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	5.4		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		95

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-10SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	5.3		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	98

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	97

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-13SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/21/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/21/95	Units:	ug/L
Preliminary Report Date:	03/22/95	Dilution Factor:	1
Primary Column:	DB-624	Sample Volume:	10 mL
Confirmation Column:	DB-VRX		

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		97

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-14SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/20/95
Sample Analysis Date: 03/20/95
Preliminary Report Date: 03/21/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichlorcethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	1.2	J	2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		91

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		96

SUPERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-14SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date:	03/20/95	Sample Matrix:	Soil Gas
Sample Analysis Date:	03/20/95	Units:	ug/L
Preliminary Report Date:	03/21/95	Dilution Factor:	1
Column:	DB-VRX	Sample Volume:	10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
,1-Dichloroethene	<2		2
Methylene chloride	<2		2
rans-1,2-Dichloroethene	<2		2
,1-Dichloroethane	<2		2
is-1,2-Dichloroethene	<2		2
Chloroform	<2		2
,2-Dichloroethane	<2		2
,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
,2-Dichloropropane	<2		2
richloroethene	<2		2
romodichloromethane	<2		2
is-1,3-Dichloropropene	<2		2
ans-1,3-Dichloropropene	<2		2
,1,2-Trichloroethane	<2		2
ibromochloromethane	<2		2
etrachloroethene	1.0	J	2
hlorobenzene	<2		2
romoform	<2		2
1,2,2-Tetrachloroethane	<2		2
3-Dichlorobenzene	<2		2
4-Dichlorobenzene	<2		2
2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		94

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<2		2
ichloroethene	<2		2
oluene	<2		2
hlorobenzene	<2		2
hylbenzene	<2		2
m-Xylene	<2		2
Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		98

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-15SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-624

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
rans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
rans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	5.3		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
,4-Dichlorobenzene	<2		2
,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	91

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
,m-Xylene	<2		2
-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	94

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-15SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,2-Dichloroethane	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloropropane	<2		2
Trichloroethene	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Dibromochloromethane	<2		2
Tetrachloroethene	5.2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2

Surrogate	Percent Recovery
1-Chloro-2-Bromopropane	95

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Trichloroethene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2

Surrogate	Percent Recovery
Fluorobenzene	93

PERFUND ID NUMBER	CLIENT IDENTIFICATION
9ZZ	WDC-16SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

mple Collection Date:	03/20/95	Sample Matrix:	Soil Gas
mple Analysis Date:	03/20/95	Units:	ug/L
eliminary Report Date:	03/21/95	Dilution Factor:	1
mary Column:	DB-624	Sample Volume:	10 mL
nfirmation Column:	DB-VRX		

thod 8010 Compound	RESULTS	Q	FMDL
chlorodifluoromethane/Chloromethane	<2		2
yl chloride	<2		2
omomethane/Chloroethane	<2		2
chlorofluoromethane	<2		2
-Dichloroethene	<2		2
thylene chloride	<2		2
ns-1,2-Dichloroethene	<2		2
-Dichloroethane	<2		2
-1,2-Dichloroethene	<2		2
loroform	<2		2
,1-Trichloroethane	<2		2
rbon tetrachloride	<2		2
-Dichloroethane	<2		2
chloroethene	<2		2
-Dichloropropane	<2		2
omodichloromethane	<2		2
-1,3-Dichloropropene	<2		2
ns-1,3-Dichloropropene	<2		2
,2-Trichloroethane	<2		2
trachloroethene	<2		2
bromochloromethane	<2		2
lorobenzene	<2		2
omoform	<2		2
,2,2-Tetrachloroethane	<2		2
3-Dichlorobenzene	<2		2
4-Dichlorobenzene	<2		2
2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		98

ETHOD 8020 COMPOUND	RESULTS	Q	FMDL
enzene	<2		2
oluene	<2		2
lorobenzene	<2		2
hylbenzene	<2		2
m-Xylene	<2		2
Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		103

SUPERFUND ID NUMBER
9ZZ

CLIENT IDENTIFICATION
WDC-17SV

REGION 9 FASP VOLATILE ORGANICS RESULTS

Sample Collection Date: 03/21/95
Sample Analysis Date: 03/21/95
Preliminary Report Date: 03/22/95
Primary Column: DB-624
Confirmation Column: DB-VRX

Sample Matrix: Soil Gas
Units: ug/L
Dilution Factor: 1
Sample Volume: 10 mL

Method 8010 Compound	RESULTS	Q	FMDL
Dichlorodifluoromethane/Chloromethane	<2		2
Vinyl chloride	<2		2
Bromomethane/Chloroethane	<2		2
Trichlorofluoromethane	<2		2
1,1-Dichloroethene	<2		2
Methylene chloride	<2		2
trans-1,2-Dichloroethene	<2		2
1,1-Dichloroethane	<2		2
cis-1,2-Dichloroethene	<2		2
Chloroform	<2		2
1,1,1-Trichloroethane	<2		2
Carbon tetrachloride	<2		2
1,2-Dichloroethane	<2		2
Trichloroethene	<2		2
1,2-Dichloropropane	<2		2
Bromodichloromethane	<2		2
cis-1,3-Dichloropropene	<2		2
trans-1,3-Dichloropropene	<2		2
1,1,2-Trichloroethane	<2		2
Tetrachloroethene	<2		2
Dibromochloromethane	<2		2
Chlorobenzene	<2		2
Bromoform	<2		2
1,1,2,2-Tetrachloroethane	<2		2
1,3-Dichlorobenzene	<2		2
1,4-Dichlorobenzene	<2		2
1,2-Dichlorobenzene	<2		2
	Surrogate		Percent Recovery
	1-Chloro-2-Bromopropane		96

METHOD 8020 COMPOUND	RESULTS	Q	FMDL
Benzene	<2		2
Toluene	<2		2
Chlorobenzene	<2		2
Ethylbenzene	<2		2
p,m-Xylene	<2		2
o-Xylene	<2		2
	Surrogate		Percent Recovery
	Fluorobenzene		97

TRAFFIC REPORTS

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Marnie Greenbie Scott Goodwin

PRINT NAME: Marnie Greenbie Scott Goodwin

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-11S	3-20-95	1038		rinsate	2
	WDC-16SV	3-20-95	1007		soil vapor	1
	WDC-1S	3-20-95	1136		soil	1
	WDC-1D	3-20-95	1150		soil	1
	WDC-2S	3-20-95	1230		soil	1
	WDC-2SV	3-20-95	1220		soil vapor 2.5 NWM	1
	WDC-4D	3-20-95	1315		soil	1
	WDC-4DV	3-20-95	1257		soil vapor 1.8 NWM	1
✓ WDC-14H	WDC-14DV	3-20-95	1256		soil vapor 1.8 NWM	1
	WDC-1SV	3-20-95	1052		soil vapor 1.0 NWM	1
					TOTAL NUMBER OF CONTAINERS	11

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Marnie Greenbie	Marnie Greenbie			3/20/95 1427 2:27	
		RJ White	R.J. White	3/20/95 1430	

Final Disposal; Date & Time disposed: _____ Signature _____

00156

ADHS Laboratory 128 (10/90)

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Marnie Greenbie Scott Goodwin

PRINT NAME: Marnie Greenbie Scott Goodwin

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-55V	3-20-95	1393		soil vapor HNu 4.5	
	WDC-5D	3-20-95	1359		soil	
	WDC-60V	3-20-95	1414		soil vapor HNu 1.5	
	WDC-6S	3-20-95	1425		soil	
					TOTAL NUMBER OF CONTAINERS	

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Scott Goodwin	Scott Goodwin			3-20-95/1521	
		R.J. White	R.J. White	3/20/95 1522	

Final Disposal; Date & Time disposed: _____ Signature _____

00157

STATE OF ARIZONA
DEPARTMENT OF HEALTH SERVICES
STATE LABORATORY

CHAIN OF CUSTODY RECORD

DATE LOGGED _____
FOR LABORATORY USE ONLY

AGENCY NAME: ADEQ

SAMPLER'S SIGNATURE: Scott Goodwin

PRINT NAME: Scott Goodwin

FOR SAMPLER'S USE ONLY

SAMPLES OFFERED ☐ SAMPLES REFUSED ☐

SAMPLES OFFERED TO/REFUSED BY:

Signature _____ Title _____ Date _____

STATE LAB NUMBER	SAMPLE NUMBER	COLLECTION Date	Time	Location	SAMPLE DESCRIPTION AND COMMENTS	NUMBER OF CONTAINERS
	WDC-175V	3-21-95	0936		soil vapor	
	WDC-75V	3-21-95	0952		" PID 1.3	
	WDC-65V	3-21-95	1022		" PID 1.2	
	WDC-95V	3-21-95	1056		" PID 0.8	
	WDC-105V	3-21-95	1232		" PID 1.2	
	WDC-155V	3-21-95	1236		" PID 1.2	
	WDC-135V	3-21-95	1205		" ambient PID 1.6	
	WDC-35V	3-21-95	1337		" PID 1.0	

TOTAL NUMBER OF CONTAINERS

Relinquished By: (Signature)	(Print name)	Received By: (Signature)	(Print name)	Date/Time	Comments
Scott Goodwin	Scott Goodwin			3-21-95/1457	
		RJ White	R.J. White	3/21/95 1500	

Final Disposal: Date & Time disposed: _____ Signature _____

00158

ADHS Laboratory 128 (10/90)

SAMPLE LOG-IN

SITE: Phoenix, Az

ANALYST: RJW

DATE	SAMPLE ID	MATRIX	ANALYSIS	INTL.	COMMENT
3/20/95	ASC-104	water	8010/8020	RJW	
	ASC-102				
	ASC-101				
	ASC-105				QA/QC
	ASC-105				
	WDC-115	RINSATE			
	WDC-16SV	SOIL Vapor		MWD	
	WDC-15	SOIL			
	WDC-1D	SOIL			
	WDC-25	SOIL			
	WDC-23V	SOIL Vapor			
	WDC-4D	SOIL			
	WDC-4SV	SOIL VAPOR			
	WDC-14SV	SOIL VAPOR			
	WDC-1SV	SOIL VAPOR			
	WDC-5SV	SOIL GAS			
	WDC-5D	SOIL			
	WDC-6SV	SOIL GAS			
	WDC-6S	SOIL			
3/21/95	WDC-17SV	SOIL GAS			
	WDC-7SV				
	-8SV				
	-9SV				
	-10SV				
	-15SV				
	-13SV				
	-3SV				
	-12S	rinsate			
	-7S	soil			
	-8S				
	-9S				
	-10S				QA/QC
	-15S				
	-03S				
	-14S				

SAMPLE RUN LOG

SITE: Phoenix, AZ

METHOD: Mod. 8010/8020

ANALYST: RSW

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
3/6/95	RSW	1	M19A001	ICAL1	20ul A-618 / 20ul A-626 / .5ml H_2O	
				ICAL2	A-619 /	
				ICAL3	A-620 /	
				ICAL4	A-621 /	
				ICAL5	A-622 /	

00162

SITE: Phoenix A &
METHOD: 8010/8020

ANALYST: [illegible]

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
3/20/95	[illegible]	1	M20A001	CCAL	20ml A-621 / 20ml A-626 / 5ml H_2O	
		2	002	Blank	20ml A-616 / 20ml A-626 / 5ml H_2O	
		3	003	LCS	20ml A-625 / 20ml A-626 / 20ml A-616 / 5ml H_2O	
		4	004	MRS.T	10ml Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		5	005	ASC-101	~5g Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		6	006	ASC-102		
		7	007	ASC-10[illegible]		
		8	008	ASC-103		
		9	009	ASC-105		
		10	010	ASC-101 MS	~5g / 20 ml A-625 / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		11	011	ASC-101 MSD	" " " "	
		12	012	WOC-15V	10ml samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		13	013	WOC-9SV		
		14	014	WOC-14SV		
		15	015	LCS	20ml A-625 / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		16	016	WOC-25V	10 ml samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		17	017	WOC-16SV	" " " "	
		18	018	WOC-11S	~~~~5g / 20ml A-616 / 20ml A-626 / ~~5ml H_2O~~	
		19	019	WOC-15	~5g / " " / 5ml H_2O	
		20	020	WOC-10		
		21	021	WOC-25		
		22	022	WOC-40		
		23	023	WOC-5SV	10ml Samp / 20ml A-616 / 20ml A-626 / 5ml H_2O	
		24	024	WOC-6SV LCS	" " " " "	
		25	025	WOC-5D	~5g / 20ml A-616 / 20ml A-626 / 5ml H_2O	

00163

SITE: Phoenix, AZ
METHOD: 8010/8020

ANALYST: YMP

Date	Int.	Run	Nelson Cycle	Sample ID	Sample Preparation	Comment
~~3/20/95~~	~~BSW~~	~~29~~	~~029~~	~~LCS~~		
		~~30~~	~~030~~	~~Blank~~		
3/21/95	YMP	1	MZ1001	CCAL	20ul A-621/20ul A-626/5ml H_2O	
		2	002	BLANK	20ul A-616/20ul A-626/5ml H_2O	
		3	003	LCS	20ul A-625/20ul A-626/5ml H_2O/20ul A-616	
		4	004	NIST	10ml samp/20ul A-616/20ul A-626/5ml H_2O	
		5	5	WDL-17SV		
		6	6	WDL-7SV		
		7	7	WDL-8SV		
		8	8	WDL-9SV		
		9	9	WDL-10SV		
		10	10	WDL-15SV		
		11	11	WDL-13SV		
		12	12	WDL-3SV		
		13	13	WDL-12S	~~5ml~~ ~~w5g~~/20ul A-616/20ul A-626/~~5ml H_2O~~	
		14	14	WDL-7S	w5g/" " " /5ml H_2O	
		15	15	LCS	20ul A-625/20ul A-616/20ul A-626/5ml H_2O	
		16	16	WDL-8S	w5g/20ul A-616/20ul A-626/5ml H_2O	
		17	17	WDL-9S		
		18	18	WDL-10S		
		19	19	WDL-15S		
		20	20	WDL-03S		
		21	21	WDL-14S		
		22	22	WDL-9S MS	w5g/20ul A-625/20ul A-616/20ul A-626/5ml H_2O	
		23	23	WDL-9S MSD	w5g/" " " "	
		24	24	LCS	20ul A-625/20ul A-616/20ul A-626/5ml H_2O	
		25	25	Blank	20ul A-616/20ul A-626/5ml H_2O	

00164

STANDARD LOG

NO. A-614 DATE 2/21/95 / 2/26/95 ANALYST BK

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL(ML)	FINAL CONC. NG/UL
1.	LCS (working)	A-613	20	1ml	2 ml	10 ug/ml
2.	~~working~~	~~A613~~	~~20 ug/ml~~	~~5ml~~	~~10ml~~	~~10 ug/ml~~ BK
3.						
4.						
5.						
6.						
7.						
8.						
9.						

NO. A-615 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL(ML)	FINAL CONC. NG/UL
1.	Surrogate	Stock	2000	1 mL	10	200
2.	1-Chloro-2-BP					
3.	Fluorobenz					
4.						
5.						
6.						
7.						
8.						
9.						

M-502-IS
1-Chloro-2-bromopro
2.0 mg/mL in MeOH
Lot 104-152
AccuStanda

NO. A-616 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL(ML)	FINAL CONC. NG/UL
1.	Surrogate	A-615	200	100	2	10
2.	(working)			~~700~~	~~3~~	~~40~~
3.				~~375~~	~~5~~	~~15~~ RSW
4.						
5.	3/20/95					
6.				250	5	10
7.	3/24/95					
8.				250	5	10
9.						

NO. A-617 DATE 3/12/95 ANALYST RTW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	M601/602	Stock	200	1mL	10	20
2.	M502/601B					
3.	M502-28					
4.	M505-60					
5.	A-615 (surrogate)	A-615				
6.						

M-502-28
cis-1,2-Dichloroethe
0.2 mg/mL in MeOH
Lot 025-145

M-601/602
Purgeable Halocarbons
0.2 mg/mL in MeOH
Lot 124-066

M-502-60
o,m,p-Xylenes Mix
0.2 mg/mL in MeOH
Lot 023-105

M-502B/M-601B
Volatile Organic Cmp
0.2 mg/mL in MeOH
Lot 025-252

AccuStandard AccuStandard AccuStandard AccuStandard

NO. A-618 → A-622 DATE 3/12/95 ANALYST RTW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	A-618	A-617	20 ~~2~~ RTW	100	2	1
2.	A-619			200		2
3.	A-620			500		5
4.	A-621			1000		10
5.	A-622			2000		20
6.						
7.						
8.						
9.						

NO. A-623 DATE 3/12/95 ANALYST RTW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	4-BFB (I.S.)	Stock	~~150~~	~~1mL~~	~~10~~ RTW	~~15~~
2.	Stock		2000	~~500~~	~~5~~ RTW	
3.						
4.	Also working			1mL	10	200
5.	in 2mL vial					
6.						
7.						
8.						
9.						

CLP-004-8nx
p-Bromofluorobenzene
2.0 mg/mL in MeOH
Lot 124-463

AccuStandard

NO. A-624 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	LCS (Stock)	Stock	200	1 mL	10	20
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

CLP-LCS-V
Laboratory Control Sample
0.2 mg/mL in MeOH
Lot 124-192
AccuStandard

NO. A-625 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT UL	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	LCS	A-624	20	1 mL	2	10
2.	(working)					
3.						
4.						
5.	3/24/95			1 mL	2	10
6.						
7.						
8.						
9.						

NO. A-626 DATE 3/12/95 ANALYST RSW

	COMPOUND	PARENT SOL NUMBER	PARENT NG/UL	ALIQUOT ~~UL~~	DILUTION VOL (ML)	FINAL CONC. NG/UL
1.	4-BFB (I.S.)	A-623	200	~~2.5 mL~~	RSW	
2.						
3.	working			~~200~~	~~2~~	
4.				500	5	20
5.						
6.	3/24/95			500	5	20
7.						
8.						
9.						

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

SITE:	**ADEQ, Aladdin Cleaners**
SAMPLE DELIVERY GROUP:	**NA**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**ESTW-9B-4294**
ANALYSIS PERFORMED:	**GC/MS Volatiles-Soil vapor**
DATE SUBMITTED:	**March 29, 2001**
SAMPLE NUMBERS:	

Sample ID	Sample ID	Sample ID	Sample ID
AC-5SV	AC-12SV	AC-13SV	AC-18SV
AC-11SV	AC-4SV	AC-1SV	AC-19SV
AC9SV	AC-15SV	AC-16SV	
AC8SV	AC-3SV	AC-7SV	
AC-10SV	AC-2SV	AC-6SV	

GENERAL COMMENTS

Seventeen (17) soil vapor samples were received at the EPA Region 9 FASP Mobile Laboratory from 03/01/01 to 03/05/01 from the ADEQ, Aladdin Cleaners project.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 902, FASP Volatile Organic Compound Analysis by GC/MS.

SAMPLE RECEIPT AND PRESERVATION

Samples were hand delivered. No issues related to shipping were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments may appear on the Summary of Analytical Results:

A The amount detected is less than the quantitation limit, and is an estimated value.

B All MS/MSD results of samples AC-3SV and AC-19SV were within QC limits with the following exceptions:

Sample ID	Laboratory Sample ID	Analyte	MS %Rec	MSD % Rec	QC Limit	RPD	QC Limit
AC-3SV	NA	Benzene				26	11
AC-19SV	NA	Benzene				13	11

The results for benzene in samples AC-3SV and AC-19SV were flagged as estimated (J).

No target analytes were detected in the method blanks associated with these samples.

All surrogate recoveries were within QC limits.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits.

All samples were analyzed within the holding time of 12 hours..

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed toAwinash Manmade at (510) 412-2368.

Glossary

Method Blanks
A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks
A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates
Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis
Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards
Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples
Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

ANALYTICAL COMMENTS

Example calculation using data for tetrachloroethene obtained for sample AC-2SV analyzed on 03/02/01:

Calculations:

$$\text{Conc. } (\mu g/L) = A_x * AMT_{IS} * DF / (A_{IS} * RRF)$$
$$= 272733 * 5\ \mu g/L * 1 / (203249 * 0.366)$$
$$= 18.33\ \mu g/L \approx 18\ \mu g/L$$

where

A_x = area of the characteristic ion of the compound
AMT_{IS} = concentration of internal standard in $\mu g/L$ (5 $\mu g/L$)
DF = dilution factor
A_{IS} = area of the characteristic ion of the associated internal standard
RRF = analyte's relative response factor from the daily calibration

Instrument Calibration:

The initial calibration demonstrates that the instrument is capable of meeting the minimum relative response factors (RRFs) and has a linear calibration curve.

All analytes in the initial calibrations were within QC limits.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

All continuing calibrations were within QC limits.

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Aladdin
SDG: NA
Date: 03/29/01

Analysis: GC/MS Volatiles
Matrix: Soil Gas

Sample No.	N/A				N/A				N/A				N/A				N/A			
Sample ID	AC-11SV				AC-5SV				AC-9SV				AC-8SV				AC-12SV			
Date of Collection	03/01/01				03/01/01				03/01/01				03/01/01				03/02/01			
Dilution	1				1				1				1				1			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
trans-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
1,1-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
cis-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
Chloroform	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
1,1,1-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Carbon Tetrachloride	1	U			1	U			1	U			1	U			1	U		
Benzene	1	U			1	U			1	U			1	U			1	U		
Trichloroethene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Bromodichloromethane	1	U			1	U			1	U			1	U			1	U		
cis-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
trans-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
1,1,2-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Dibromochloromethane	1	U			1	U			1	U			1	U			1	U		
Toluene	1	U			1	U			1	U			1	U			1	U		
1,3-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Tetrachloroethene	1	U			11				9				18				1	U		
Chlorobenzene	1	U			1	U			1	U			1	U			1	U		
Ethyl Benzene	1	U			1	U			1	U			1	U			1	U		
Xylene (para&meta-)	1	U			1	U			1	U			1	U			1	U		
Xylene (ortho-)	1	U			1	U			1	U			1	U			1	U		
Styrene	1	U			1	U			1	U			1	U			1	U		
Bromoform	1	U			1	U			1	U			1	U			1	U		
1,1,2,2-Tetrachloroethane	1	U			1	U			1	U			1	U			1	U		
1,3-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,4-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Aladdin
SDG: NA
Date: 03/29/01

Analysis: GC/MS Volatiles
Matrix: Soil Gas

Sample No.	N/A				N/A				N/A				N/A				N/A			
Sample ID	AC-10SV				AC-4SV				AC-15SV				AC-3SV				AC-2SV			
Date of Collection	03/02/01				03/02/01				03/02/01				03/02/01				03/02/01			
Dilution	1				1				1				1				1			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
trans-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
1,1-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
cis-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
Chloroform	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
1,1,1-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Carbon Tetrachloride	1	U			1	U			1	U			1	U			1	U		
Benzene	1	U			1	U			1	U			1	U	J	B	1	U		
Trichloroethene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Bromodichloromethane	1	U			1	U			1	U			1	U			1	U		
cis-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
trans-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
1,1,2-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Dibromochloromethane	1	U			1	U			1	U			1	U			1	U		
Toluene	1	U			1	U			1	U			1	U			1	U		
1,3-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Tetrachloroethene	1	U			7				7				0.8		J	A	5			
Chlorobenzene	1	U			1	U			1	U			1	U			1	U		
Ethyl Benzene	1	U			1	U			1	U			1	U			1	U		
Xylene (para&meta-)	1	U			1	U			1	U			1	U			1	U		
Xylene (ortho-)	1	U			1	U			1	U			1	U			1	U		
Styrene	1	U			1	U			1	U			1	U			1	U		
Bromoform	1	U			1	U			1	U			1	U			1	U		
1,1,2,2-Tetrachloroethane	1	U			1	U			1	U			1	U			1	U		
1,3-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,4-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Aladdin
SDG: NA
Date: 03/29/01

Analysis: GC/MS Volatiles
Matrix: Soil Gas

Sample No.	N/A				N/A				N/A				N/A				N/A			
Sample ID	AC-13SV				AC-1SV				AC-16SV				AC-7SV				AC-6SV			
Date of Collection	03/05/01				03/05/01				03/05/01				03/05/01				03/05/01			
Dilution	1				1				1				1				1			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result	Q	Cmt		Result	Q	Cmt		Result	Q	Cmt		Result	Q	Cmt		Result	Q	Cmt	
1,1-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
trans-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
1,1-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
cis-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
Chloroform	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
1,1,1-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Carbon Tetrachloride	1	U			1	U			1	U			1	U			1	U		
Benzene	1	U			1	U			1	U			1	U			1	U		
Trichloroethene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Bromodichloromethane	1	U			1	U			1	U			1	U			1	U		
cis-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
trans-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
1,1,2-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Dibromochloromethane	1	U			1	U			1	U			1	U			1	U		
Toluene	1	U			1	U			1	U			1	U			1	U		
1,3-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Tetrachloroethene	1	U			6				1	U			70				59			
Chlorobenzene	1	U			1	U			1	U			1	U			1	U		
Ethyl Benzene	1	U			1	U			1	U			1	U			1	U		
Xylene (para&meta-)	1	U			1	U			1	U			1	U			1	U		
Xylene (ortho-)	1	U			1	U			1	U			1	U			1	U		
Styrene	1	U			1	U			1	U			1	U			1	U		
Bromoform	1	U			1	U			1	U			1	U			1	U		
1,1,2,2-Tetrachloroethane	1	U			1	U			1	U			1	U			1	U		
1,3-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,4-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Aladdin
SDG: NA
Date: 03/29/01

Analysis: GC/MS Volatiles
Matrix: Soil Gas

Sample No.	N/A				N/A				Method Blank				Method Blank				Method Blank			
Sample ID	AC-18SV				AC-19SV				MGF0301				MGF0302				MGF0305			
Date of Collection	03/05/01				03/05/01				NA				NA				NA			
Sample dry weight(g)	1				1				1				1				1			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
trans-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
1,1-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
cis-1,2-Dichloroethene	1	U			1	U			1	U			1	U			1	U		
Chloroform	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloroethane	1	U			1	U			1	U			1	U			1	U		
1,1,1-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Carbon Tetrachloride	1	U			1	U			1	U			1	U			1	U		
Benzene	1	U			1	U	J	B	1	U			1	U			1	U		
Trichloroethene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Bromodichloromethane	1	U			1	U			1	U			1	U			1	U		
cis-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
trans-1,3-Dichloropropene	1	U			1	U			1	U			1	U			1	U		
1,1,2-Trichloroethane	1	U			1	U			1	U			1	U			1	U		
Dibromochloromethane	1	U			1	U			1	U			1	U			1	U		
Toluene	1	U			1	U			1	U			1	U			1	U		
1,3-Dichloropropane	1	U			1	U			1	U			1	U			1	U		
Tetrachloroethene	70				70				1	U			1	U			1	U		
Chlorobenzene	1	U			1	U			1	U			1	U			1	U		
Ethyl Benzene	1	U			1	U			1	U			1	U			1	U		
Xylene (para&meta-)	1	U			1	U			1	U			1	U			1	U		
Xylene (ortho-)	1	U			1	U			1	U			1	U			1	U		
Styrene	1	U			1	U			1	U			1	U			1	U		
Bromoform	1	U			1	U			1	U			1	U			1	U		
1,1,2,2-Tetrachloroethane	1	U			1	U			1	U			1	U			1	U		
1,3-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,4-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		
1,2-Dichlorobenzene	1	U			1	U			1	U			1	U			1	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Aladdin
SDG: NA
Date: 03/29/01

Analysis: GC/MS Volatiles
Matrix: Soil Gas

Sample No.	N/A			
Sample ID	AC-13SV			
Date of Collection	03/05/01			
Sample dry weight(g)	1			
Units	ug/L			
Analyte	Result		Q	Cmt
1,1-Dichloroethene	1			
trans-1,2-Dichloroethene	1			
1,1-Dichloroethane	1			
cis-1,2-Dichloroethene	1			
Chloroform	1			
1,2-Dichloroethane	1			
1,1,1-Trichloroethane	1			
Carbon Tetrachloride	1			
Benzene	1			
Trichloroethene	1			
1,2-Dichloropropane	1			
Bromodichloromethane	1			
cis-1,3-Dichloropropene	1			
trans-1,3-Dichloropropene	1			
1,1,2-Trichloroethane	1			
Dibromochloromethane	1			
Toluene	1			
1,3-Dichloropropane	1			
Tetrachloroethene	1			
Chlorobenzene	1			
Ethyl Benzene	1			
Xylene (para&meta-)	1			
Xylene (ortho-)	1			
Styrene	1			
Bromoform	1			
1,1,2,2-Tetrachloroethane	1			
1,3-Dichlorobenzene	1			
1,4-Dichlorobenzene	1			
1,2-Dichlorobenzene	1			

Q-Laboratory Data Qualifiers

U-This compound was analyzed for, but not detected.

MASTER FILE voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

SITE:	**ADEQ - Alladin Cleaners**
SAMPLE DELIVERY GROUP:	**NA**
PROGRAM:	**Superfund FASP**
DOCUMENT CONTROL #:	**ESTW-9B-4291**
ANALYSIS PERFORMED:	**GC/MS Volatiles/902**
DATE SUBMITTED:	**March 29, 2001**
SAMPLE NUMBERS:	

Sample ID	Sample ID
AC-5S	AC-9S
AC-8S	AC-3S
AC-2S	AC-4S
AC-10S	AC-1S
AC-6S	AC-17S
AC-7S	

GENERAL COMMENTS

Eleven (11) soil samples were received at the EPA Region 9 FASP Mobile Laboratory from 03/01/01 to 03/05/01 from the ADEQ-Alladin Superfund project.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 902, FASP Volatile Organic Compound Analysis by GC/MS.

SAMPLE RECEIPT AND PRESERVATION

No issues related to shipping and preservation were encountered with this/these sample/samples.

QA/QC AND ANALYTICAL COMMENTS

The following comment appears on the Summary of Analytical Results:

A The amount detected is less than the quantitation limit, and is an estimated value.

No target analytes were detected in the method blanks associated with these samples.

All surrogate recoveries were within QC limits.

All MS/MSD results were within QC limits.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits.

All samples were analyzed within the holding time.

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed to Awinash manmade at (510) 412-2368.

Glossary

Method Blanks

A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks

A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis

Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards

Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples

Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

ANALYTICAL COMMENTS

Example calculation using data for Tetrachloroethene obtained for sample AC-2S analyzed on 03/02/01:

Results for target analytes are calculated using the following equation:

$$\text{Conc. } (\mu g/Kg) = A_x * AMT_{IS} / (A_{IS} * RRF * W * D)$$
$$= 6423 * 250 \text{ ng} / (204368 * 0.405 * 6.06g * 0.94)$$
$$= 3.40 \ \mu g/kg \approx 3 \ \mu g/kg$$

where:

A_x = area of the characteristic ion of the compound
AMT_{IS} = amount of internal standard in ng (250 ng)
D = dry weight factor ((100 - %Moisture)/100)
W = weight of sample in grams
A_{IS} = area of the characteristic ion of the associated internal standard
RRF = analyte's relative response factor from the daily calibration

Instrument Calibration:

The initial calibration demonstrates that the instrument is capable of meeting the minimum relative response factors (RRFs) and has a linear calibration curve. For Method 524.2 the average response factor from the initial calibration is used to quantitate sample results.

All analytes in the initial calibrations were within QC limits.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

All continuing calibrations were within QC limits.

adeq-alladin.WPD

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Alladin
SDG: NA
Date: 03/28/01

Analysis: GC/MS Volatiles-902
Matrix: Soil

Station Location																				
Sample ID	AC-5S				AC-9S				AC-8S				AC-3S				AC-2S			
Lab Sample ID	NA				NA				NA				NA				NA			
Sample dry weight(g)	5.60				4.39				4.70				4.39				5.70			
Date of Collection	03/01/01				03/02/01				03/01/01				03/02/01				03/02/01			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
trans-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
1,1-Dichloroethane	5	U			5	U			5	U			5	U			5	U		
cis-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
Chloroform	5	U			5	U			5	U			5	U			5	U		
1,2-Dichloroethane	5	U			5	U			5	U			5	U			5	U		
1,1,1-Trichloroethane	5	U			5	U			5	U			5	U			5	U		
Carbon Tetrachloride	5	U			5	U			5	U			5	U			5	U		
Benzene	5	U			5	U			5	U			5	U			5	U		
Trichloroethene	5	U			5	U			5	U			5	U			5	U		
1,2-Dichloropropane	5	U			5	U			5	U			5	U			5	U		
Bromodichloromethane	5	U			5	U			5	U			5	U			5	U		
cis-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5	U		
trans-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5	U		
1,1,2-Trichloroethane	5	U			5	U			5	U			5	U			5	U		
Dibromochloromethane	5	U			5	U			5	U			5	U			5	U		
Toluene	5	U			5	U			5	U			5	U			5	U		
1,3-Dichloropropane	5	U			5	U			5	U			5	U			5	U		
Tetrachloroethene	5	U			5	U			5	U			5	U			3		J	A
Chlorobenzene	5	U			5	U			5	U			5	U			5	U		
Ethyl Benzene	5	U			5	U			5	U			5	U			5	U		
Xylene (para & meta-)	5	U			5	U			5	U			5	U			5	U		
Xylene (ortho-)	5	U			5	U			5	U			5	U			5	U		
Styrene	5	U			5	U			5	U			5	U			5	U		
Bromoform	5	U			5	U			5	U			5	U			5	U		
1,1,2,2-Tetrachloroethane	5	U			5	U			5	U			5	U			5	U		
1,3-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		
1,4-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		
1,2-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Alladin
SDG: NA
Date: 03/28/01

Analysis: GC/MS Volatiles-902
Matrix: Soil

Station Location																				
Sample ID	AC-4S				AC-10S				AC-1S				AC-6S				AC-17S			
Lab Sample ID	NA				NA				NA				NA				NA			
Sample dry weight(g)	5.20				4.83				5.46				4.62				5.45			
Date of Collection	03/02/01				03/02/01				03/02/01				03/02//01				03/02/01			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
trans-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
1,1-Dichloroethane	5	U			5	U			5	U			5	U			5	U		
cis-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5	U		
Chloroform	5	U			5	U			5	U			5	U			5	U		
1,2-Dichloroethane	5	U			5	U			5	U			5	U			5	U		
1,1,1-Trichloroethane	5	U			5	U			5	U			5	U			5	U		
Carbon Tetrachloride	5	U			5	U			5	U			5	U			5	U		
Benzene	5	U			5	U			5	U			5	U			5	U		
Trichloroethene	5	U			5	U			5	U			5	U			5	U		
1,2-Dichloropropane	5	U			5	U			5	U			5	U			5	U		
Bromodichloromethane	5	U			5	U			5	U			5	U			5	U		
cis-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5	U		
trans-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5	U		
1,1,2-Trichloroethane	5	U			5	U			5	U			5	U			5	U		
Dibromochloromethane	5	U			5	U			5	U			5	U			5	U		
Toluene	5	U			5	U			5	U			5	U			5	U		
1,3-Dichloropropane	5	U			5	U			5	U			5	U			5	U		
Tetrachloroethene	5	U			5	U			3		J	A	5	U			5	U		
Chlorobenzene	5	U			5	U			5	U			5	U			5	U		
Ethyl Benzene	5	U			5	U			5	U			5	U			5	U		
Xylene (para & meta-)	5	U			5	U			5	U			5	U			5	U		
Xylene (ortho-)	5	U			5	U			5	U			5	U			5	U		
Styrene	5	U			5	U			5	U			5	U			5	U		
Bromoform	5	U			5	U			5	U			5	U			5	U		
1,1,2,2-Tetrachloroethane	5	U			5	U			5	U			5	U			5	U		
1,3-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		
1,4-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		
1,2-Dichlorobenzene	5	U			5	U			5	U			5	U			5	U		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: NA
Site: ADEQ-Alladin
SDG: NA
Date: 03/28/01

Analysis: GC/MS Volatiles-902
Matrix: Soil

Station Location																						
Sample ID	AC-7S				Method Blank				Method Blank				Method Blank				Quantitation Limits			
Lab Sample ID	NA				MSG0301A				MSG0302				MSG0305				NA			
Sample dry weight(g)	5.22				5.00				5.00				5.00				NA			
Date of Collection	03/02/01				NA				NA				NA				NA			
Units	ug/L				ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
1,1-Dichloroethene	5	U			5	U			5	U			5	U			5			
trans-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5			
1,1-Dichloroethane	5	U			5	U			5	U			5	U			5			
cis-1,2-Dichloroethene	5	U			5	U			5	U			5	U			5			
Chloroform	5	U			5	U			5	U			5	U			5			
1,2-Dichloroethane	5	U			5	U			5	U			5	U			5			
1,1,1-Trichloroethane	5	U			5	U			5	U			5	U			5			
Carbon Tetrachloride	5	U			5	U			5	U			5	U			5			
Benzene	5	U			5	U			5	U			5	U			5			
Trichloroethene	5	U			5	U			5	U			5	U			5			
1,2-Dichloropropane	5	U			5	U			5	U			5	U			5			
Bromodichloromethane	5	U			5	U			5	U			5	U			5			
cis-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5			
trans-1,3-Dichloropropene	5	U			5	U			5	U			5	U			5			
1,1,2-Trichloroethane	5	U			5	U			5	U			5	U			5			
Dibromochloromethane	5	U			5	U			5	U			5	U			5			
Toluene	5	U			5	U			5	U			5	U			5			
1,3-Dichloropropane	5	U			5	U			5	U			5	U			5			
Tetrachloroethene	5	U			5	U			5	U			5	U			5			
Chlorobenzene	5	U			5	U			5	U			5	U			5			
Ethyl Benzene	5	U			5	U			5	U			5	U			5			
Xylene (para & meta-)	5	U			5	U			5	U			5	U			5			
Xylene (ortho-)	5	U			5	U			5	U			5	U			5			
Styrene	5	U			5	U			5	U			5	U			5			
Bromoform	5	U			5	U			5	U			5	U			5			
1,1,2,2-Tetrachloroethane	5	U			5	U			5	U			5	U			5			
1,3-Dichlorobenzene	5	U			5	U			5	U			5	U			5			
1,4-Dichlorobenzene	5	U			5	U			5	U			5	U			5			
1,2-Dichlorobenzene	5	U			5	U			5	U			5	U			5			

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

Columbia Analytical Services INC.
An Employee-Owned Company

RECEIVED
FEB 16 2004
GEOTRANS

February 12, 2004

Paul Plato
GeoTrans
4665 S. Ash Avenue, Suite G-1
Tempe, AZ 85285

Re: Western Ave.

Dear Paul:

Enclosed are the results of the samples submitted to our laboratory on January 30, 2004. For your reference, these analyses have been assigned our service request number X2400084.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Columbia Analytical Services, Inc. is certified for environmental analyses by the Arizona Department of Health Services (Certificate #AZ0497).

Please call if you have any questions. My extension is 223.

Respectfully submitted,

Columbia Analytical Services, Inc.

Tracy L. Dutton

Tracy L. Dutton
Laboratory Director

TLD/lm

NELAC Accredited
3902 East University Drive, Suite 4 Phoenix, AZ 85034
(602) 437-2001 (800) 695-7222x09 Fax (602) 437-5308
ACIL Seal of Excellence Laboratory

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	GeoTrans	**Service Request No.:**	X2400084
Project:	Western Ave.	**Date Received:**	1/30/04
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Matrix spike (XWG0400215-2) recovery of Bromoform, Method 8260B, was low. The matrix spike recovery was acceptable.

Approved by JD **Date** 2-12-04

ARIZONA DATA QUALIFIERS

Method Blank:

B1	Target analyte detected in method blank at or above the method reporting limit.
B2	Non-target analyte detected in method blank and sample, producing interference.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B4	Target analyte detected in blank at/above method acceptance criteria.
B5	Target analyte detected in method blank at or above the method reporting limit, but below trigger level or MCL.
B6	Target analyte detected in calibration blank at or above the method reporting limit, but below trigger level or MCL.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the method blank.

Confirmation:

C1	Confirmatory analysis not performed as required by the method.
C2	Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data.
C3	Qualitative confirmation performed. See case narrative.
C4	Confirmatory analysis was past holding time.
C5	Confirmatory analysis was past holding time. Original result not confirmed.

Dilution:

D1	Sample required dilution due to matrix interference. See case narrative.
D2	Sample required dilution due to high concentration of target analyte.
D3	Sample dilution required due to insufficient sample.
D4	Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed.

Estimated concentration:

E1	Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E3	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL).
E5	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis.
E6	Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria.
E7	Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria.

Hold Time:

H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.

Laboratory fortified blank/blank spike:

L1	The associated blank spike recovery was above laboratory acceptance limits. See case narrative.

L2 The associated blank spike recovery was below laboratory acceptance limits. See case narrative.
L3 The associated blank spike recovery was above method acceptance limits. See case narrative.
L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.

Matrix spike:

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.
M2 Matrix spike recovery was low, the method control sample recovery was acceptable.
M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.
M5 Analyte concentration was determined by the method of standard addition (MSA).
M6 Matrix spike recovery was high. Data reported per ADEQ policy 0154.000.
M7 Matrix sipke recovery was low. Data reported per ADEQ policy 0154.000.

General:

N1 See case narrative.
N2 See corrective action report.

Sample quality:

Q1 Sample integrity was not maintained. See case narrative.
Q2 Sample received with head space.
Q3 Sample received with improper chemical preservation.
Q4 Sample received and analyzed without chemical preservation.
Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.
Q6 Sample was received above recommended temperature.
Q7 Sample inadequately dechlorinated.
Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.
Q9 Insufficient sample received to meet QC requirements.
Q10 Sample received in inappropriate sample container.
Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

Duplicates:

R1 RPD exceeded the method control limit. See case narrative.
R2 RPD exceeded the laboratory control limit. See case narrative.
R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.
R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R8 Sample RPD exceeded the method control limit.
R9 Sample RPD exceeded the laboratory control limit.

Surrogate:

S1 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
S2 Surrogate recovery was above laboratory and method acceptance limits.

S3 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample.

S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

S5 Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

S7 Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.

S8 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable.

S9 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

S11 Surrogate recovery was high. Data reported per ADEQ policy 0154.000.

S12 Surrogate recovery was low. Data reported per ADEQ policy 0154.000.

Method/analyte discrepancies:

T1 Method promulgated by EPA, but not ADHS at this time.

T2 Cited ADHS licensed method does not contain this analyte as part of method compound list.

T3 Method not promulgated either by EPA or ADHS.

T4 Tentatively identified compound. Concentration is estimated and based on the closest internal standard.

Calibration verification:

V1 CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

V2 CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample.

V3 CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative.

V4 CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample.

V5 CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B.

V6 Data reported from one-point calibration criteria per ADEQ policy 0155.000.

V7 Calibration verification recovery was above the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

V8 Calibration verification recovery was below the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

Calibration:

W1 The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria as specified in EPA method 8000B.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The reported value is estimated because of the presence of matrix interference.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Client: GeoTrans
Project: Western Ave.

Service Request: X2400084

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
EB-1	X2400084-001	01/29/2004	01/30/2004
MW-1	X2400084-002	01/29/2004	01/30/2004
MW-2	X2400084-003	01/29/2004	01/30/2004
MW-3	X2400084-004	01/29/2004	01/30/2004
MW-4	X2400084-005	01/29/2004	01/30/2004
MW-5	X2400084-006	01/29/2004	01/30/2004
MW-6	X2400084-007	01/30/2004	01/30/2004
MW-7	X2400084-008	01/30/2004	01/30/2004
TB	X2400084-009		01/30/2004
MW-1MS	XWG0400215-1	01/29/2004	01/30/2004
MW-1DMS	XWG0400215-2	01/29/2004	01/30/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Tracy Dutton

Name: Tracy Dutton

Date: 2-12-04

Title: Lab Manager

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: EB-1
Lab Code: X2400084-001

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	4.7		1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	9.9		0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	1.2		0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: EB-1
Lab Code: X2400084-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	**2.0**		0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	**14**		0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	**0.97**		0.50	1	02/09/04	02/09/04	
m,p-Xylenes	**2.3**		1.0	1	02/09/04	02/09/04	
o-Xylene	**1.5**		0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	**5.8**		0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400084
Project:	Western Ave.	**Date Collected:**	01/29/2004
Sample Matrix:	Water	**Date Received:**	01/30/2004

Volatile Organic Compounds

Sample Name:	EB-1	**Units:**	ug/L
Lab Code:	X2400084-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	103	84-113	02/09/04	
Toluene-d8	94	68-126	02/09/04	
4-Bromofluorobenzene	96	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400084
Project:	Western Ave.	**Date Collected:**	01/29/2004
Sample Matrix:	Water	**Date Received:**	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-1	**Units:**	ug/L
Lab Code:	X2400084-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-1
Lab Code: X2400084-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	**4.9**		0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-1
Lab Code: X2400084-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	100	84-113	02/09/04	
Toluene-d8	94	68-126	02/09/04	
4-Bromofluorobenzene	96	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400084
Project:	Western Ave.	**Date Collected:**	01/29/2004
Sample Matrix:	Water	**Date Received:**	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-2	**Units:**	ug/L
Lab Code:	X2400084-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-2
Lab Code: X2400084-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	3.4		0.50	1	02/09/04	02/09/04	
-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Collected:	01/29/2004
Sample Matrix:	Water	Date Received:	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-2	Units:	ug/L
Lab Code:	X2400084-003	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	98	84-113	02/09/04	
Toluene-d8	96	68-126	02/09/04	
4-Bromofluorobenzene	95	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: X2400084-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: X2400084-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	ND	U	0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Collected:	01/29/2004
Sample Matrix:	Water	Date Received:	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-3	Units:	ug/L
Lab Code:	X2400084-004	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	97	84-113	02/09/04	
Toluene-d8	94	68-126	02/09/04	
4-Bromofluorobenzene	94	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-4
Lab Code: X2400084-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-4
Lab Code: X2400084-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	**2.6**		0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Collected:	01/29/2004
Sample Matrix:	Water	Date Received:	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-4	Units:	ug/L
Lab Code:	X2400084-005	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	102	84-113	02/09/04	
Toluene-d8	95	68-126	02/09/04	
4-Bromofluorobenzene	94	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-5
Lab Code: X2400084-006

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	**2.6**		1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/29/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-5
Lab Code: X2400084-006

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	**2.7**		0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Collected:	01/29/2004
Sample Matrix:	Water	Date Received:	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-5	Units:	ug/L
Lab Code:	X2400084-006	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	103	84-113	02/09/04	
Toluene-d8	96	68-126	02/09/04	
4-Bromofluorobenzene	96	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/30/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-6
Lab Code: X2400084-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/30/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-6
Lab Code: X2400084-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	ND	U	0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400084
Project:	Western Ave.	**Date Collected:**	01/30/2004
Sample Matrix:	Water	**Date Received:**	01/30/2004

Volatile Organic Compounds

Sample Name:	MW-6	**Units:**	ug/L
Lab Code:	X2400084-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	103	84-113	02/09/04	
Toluene-d8	94	68-126	02/09/04	
4-Bromofluorobenzene	95	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/30/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: X2400084-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/30/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: X2400084-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	2.5		0.50	1	02/09/04	02/09/04	
-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
n,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
sopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
ert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: 01/30/2004
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: X2400084-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	102	84-113	02/09/04	
Toluene-d8	96	68-126	02/09/04	
4-Bromofluorobenzene	95	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected:
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: TB
Lab Code: X2400084-009

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected:
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: TB
Lab Code: X2400084-009

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	ND	U	0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected:
Date Received: 01/30/2004

Volatile Organic Compounds

Sample Name: TB
Lab Code: X2400084-009

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	100	84-113	02/09/04	
Toluene-d8	96	68-126	02/09/04	
4-Bromofluorobenzene	96	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0400215-5

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/09/04	02/09/04	
Chloromethane	ND	U	2.0	1	02/09/04	02/09/04	
Vinyl Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Bromomethane	ND	U	1.0	1	02/09/04	02/09/04	
Chloroethane	ND	U	2.0	1	02/09/04	02/09/04	
Trichlorofluoromethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,1-Dichloroethene	ND	U	1.0	1	02/09/04	02/09/04	
Acetone	ND	U	20	1	02/09/04	02/09/04	
Iodomethane	ND	U	2.0	1	02/09/04	02/09/04	
Carbon Disulfide	ND	U	2.0	1	02/09/04	02/09/04	
Methylene Chloride	ND	U	1.0	1	02/09/04	02/09/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/09/04	02/09/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Vinyl Acetate	ND	U	3.0	1	02/09/04	02/09/04	
2,2-Dichloropropane	ND	U	2.0	1	02/09/04	02/09/04	
2-Butanone (MEK)	ND	U	8.0	1	02/09/04	02/09/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
Bromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
Chloroform	ND	U	1.0	1	02/09/04	02/09/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Carbon Tetrachloride	ND	U	0.50	1	02/09/04	02/09/04	
1,1-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
Benzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Trichloroethene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichloropropane	ND	U	0.50	1	02/09/04	02/09/04	
Dibromomethane	ND	U	0.50	1	02/09/04	02/09/04	
Bromodichloromethane	ND	U	0.50	1	02/09/04	02/09/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/09/04	02/09/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/09/04	02/09/04	
Toluene	ND	U	0.50	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0400215-5

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
rans-1,3-Dichloropropene	ND	U	1.0	1	02/09/04	02/09/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/09/04	02/09/04	
Tetrachloroethene	ND	U	0.50	1	02/09/04	02/09/04	
2-Hexanone	ND	U	5.0	1	02/09/04	02/09/04	
1,3-Dichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
Dibromochloromethane	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromoethane	ND	U	0.50	1	02/09/04	02/09/04	
Chlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/09/04	02/09/04	
Ethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
m,p-Xylenes	ND	U	1.0	1	02/09/04	02/09/04	
o-Xylene	ND	U	0.50	1	02/09/04	02/09/04	
Styrene	ND	U	0.50	1	02/09/04	02/09/04	
Isopropylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
Bromobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/09/04	02/09/04	
n-Propylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
2-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
4-Chlorotoluene	ND	U	0.50	1	02/09/04	02/09/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
tert-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
sec-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
4-Isopropyltoluene	ND	U	0.50	1	02/09/04	02/09/04	
Bromoform	ND	U	0.50	1	02/09/04	02/09/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/09/04	02/09/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
n-Butylbenzene	ND	U	0.50	1	02/09/04	02/09/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/09/04	02/09/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/09/04	02/09/04	
Hexachlorobutadiene	ND	U	1.0	1	02/09/04	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Collected:	NA
Sample Matrix:	Water	Date Received:	NA

Volatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L
Lab Code:	XWG0400215-5	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/09/04	02/09/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/09/04	02/09/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	97	84-113	02/09/04	
Toluene-d8	92	68-126	02/09/04	
4-Bromofluorobenzene	94	79-113	02/09/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
EB-1	X2400084-001	103	94	96
MW-1	X2400084-002	100	94	96
MW-2	X2400084-003	98	96	95
MW-3	X2400084-004	97	94	94
MW-4	X2400084-005	102	95	94
MW-5	X2400084-006	103	96	96
MW-6	X2400084-007	103	94	95
MW-7	X2400084-008	102	96	95
TB	X2400084-009	100	96	96
Method Blank	XWG0400215-5	97	92	94
MW-1MS	XWG0400215-1	97	99	103
MW-1DMS	XWG0400215-2	95	95	99
Lab Control Sample	XWG0400215-3	93	92	98
Duplicate Lab Control Sample	XWG0400215-4	92	89	96

Surrogate Recovery Control Limits (%)

Sur1 =	Dibromofluoromethane	84-113
Sur2 =	Toluene-d8	68-126
Sur3 =	4-Bromofluorobenzene	79-113

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Extracted:	02/09/2004
Sample Matrix:	Water	Date Analyzed:	02/09/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	MW-1	Units:	ug/L
Lab Code:	X2400084-002	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B	Extraction Lot:	XWG0400215

Analyte Name	Sample Result	MW-1MS XWG0400215-1 Matrix Spike			MW-1DMS XWG0400215-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Dichlorodifluoromethane	ND	13.7	10.0	137	13.2	10.0	132	78-207	4	20
Chloromethane	ND	11.1	10.0	111	10.4	10.0	104	70-157	7	20
Vinyl Chloride	ND	12.3	10.0	123	11.4	10.0	114	79-174	7	20
Bromomethane	ND	10.3	10.0	103	9.67	10.0	97	44-150	6	20
Chloroethane	ND	10.8	10.0	108	10.3	10.0	103	74-150	4	20
Trichlorofluoromethane	ND	11.6	10.0	116	11.1	10.0	111	80-134	4	20
1,1,2-Trichlorotrifluoroethane	ND	11.8	10.0	118	11.1	10.0	111	67-128	6	20
1,1-Dichloroethene	ND	10.5	10.0	105	9.84	10.0	98	71-142	6	20
Acetone	ND	33.1	40.0	83	34.4	40.0	86	1-155	4	20
Iodomethane	ND	42.9	40.0	107	42.3	40.0	106	47-120	1	20
Carbon Disulfide	ND	41.6	40.0	104	38.5	40.0	96	77-126	8	20
Methylene Chloride	ND	10.1	10.0	101	9.62	10.0	96	83-106	5	20
Methyl tert-Butyl Ether	ND	10.4	10.0	104	10.2	10.0	102	70-118	2	20
trans-1,2-Dichloroethene	ND	10.7	10.0	107	10.2	10.0	102	86-115	5	20
1,1-Dichloroethane	ND	11.0	10.0	110	10.4	10.0	104	77-127	5	20
Vinyl Acetate	ND	41.6	40.0	104	38.2	40.0	96	8-187	8	20
2,2-Dichloropropane	ND	11.3	10.0	113	10.5	10.0	105	25-154	7	20
2-Butanone (MEK)	ND	36.4	40.0	91	37.6	40.0	94	90-112	3	20
cis-1,2-Dichloroethene	ND	10.7	10.0	107	10.3	10.0	103	69-118	4	20
Bromochloromethane	ND	9.14	10.0	91	8.99	10.0	90	47-136	2	20
Chloroform	ND	10.5	10.0	105	10.1	10.0	101	48-143	4	20
1,1,1-Trichloroethane	ND	10.7	10.0	107	9.90	10.0	99	84-122	8	20
Carbon Tetrachloride	ND	11.4	10.0	114	10.7	10.0	107	79-120	6	20
1,1-Dichloropropene	ND	10.8	10.0	108	10.2	10.0	102	85-117	6	20
Benzene	ND	10.9	10.0	109	10.4	10.0	104	88-114	4	20
1,2-Dichloroethane	ND	9.40	10.0	94	9.13	10.0	91	75-112	3	20
Trichloroethene	ND	10.7	10.0	107	10.4	10.0	104	76-115	3	20
1,2-Dichloropropane	ND	10.0	10.0	100	9.48	10.0	95	85-107	5	20
Dibromomethane	ND	9.20	10.0	92	8.88	10.0	89	82-106	4	20
Bromodichloromethane	ND	9.73	10.0	97	9.46	10.0	95	83-107	3	20
cis-1,3-Dichloropropene	ND	9.66	10.0	97	9.33	10.0	93	70-114	3	20
4-Methyl-2-pentanone (MIBK)	ND	38.3	40.0	96	38.3	40.0	96	54-129	0	20
Toluene	ND	10.0	10.0	100	9.49	10.0	95	86-114	5	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Extracted:	02/09/2004
Sample Matrix:	Water	Date Analyzed:	02/09/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	MW-1	Units:	ug/L
Lab Code:	X2400084-002	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B	Extraction Lot:	XWG0400215

Analyte Name	Sample Result	MW-1MS XWG0400215-1 Matrix Spike			MW-1DMS XWG0400215-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
trans-1,3-Dichloropropene	ND	10.2	10.0	102	9.85	10.0	99	73-112	4	20
1,1,2-Trichloroethane	ND	8.87	10.0	89	8.74	10.0	87	79-112	1	20
Tetrachloroethene	4.9	13.5	10.0	86	12.6	10.0	78	78-130	7	20
2-Hexanone	ND	34.4	40.0	86	34.2	40.0	85	77-112	1	20
1,3-Dichloropropane	ND	9.80	10.0	98	9.46	10.0	95	45-133	4	20
Dibromochloromethane	ND	9.31	10.0	93	8.86	10.0	89	74-108	5	20
1,2-Dibromoethane	ND	9.34	10.0	93	9.14	10.0	91	73-113	2	20
Chlorobenzene	ND	9.91	10.0	99	9.52	10.0	95	84-111	4	20
1,1,1,2-Tetrachloroethane	ND	9.54	10.0	95	9.16	10.0	92	84-119	4	20
Ethylbenzene	ND	10.2	10.0	102	9.67	10.0	97	47-136	5	20
m,p-Xylenes	ND	19.7	20.0	98	18.8	20.0	94	84-120	5	20
o-Xylene	ND	9.67	10.0	97	9.23	10.0	92	47-143	5	20
Styrene	ND	8.41	10.0	84	7.62	10.0	76	72-121	10	20
Isopropylbenzene	ND	9.89	10.0	99	9.46	10.0	95	63-108	4	20
Bromobenzene	ND	9.37	10.0	94	9.07	10.0	91	80-113	3	20
1,2,3-Trichloropropane	ND	9.45	10.0	95	9.03	10.0	90	78-119	5	20
n-Propylbenzene	ND	10.1	10.0	101	9.56	10.0	96	76-117	6	20
2-Chlorotoluene	ND	9.90	10.0	99	9.46	10.0	95	79-121	5	20
4-Chlorotoluene	ND	9.96	10.0	100	9.44	10.0	94	70-133	5	20
1,3,5-Trimethylbenzene	ND	9.73	10.0	97	9.31	10.0	93	79-118	4	20
tert-Butylbenzene	ND	9.91	10.0	99	9.50	10.0	95	77-120	4	20
1,2,4-Trimethylbenzene	ND	9.28	10.0	93	8.81	10.0	88	68-127	5	20
sec-Butylbenzene	ND	9.67	10.0	97	9.25	10.0	93	78-123	4	20
1,3-Dichlorobenzene	ND	9.50	10.0	95	9.07	10.0	91	78-127	5	20
4-Isopropyltoluene	ND	9.78	10.0	98	9.35	10.0	94	79-142	4	20
Bromoform	ND	8.87	10.0	89	8.13	10.0	81	~~MM~~ 83-111	9	20
1,1,2,2-Tetrachloroethane	ND	8.87	10.0	89	8.53	10.0	85	HO 66-133	4	20
1,4-Dichlorobenzene	ND	9.74	10.0	97	9.25	10.0	93	48-139	5	20
1,2-Dichlorobenzene	ND	10.0	10.0	100	9.65	10.0	97	64-109	4	20
n-Butylbenzene	ND	10.1	10.0	101	9.70	10.0	97	69-122	4	20
1,2-Dibromo-3-chloropropane	ND	8.68	10.0	87	8.88	10.0	89	54-160	2	20
1,2,4-Trichlorobenzene	ND	9.42	10.0	94	9.05	10.0	91	39-145	4	20
Hexachlorobutadiene	ND	10.6	10.0	106	9.91	10.0	99	74-113	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	GeoTrans	Service Request:	X2400084
Project:	Western Ave.	Date Extracted:	02/09/2004
Sample Matrix:	Water	Date Analyzed:	02/09/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	MW-1	Units:	ug/L
Lab Code:	X2400084-002	Basis:	NA
Extraction Method:	EPA 5030B	Level:	Low
Analysis Method:	8260B	Extraction Lot:	XWG0400215

Analyte Name	Sample Result	MW-1MS XWG0400215-1 Matrix Spike			MW-1DMS XWG0400215-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	ND	8.99	10.0	90	8.78	10.0	88	44-167	2	20
1,2,3-Trichlorobenzene	ND	9.76	10.0	98	9.29	10.0	93	37-158	5	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Extracted: 02/09/2004
Date Analyzed: 02/09/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0400215

Analyte Name	Lab Control Sample XWG0400215-3 Lab Control Spike Result	Expected	%Rec	Duplicate Lab Control Sample XWG0400215-4 Duplicate Lab Control Spike Result	Expected	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	12.3	10.0	123	12.2	10.0	122	1-233	0	20
Chloromethane	10.2	10.0	102	10.2	10.0	102	46-156	1	20
Vinyl Chloride	11.5	10.0	115	11.1	10.0	111	51-158	3	20
Bromomethane	10.0	10.0	100	10.1	10.0	101	37-149	1	20
Chloroethane	10.1	10.0	101	10.1	10.0	101	56-146	0	20
Trichlorofluoromethane	10.8	10.0	108	10.8	10.0	108	69-139	0	20
1,1,2-Trichlorotrifluoroethane	10.8	10.0	108	10.4	10.0	104	83-130	3	20
1,1-Dichloroethene	9.59	10.0	96	9.66	10.0	97	65-112	1	20
Acetone	33.7	40.0	84	37.1	40.0	93	68-128	10	20
Iodomethane	40.1	40.0	100	41.2	40.0	103	68-144	3	20
Carbon Disulfide	39.5	40.0	99	39.1	40.0	98	67-140	1	20
Methylene Chloride	9.61	10.0	96	9.56	10.0	96	70-113	1	20
Methyl tert-Butyl Ether	9.63	10.0	96	9.92	10.0	99	75-115	3	20
trans-1,2-Dichloroethene	9.83	10.0	98	9.72	10.0	97	73-118	1	20
1,1-Dichloroethane	10.2	10.0	102	10.2	10.0	102	77-127	0	20
Vinyl Acetate	39.0	40.0	98	40.0	40.0	100	51-202	2	39
2,2-Dichloropropane	10.4	10.0	104	10.2	10.0	102	75-132	2	20
2-Butanone (MEK)	34.4	40.0	86	36.7	40.0	92	72-122	7	20
cis-1,2-Dichloroethene	9.97	10.0	100	9.91	10.0	99	81-118	1	20
Bromochloromethane	8.76	10.0	88	9.13	10.0	91	82-114	4	20
Chloroform	9.95	10.0	100	9.91	10.0	99	78-119	0	20
1,1,1-Trichloroethane	9.77	10.0	98	9.73	10.0	97	71-125	0	20
Carbon Tetrachloride	10.4	10.0	104	10.2	10.0	102	69-130	2	20
1,1-Dichloropropene	9.72	10.0	97	9.74	10.0	97	77-114	0	20
Benzene	10.1	10.0	101	10.1	10.0	101	81-117	0	20
1,2-Dichloroethane	9.01	10.0	90	9.34	10.0	93	67-122	4	20
Trichloroethene	10.2	10.0	102	9.94	10.0	99	79-114	2	20
1,2-Dichloropropane	9.61	10.0	96	9.51	10.0	95	78-114	1	20
Dibromomethane	8.91	10.0	89	9.13	10.0	91	78-113	2	20
Bromodichloromethane	9.28	10.0	93	9.31	10.0	93	79-122	0	20
cis-1,3-Dichloropropene	9.58	10.0	96	9.82	10.0	98	82-118	2	20
4-Methyl-2-pentanone (MIBK)	36.4	40.0	91	37.7	40.0	94	75-115	4	20
Toluene	9.42	10.0	94	9.44	10.0	94	85-118	0	20
trans-1,3-Dichloropropene	9.86	10.0	99	10.0	10.0	100	79-121	1	20
1,1,2-Trichloroethane	8.56	10.0	86	8.66	10.0	87	79-116	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400084
Date Extracted: 02/09/2004
Date Analyzed: 02/09/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0400215

Analyte Name	Lab Control Sample XWG0400215-3 Lab Control Spike			Duplicate Lab Control Sample XWG0400215-4 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Tetrachloroethene	9.05	10.0	91	9.14	10.0	91	76-127	1	20
2-Hexanone	32.7	40.0	82	34.3	40.0	86	65-120	5	20
1,3-Dichloropropane	9.31	10.0	93	9.45	10.0	95	81-116	1	20
Dibromochloromethane	8.82	10.0	88	9.13	10.0	91	77-119	3	20
1,2-Dibromoethane	8.91	10.0	89	9.37	10.0	94	79-116	5	20
Chlorobenzene	9.45	10.0	95	9.40	10.0	94	84-114	1	20
1,1,1,2-Tetrachloroethane	9.10	10.0	91	9.07	10.0	91	78-118	0	20
Ethylbenzene	9.42	10.0	94	9.37	10.0	94	79-124	1	20
m,p-Xylenes	18.4	20.0	92	18.3	20.0	92	75-131	0	20
o-Xylene	9.06	10.0	91	9.13	10.0	91	78-122	1	20
Styrene	9.11	10.0	91	9.14	10.0	91	80-126	0	20
Isopropylbenzene	9.14	10.0	91	9.09	10.0	91	75-126	1	20
Bromobenzene	8.87	10.0	89	9.11	10.0	91	82-122	3	20
1,2,3-Trichloropropane	8.86	10.0	89	9.17	10.0	92	77-118	3	20
n-Propylbenzene	9.34	10.0	93	9.32	10.0	93	75-129	0	20
2-Chlorotoluene	9.28	10.0	93	9.39	10.0	94	77-126	1	20
4-Chlorotoluene	9.32	10.0	93	9.36	10.0	94	82-120	0	20
1,3,5-Trimethylbenzene	9.28	10.0	93	9.31	10.0	93	75-130	0	20
tert-Butylbenzene	9.28	10.0	93	9.26	10.0	93	73-130	0	20
1,2,4-Trimethylbenzene	9.23	10.0	92	9.28	10.0	93	60-137	1	20
sec-Butylbenzene	8.96	10.0	90	8.85	10.0	89	68-131	1	20
1,3-Dichlorobenzene	8.94	10.0	89	8.94	10.0	89	71-137	0	20
4-Isopropyltoluene	9.11	10.0	91	9.17	10.0	92	68-134	1	20
Bromoform	8.40	10.0	84	8.52	10.0	85	70-118	1	20
1,1,2,2-Tetrachloroethane	8.49	10.0	85	8.62	10.0	86	72-122	2	20
1,4-Dichlorobenzene	9.29	10.0	93	9.21	10.0	92	82-114	1	20
1,2-Dichlorobenzene	9.51	10.0	95	9.65	10.0	97	81-118	1	20
n-Butylbenzene	9.44	10.0	94	9.43	10.0	94	71-125	0	20
1,2-Dibromo-3-chloropropane	8.72	10.0	87	8.39	10.0	84	55-131	4	20
1,2,4-Trichlorobenzene	8.86	10.0	89	8.94	10.0	89	75-123	1	20
Hexachlorobutadiene	10.4	10.0	104	10.0	10.0	100	63-140	4	20
Naphthalene	8.35	10.0	84	8.70	10.0	87	67-125	4	20
1,2,3-Trichlorobenzene	9.17	10.0	92	9.50	10.0	95	72-124	4	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 East University Drive, Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • (800) 695-7222 x09 • FAX (602) 437-5308

DATE _____ PAGE _____ OF _____

PROJECT NAME: Western Ave #
PROJECT MANAGER: Paul Plato
COMPANY/ADDRESS: GeoTrans
4665 S. Ash Ave. G-1, Tempe, AZ 85282
480-839-2800 PHONE/FAX 480-839-2828
SAMPLER'S SIGNATURE: Jason Bulkhan

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB ID.	MATRIX	PRESERVATION	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GC/MS 624/8260	Halogenated Volatile Organics 601/8021	Halogenated & Aromatic Volatiles 601/602 ☐ 8021 ☐	TPH/8015AZ R1 C_{10}-C_{32}	Total Petroleum Hydrocarbons EPA 418.1 / 418.1 AZ	Base Neutral Acid Organics GC/MS 625/8270	8RCRA Metals Total ☐ TCLP ☐	Lead Total ☐ TCLP ☐	Flash Point ☐ pH ☐ Paint Filter ☐	TVPH as Gasoline 8015 AZ C_6-C_{10}	PAH 8310 ☐ 8270 ☐					REMARKS
EB-1	1-29	14:02	0084-001		HCL			X															
MW-1	1-29	12:17	002		HCL			X															
MW-2	1-29	14:05	003		HCL			X															
MW-3	1-29	15:35	004		HCL			X															
MW-4	1-29	16:12	005		HCL			X															
MW-5	1-29	16:53	006		HCL			X															
MW-6	1-30	10:40	007		HCL			X															
MW-7	1-30	09:00	008		HCL			X															
TB								X															

SPECIAL INSTRUCTIONS/COMMENTS:

REPORT REQUIREMENTS
___ I. Routine Report
X II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# _____
Bill To _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: X2400084

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Jason Bulkhan	GeoTrans	1-30/5:00	Leslie May	CAS	1/30/04 1700
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time

ANALYSIS TAT (Circle One)
STANDARD
RUSH TAT - Surcharges Apply
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours

X24 0084

Columbia Analytical Services, Inc.
Phoenix, AZ

Sample Receipt and Preservation Form

Client: GeoTrans Project Name: Western Ave

Sample(s) Received on: 1/30/04 date 1700 time

VOA's ☑ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐ Tedlar Bags ☐

MATRIX: SOIL ☐ WATER ☑ VAPOR ☐

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

1. Rush or standard turn-a-round time?	RUSH	STANDARD
2. Are the custody seals present? If yes, how many and where? _____	Yes ☐	No ☑
3. Are the signature and date correct?	Yes ☑	No ☐
4. Did all containers arrive in good condition?	Yes ☑	No ☐
5. Are all container labels complete (i.e. preservation, sample ID)?	Yes ☑	No ☐
6. Were the correct containers used for the tests indicated?	Yes ☑	No ☐
7. Have VOA's been checked for the presence of air bubbles? (note problems in comments)	Yes ☑	No ☐ N/A ☐
8. Temperature of sample(s) upon receipt: 4.0 °C		

Explaination of discrepancies: _____

		YES	NO
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		
2	HCl		

VOA Vial pH Verification
(Tested After Analysis)
☐ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

Comments: _____

Form Completed and Sample(s) Received by (initials): [illegible]

r:\common\forms\samprev.doc
Revised: 08/14/03 11:51 AM

Columbia Analytical Services INC.
An Employee-Owned Company

RECEIVED
FEB 16 2004
GEOTRANS

February 12, 2004

Paul Plato
GeoTrans
4665 S. Ash Avenue, Suite G-1
Tempe, AZ 85285

Re: Western Ave.

Dear Paul:

Enclosed are the results of the samples submitted to our laboratory on February 3, 2004. For your reference, these analyses have been assigned our service request number X2400093.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Columbia Analytical Services, Inc. is certified for environmental analyses by the Arizona Department of Health Services (Certificate #AZ0497).

Please call if you have any questions. My extension is 223.

Respectfully submitted,

Columbia Analytical Services, Inc.

Tracy L. Dutton

Tracy L. Dutton
Laboratory Director

TLD/lm

NELAC Accredited
3902 East University Drive, Suite 4 Phoenix, AZ 85034
(602) 437-2001 (800) 695-7222x09 Fax (602) 437-5308
ACIL Seal of Excellence Laboratory

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	GeoTrans	**Service Request No.:**	X2400093
Project:	Western Ave.	**Date Received:**	2/3/04
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Matrix spike (XWG0400220-2) recovery of Styrene, Method 8260B, was low. The matrix spike recovery was acceptable.

RPD for Styrene, Method 8260B, exceeded the laboratory control limit for MS/DMS (XWG0400220-1 and XWG0400220-2).

Approved by JD Date 2-12-04

ARIZONA DATA QUALIFIERS

Method Blank:

B1	Target analyte detected in method blank at or above the method reporting limit.
B2	Non-target analyte detected in method blank and sample, producing interference.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B4	Target analyte detected in blank at/above method acceptance criteria.
B5	Target analyte detected in method blank at or above the method reporting limit, but below trigger level or MCL.
B6	Target analyte detected in calibration blank at or above the method reporting limit, but below trigger level or MCL.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the method blank.

Confirmation:

C1	Confirmatory analysis not performed as required by the method.
C2	Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data.
C3	Qualitative confirmation performed. See case narrative.
C4	Confirmatory analysis was past holding time.
C5	Confirmatory analysis was past holding time. Original result not confirmed.

Dilution:

D1	Sample required dilution due to matrix interference. See case narrative.
D2	Sample required dilution due to high concentration of target analyte.
D3	Sample dilution required due to insufficient sample.
D4	Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed.

Estimated concentration:

E1	Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E3	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL).
E5	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis.
E6	Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria.
E7	Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria.

Hold Time:

H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.

Laboratory fortified blank/blank spike:

L1	The associated blank spike recovery was above laboratory acceptance limits. See case narrative.

L2 The associated blank spike recovery was below laboratory acceptance limits. See case narrative.
L3 The associated blank spike recovery was above method acceptance limits. See case narrative.
L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.

Matrix spike:

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.
M2 Matrix spike recovery was low, the method control sample recovery was acceptable.
M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.
M5 Analyte concentration was determined by the method of standard addition (MSA).
M6 Matrix spike recovery was high. Data reported per ADEQ policy 0154.000.
M7 Matrix sipke recovery was low. Data reported per ADEQ policy 0154.000.

General:

N1 See case narrative.
N2 See corrective action report.

Sample quality:

Q1 Sample integrity was not maintained. See case narrative.
Q2 Sample received with head space.
Q3 Sample received with improper chemical preservation.
Q4 Sample received and analyzed without chemical preservation.
Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.
Q6 Sample was received above recommended temperature.
Q7 Sample inadequately dechlorinated.
Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.
Q9 Insufficient sample received to meet QC requirements.
Q10 Sample received in inappropriate sample container.
Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

Duplicates:

R1 RPD exceeded the method control limit. See case narrative.
R2 RPD exceeded the laboratory control limit. See case narrative.
R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.
R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R8 Sample RPD exceeded the method control limit.
R9 Sample RPD exceeded the laboratory control limit.

Surrogate:

S1 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
S2 Surrogate recovery was above laboratory and method acceptance limits.

S3 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample.

S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

S5 Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

S7 Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.

S8 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable.

S9 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

S11 Surrogate recovery was high. Data reported per ADEQ policy 0154.000.

S12 Surrogate recovery was low. Data reported per ADEQ policy 0154.000.

Method/analyte discrepancies:

T1 Method promulgated by EPA, but not ADHS at this time.

T2 Cited ADHS licensed method does not contain this analyte as part of method compound list.

T3 Method not promulgated either by EPA or ADHS.

T4 Tentatively identified compound. Concentration is estimated and based on the closest internal standard.

Calibration verification:

V1 CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

V2 CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample.

V3 CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative.

V4 CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample.

V5 CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B.

V6 Data reported from one-point calibration criteria per ADEQ policy 0155.000.

V7 Calibration verification recovery was above the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

V8 Calibration verification recovery was below the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

Calibration:

W1 The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria as specified in EPA method 8000B.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The reported value is estimated because of the presence of matrix interference.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Client: GeoTrans
Project: Western Ave.

Service Request: X2400093

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
GMW-5	X2400093-001	02/03/2004	02/03/2004
COG-MW3	X2400093-002	02/03/2004	02/03/2004
ADEQ-MW3	X2400093-003	02/03/2004	02/03/2004
Trip Blank	X2400093-004		02/03/2004

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Tracy Dutton

Name: Tracy Dutton

Date: 2-12-04

Title: Lab Manager

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: GMW-5
Lab Code: X2400093-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/06/04	02/07/04	
Chloromethane	ND	U	2.0	1	02/06/04	02/07/04	
Vinyl Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Bromomethane	ND	U	1.0	1	02/06/04	02/07/04	
Chloroethane	ND	U	2.0	1	02/06/04	02/07/04	
Trichlorofluoromethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1-Dichloroethene	ND	U	1.0	1	02/06/04	02/07/04	
Acetone	ND	U	20	1	02/06/04	02/07/04	
Iodomethane	ND	U	2.0	1	02/06/04	02/07/04	
Carbon Disulfide	ND	U	2.0	1	02/06/04	02/07/04	
Methylene Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/06/04	02/07/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Vinyl Acetate	ND	U	3.0	1	02/06/04	02/07/04	
2,2-Dichloropropane	ND	U	2.0	1	02/06/04	02/07/04	
2-Butanone (MEK)	ND	U	8.0	1	02/06/04	02/07/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
Bromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
Chloroform	ND	U	1.0	1	02/06/04	02/07/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Carbon Tetrachloride	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
Benzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Trichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloropropane	ND	U	0.50	1	02/06/04	02/07/04	
Dibromomethane	ND	U	0.50	1	02/06/04	02/07/04	
Bromodichloromethane	ND	U	0.50	1	02/06/04	02/07/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/06/04	02/07/04	
Toluene	ND	U	0.50	1	02/06/04	02/07/04	

Comments:

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: GMW-5
Lab Code: X2400093-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/06/04	02/07/04	
Tetrachloroethene	**2.4**		0.50	1	02/06/04	02/07/04	
2-Hexanone	ND	U	5.0	1	02/06/04	02/07/04	
1,3-Dichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
Dibromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromoethane	ND	U	0.50	1	02/06/04	02/07/04	
Chlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Ethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
m,p-Xylenes	ND	U	1.0	1	02/06/04	02/07/04	
o-Xylene	ND	U	0.50	1	02/06/04	02/07/04	
Styrene	ND	U	0.50	1	02/06/04	02/07/04	
Isopropylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
Bromobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
n-Propylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
2-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
4-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
tert-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
sec-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
4-Isopropyltoluene	ND	U	0.50	1	02/06/04	02/07/04	
Bromoform	ND	U	0.50	1	02/06/04	02/07/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
n-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/06/04	02/07/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
Hexachlorobutadiene	ND	U	1.0	1	02/06/04	02/07/04	

Comments:

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400093
Project:	Western Ave.	**Date Collected:**	02/03/2004
Sample Matrix:	Water	**Date Received:**	02/03/2004

Volatile Organic Compounds

Sample Name:	GMW-5	**Units:**	ug/L
Lab Code:	X2400093-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/06/04	02/07/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/06/04	02/07/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	96	84-113	02/07/04	
Toluene-d8	93	68-126	02/07/04	
4-Bromofluorobenzene	92	79-113	02/07/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X2400093-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/06/04	02/07/04	
Chloromethane	ND	U	2.0	1	02/06/04	02/07/04	
Vinyl Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Bromomethane	ND	U	1.0	1	02/06/04	02/07/04	
Chloroethane	ND	U	2.0	1	02/06/04	02/07/04	
Trichlorofluoromethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1-Dichloroethene	ND	U	1.0	1	02/06/04	02/07/04	
Acetone	ND	U	20	1	02/06/04	02/07/04	
Iodomethane	ND	U	2.0	1	02/06/04	02/07/04	
Carbon Disulfide	ND	U	2.0	1	02/06/04	02/07/04	
Methylene Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/06/04	02/07/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Vinyl Acetate	ND	U	3.0	1	02/06/04	02/07/04	
2,2-Dichloropropane	ND	U	2.0	1	02/06/04	02/07/04	
2-Butanone (MEK)	ND	U	8.0	1	02/06/04	02/07/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
Bromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
Chloroform	ND	U	1.0	1	02/06/04	02/07/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Carbon Tetrachloride	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
Benzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Trichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloropropane	ND	U	0.50	1	02/06/04	02/07/04	
Dibromomethane	ND	U	0.50	1	02/06/04	02/07/04	
Bromodichloromethane	ND	U	0.50	1	02/06/04	02/07/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/06/04	02/07/04	
Toluene	ND	U	0.50	1	02/06/04	02/07/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X2400093-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/06/04	02/07/04	
Tetrachloroethene	**4.4**		0.50	1	02/06/04	02/07/04	
2-Hexanone	ND	U	5.0	1	02/06/04	02/07/04	
1,3-Dichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
Dibromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromoethane	ND	U	0.50	1	02/06/04	02/07/04	
Chlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Ethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
m,p-Xylenes	ND	U	1.0	1	02/06/04	02/07/04	
o-Xylene	ND	U	0.50	1	02/06/04	02/07/04	
Styrene	ND	U	0.50	1	02/06/04	02/07/04	
Isopropylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
Bromobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
n-Propylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
2-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
4-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
tert-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
sec-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
4-Isopropyltoluene	ND	U	0.50	1	02/06/04	02/07/04	
Bromoform	ND	U	0.50	1	02/06/04	02/07/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
n-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/06/04	02/07/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
Hexachlorobutadiene	ND	U	1.0	1	02/06/04	02/07/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X2400093-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/06/04	02/07/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/06/04	02/07/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	93	84-113	02/07/04	
Toluene-d8	92	68-126	02/07/04	
4-Bromofluorobenzene	90	79-113	02/07/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: ADEQ-MW3
Lab Code: X2400093-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/06/04	02/07/04	
Chloromethane	ND	U	2.0	1	02/06/04	02/07/04	
Vinyl Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Bromomethane	ND	U	1.0	1	02/06/04	02/07/04	
Chloroethane	ND	U	2.0	1	02/06/04	02/07/04	
Trichlorofluoromethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,1-Dichloroethene	ND	U	1.0	1	02/06/04	02/07/04	
Acetone	ND	U	20	1	02/06/04	02/07/04	
Iodomethane	ND	U	2.0	1	02/06/04	02/07/04	
Carbon Disulfide	ND	U	2.0	1	02/06/04	02/07/04	
Methylene Chloride	ND	U	1.0	1	02/06/04	02/07/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/06/04	02/07/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Vinyl Acetate	ND	U	3.0	1	02/06/04	02/07/04	
2,2-Dichloropropane	ND	U	2.0	1	02/06/04	02/07/04	
2-Butanone (MEK)	ND	U	8.0	1	02/06/04	02/07/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
Bromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
Chloroform	ND	U	1.0	1	02/06/04	02/07/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Carbon Tetrachloride	ND	U	0.50	1	02/06/04	02/07/04	
1,1-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
Benzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Trichloroethene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichloropropane	ND	U	0.50	1	02/06/04	02/07/04	
Dibromomethane	ND	U	0.50	1	02/06/04	02/07/04	
Bromodichloromethane	ND	U	0.50	1	02/06/04	02/07/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/06/04	02/07/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/06/04	02/07/04	
Toluene	ND	U	0.50	1	02/06/04	02/07/04	

Comments:

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: ADEQ-MW3
Lab Code: X2400093-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/06/04	02/07/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/06/04	02/07/04	
Tetrachloroethene	**5.0**		0.50	1	02/06/04	02/07/04	
2-Hexanone	ND	U	5.0	1	02/06/04	02/07/04	
1,3-Dichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
Dibromochloromethane	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromoethane	ND	U	0.50	1	02/06/04	02/07/04	
Chlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/06/04	02/07/04	
Ethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
m,p-Xylenes	ND	U	1.0	1	02/06/04	02/07/04	
o-Xylene	ND	U	0.50	1	02/06/04	02/07/04	
Styrene	ND	U	0.50	1	02/06/04	02/07/04	
Isopropylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
Bromobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/06/04	02/07/04	
n-Propylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
2-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
4-Chlorotoluene	ND	U	0.50	1	02/06/04	02/07/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
tert-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
sec-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
4-Isopropyltoluene	ND	U	0.50	1	02/06/04	02/07/04	
Bromoform	ND	U	0.50	1	02/06/04	02/07/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/06/04	02/07/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
n-Butylbenzene	ND	U	0.50	1	02/06/04	02/07/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/06/04	02/07/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/06/04	02/07/04	
Hexachlorobutadiene	ND	U	1.0	1	02/06/04	02/07/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: 02/03/2004
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: ADEQ-MW3
Lab Code: X2400093-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/06/04	02/07/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/06/04	02/07/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	95	84-113	02/07/04	
Toluene-d8	93	68-126	02/07/04	
4-Bromofluorobenzene	92	79-113	02/07/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected:
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X2400093-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/06/04	02/06/04	
Chloromethane	ND	U	2.0	1	02/06/04	02/06/04	
Vinyl Chloride	ND	U	1.0	1	02/06/04	02/06/04	
Bromomethane	ND	U	1.0	1	02/06/04	02/06/04	
Chloroethane	ND	U	2.0	1	02/06/04	02/06/04	
Trichlorofluoromethane	ND	U	1.0	1	02/06/04	02/06/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/06/04	02/06/04	
1,1-Dichloroethene	ND	U	1.0	1	02/06/04	02/06/04	
Acetone	ND	U	20	1	02/06/04	02/06/04	
Iodomethane	ND	U	2.0	1	02/06/04	02/06/04	
Carbon Disulfide	ND	U	2.0	1	02/06/04	02/06/04	
Methylene Chloride	ND	U	1.0	1	02/06/04	02/06/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/06/04	02/06/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
1,1-Dichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Vinyl Acetate	ND	U	3.0	1	02/06/04	02/06/04	
2,2-Dichloropropane	ND	U	2.0	1	02/06/04	02/06/04	
2-Butanone (MEK)	ND	U	8.0	1	02/06/04	02/06/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
Bromochloromethane	ND	U	0.50	1	02/06/04	02/06/04	
Chloroform	ND	U	1.0	1	02/06/04	02/06/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Carbon Tetrachloride	ND	U	0.50	1	02/06/04	02/06/04	
1,1-Dichloropropene	ND	U	0.50	1	02/06/04	02/06/04	
Benzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Trichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichloropropane	ND	U	0.50	1	02/06/04	02/06/04	
Dibromomethane	ND	U	0.50	1	02/06/04	02/06/04	
Bromodichloromethane	ND	U	0.50	1	02/06/04	02/06/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/06/04	02/06/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/06/04	02/06/04	
Toluene	ND	U	0.50	1	02/06/04	02/06/04	

Comments:

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected:
Date Received: 02/03/2004

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X2400093-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/06/04	02/06/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/06/04	02/06/04	
Tetrachloroethene	ND	U	0.50	1	02/06/04	02/06/04	
2-Hexanone	ND	U	5.0	1	02/06/04	02/06/04	
1,3-Dichloropropane	ND	U	1.0	1	02/06/04	02/06/04	
Dibromochloromethane	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dibromoethane	ND	U	0.50	1	02/06/04	02/06/04	
Chlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Ethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
m,p-Xylenes	ND	U	1.0	1	02/06/04	02/06/04	
o-Xylene	ND	U	0.50	1	02/06/04	02/06/04	
Styrene	ND	U	0.50	1	02/06/04	02/06/04	
Isopropylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
Bromobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/06/04	02/06/04	
n-Propylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
2-Chlorotoluene	ND	U	0.50	1	02/06/04	02/06/04	
4-Chlorotoluene	ND	U	0.50	1	02/06/04	02/06/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
tert-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
sec-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
4-Isopropyltoluene	ND	U	0.50	1	02/06/04	02/06/04	
Bromoform	ND	U	0.50	1	02/06/04	02/06/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/06/04	02/06/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
n-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/06/04	02/06/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
Hexachlorobutadiene	ND	U	1.0	1	02/06/04	02/06/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans	**Service Request:**	X2400093
Project:	Western Ave.	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	02/03/2004

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	X2400093-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/06/04	02/06/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/06/04	02/06/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	96	84-113	02/06/04	
Toluene-d8	90	68-126	02/06/04	
4-Bromofluorobenzene	91	79-113	02/06/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0400220-5

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/06/04	02/06/04	
Chloromethane	ND	U	2.0	1	02/06/04	02/06/04	
Vinyl Chloride	ND	U	1.0	1	02/06/04	02/06/04	
Bromomethane	ND	U	1.0	1	02/06/04	02/06/04	
Chloroethane	ND	U	2.0	1	02/06/04	02/06/04	
Trichlorofluoromethane	ND	U	1.0	1	02/06/04	02/06/04	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/06/04	02/06/04	
1,1-Dichloroethene	ND	U	1.0	1	02/06/04	02/06/04	
Acetone	ND	U	20	1	02/06/04	02/06/04	
Iodomethane	ND	U	2.0	1	02/06/04	02/06/04	
Carbon Disulfide	ND	U	2.0	1	02/06/04	02/06/04	
Methylene Chloride	ND	U	1.0	1	02/06/04	02/06/04	
Methyl tert-Butyl Ether	ND	U	1.0	1	02/06/04	02/06/04	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
1,1-Dichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Vinyl Acetate	ND	U	3.0	1	02/06/04	02/06/04	
2,2-Dichloropropane	ND	U	2.0	1	02/06/04	02/06/04	
2-Butanone (MEK)	ND	U	8.0	1	02/06/04	02/06/04	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
Bromochloromethane	ND	U	0.50	1	02/06/04	02/06/04	
Chloroform	ND	U	1.0	1	02/06/04	02/06/04	
1,1,1-Trichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Carbon Tetrachloride	ND	U	0.50	1	02/06/04	02/06/04	
1,1-Dichloropropene	ND	U	0.50	1	02/06/04	02/06/04	
Benzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Trichloroethene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichloropropane	ND	U	0.50	1	02/06/04	02/06/04	
Dibromomethane	ND	U	0.50	1	02/06/04	02/06/04	
Bromodichloromethane	ND	U	0.50	1	02/06/04	02/06/04	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/06/04	02/06/04	
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/06/04	02/06/04	
Toluene	ND	U	0.50	1	02/06/04	02/06/04	

Comments:

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0400220-5

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
trans-1,3-Dichloropropene	ND	U	1.0	1	02/06/04	02/06/04	
1,1,2-Trichloroethane	ND	U	1.0	1	02/06/04	02/06/04	
Tetrachloroethene	ND	U	0.50	1	02/06/04	02/06/04	
2-Hexanone	ND	U	5.0	1	02/06/04	02/06/04	
1,3-Dichloropropane	ND	U	1.0	1	02/06/04	02/06/04	
Dibromochloromethane	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dibromoethane	ND	U	0.50	1	02/06/04	02/06/04	
Chlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/06/04	02/06/04	
Ethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
m,p-Xylenes	ND	U	1.0	1	02/06/04	02/06/04	
o-Xylene	ND	U	0.50	1	02/06/04	02/06/04	
Styrene	ND	U	0.50	1	02/06/04	02/06/04	
Isopropylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
Bromobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2,3-Trichloropropane	ND	U	1.0	1	02/06/04	02/06/04	
n-Propylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
2-Chlorotoluene	ND	U	0.50	1	02/06/04	02/06/04	
4-Chlorotoluene	ND	U	0.50	1	02/06/04	02/06/04	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
tert-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
sec-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,3-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
4-Isopropyltoluene	ND	U	0.50	1	02/06/04	02/06/04	
Bromoform	ND	U	0.50	1	02/06/04	02/06/04	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/06/04	02/06/04	
1,4-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
n-Butylbenzene	ND	U	0.50	1	02/06/04	02/06/04	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/06/04	02/06/04	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/06/04	02/06/04	
Hexachlorobutadiene	ND	U	1.0	1	02/06/04	02/06/04	

Comments:

Analytical Results

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0400220-5

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Naphthalene	ND	U	3.0	1	02/06/04	02/06/04	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/06/04	02/06/04	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	97	84-113	02/06/04	
Toluene-d8	90	68-126	02/06/04	
4-Bromofluorobenzene	92	79-113	02/06/04	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
GMW-5	X2400093-001	96	93	92
COG-MW3	X2400093-002	93	92	90
ADEQ-MW3	X2400093-003	95	93	92
Trip Blank	X2400093-004	96	90	91
Method Blank	XWG0400220-5	97	90	92
Batch QC	X2400070-001	97	91	91
Batch QCMS	XWG0400220-1	104	99	102
Batch QCDMS	XWG0400220-2	101	96	99
Lab Control Sample	XWG0400220-3	96	96	98
Duplicate Lab Control Sample	XWG0400220-4	94	93	98

Surrogate Recovery Control Limits (%)

Sur1 =	Dibromofluoromethane	84-113
Sur2 =	Toluene-d8	68-126
Sur3 =	4-Bromofluorobenzene	79-113

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Extracted: 02/06/2004
Date Analyzed: 02/06/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: X2400070-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: XWG0400220

Analyte Name	Sample Result	Batch QCMS XWG0400220-1 Matrix Spike			Batch QCDMS XWG0400220-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Dichlorodifluoromethane	ND	13.3	10.0	133	12.7	10.0	127	78-207	5	20
Chloromethane	ND	10.2	10.0	102	9.86	10.0	99	70-157	3	20
Vinyl Chloride	ND	11.6	10.0	116	11.5	10.0	115	79-174	1	20
Bromomethane	ND	9.98	10.0	100	10.0	10.0	100	44-150	0	20
Chloroethane	ND	10.7	10.0	107	10.4	10.0	104	74-150	3	20
Trichlorofluoromethane	ND	11.3	10.0	113	11.1	10.0	111	80-134	2	20
1,1,2-Trichlorotrifluoroethane	ND	11.9	10.0	119	11.3	10.0	113	67-128	5	20
1,1-Dichloroethene	ND	10.6	10.0	106	10.1	10.0	101	71-142	5	20
Acetone	ND	52.0	40.0	130	55.0	40.0	137	1-155	5	20
Iodomethane	ND	44.2	40.0	111	43.3	40.0	108	47-120	2	20
Carbon Disulfide	ND	42.2	40.0	106	38.4	40.0	96	77-126	10	20
Methylene Chloride	ND	10.3	10.0	103	10.1	10.0	101	83-106	2	20
Methyl tert-Butyl Ether	ND	10.7	10.0	107	10.4	10.0	104	70-118	3	20
trans-1,2-Dichloroethene	ND	10.8	10.0	108	10.5	10.0	105	86-115	3	20
1,1-Dichloroethane	ND	11.1	10.0	111	10.7	10.0	107	77-127	3	20
Vinyl Acetate	ND	40.6	40.0	102	35.6	40.0	89	8-187	13	20
2,2-Dichloropropane	ND	10.8	10.0	108	10.4	10.0	104	25-154	4	20
2-Butanone (MEK)	8.2	50.5	40.0	106	50.0	40.0	105	90-112	1	20
cis-1,2-Dichloroethene	ND	11.0	10.0	110	10.8	10.0	108	69-118	1	20
Bromochloromethane	ND	9.93	10.0	99	9.84	10.0	98	47-136	1	20
Chloroform	ND	10.9	10.0	109	10.6	10.0	106	48-143	3	20
1,1,1-Trichloroethane	ND	10.9	10.0	109	10.6	10.0	106	84-122	3	20
Carbon Tetrachloride	ND	11.4	10.0	114	11.2	10.0	112	79-120	2	20
1,1-Dichloropropene	ND	10.4	10.0	104	10.1	10.0	101	85-117	3	20
Benzene	ND	10.9	10.0	109	10.6	10.0	106	88-114	3	20
1,2-Dichloroethane	ND	9.86	10.0	99	9.80	10.0	98	75-112	1	20
Trichloroethene	ND	10.9	10.0	109	10.5	10.0	105	76-115	4	20
1,2-Dichloropropane	ND	10.2	10.0	102	10.0	10.0	100	85-107	1	20
Dibromomethane	ND	9.72	10.0	97	9.64	10.0	96	82-106	1	20
Bromodichloromethane	ND	9.68	10.0	97	9.53	10.0	95	83-107	2	20
cis-1,3-Dichloropropene	ND	9.41	10.0	94	9.20	10.0	92	70-114	2	20
4-Methyl-2-pentanone (MIBK)	ND	40.1	40.0	100	40.0	40.0	100	54-129	0	20
Toluene	ND	9.84	10.0	98	9.60	10.0	96	86-114	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Extracted: 02/06/2004
Date Analyzed: 02/06/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: X2400070-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: XWG0400220

Analyte Name	Sample Result	Batch QCMS XWG0400220-1 Matrix Spike Result	Expected	%Rec	Batch QCDMS XWG0400220-2 Duplicate Matrix Spike Result	Expected	%Rec		%Rec Limits	RPD		RPD Limit
trans-1,3-Dichloropropene	ND	9.94	10.0	99	9.68	10.0	97		73-112	3		20
1,1,2-Trichloroethane	ND	9.27	10.0	93	9.35	10.0	94		79-112	1		20
Tetrachloroethene	ND	9.79	10.0	98	9.62	10.0	96		78-130	2		20
2-Hexanone	ND	37.3	40.0	93	36.9	40.0	92		77-112	1		20
1,3-Dichloropropane	ND	10.1	10.0	101	9.92	10.0	99		45-133	2		20
Dibromochloromethane	ND	9.63	10.0	96	9.17	10.0	92		74-108	5		20
1,2-Dibromoethane	ND	9.75	10.0	98	9.52	10.0	95		73-113	2		20
Chlorobenzene	ND	10.1	10.0	101	9.81	10.0	98		84-111	3		20
1,1,1,2-Tetrachloroethane	ND	9.85	10.0	99	9.56	10.0	96		84-119	3		20
Ethylbenzene	ND	9.96	10.0	100	9.68	10.0	97		47-136	3		20
m,p-Xylenes	ND	19.4	20.0	97	19.1	20.0	96		84-120	2		20
o-Xylene	ND	9.46	10.0	95	9.25	10.0	93		47-143	2		20
Styrene	ND	8.10	10.0	81	6.26	10.0	63	M2	72-121	26	R2	20
Isopropylbenzene	ND	9.63	10.0	96	9.39	10.0	94		63-108	3		20
Bromobenzene	ND	9.46	10.0	95	9.28	10.0	93		80-113	2		20
1,2,3-Trichloropropane	ND	9.84	10.0	98	9.53	10.0	95		78-119	3		20
n-Propylbenzene	ND	9.84	10.0	98	9.62	10.0	96		76-117	2		20
2-Chlorotoluene	ND	9.78	10.0	98	9.45	10.0	95		79-121	3		20
4-Chlorotoluene	ND	9.78	10.0	98	9.58	10.0	96		70-133	2		20
1,3,5-Trimethylbenzene	ND	9.68	10.0	97	9.38	10.0	94		79-118	3		20
tert-Butylbenzene	ND	9.76	10.0	98	9.53	10.0	95		77-120	2		20
1,2,4-Trimethylbenzene	ND	8.98	10.0	90	8.37	10.0	84		68-127	7		20
sec-Butylbenzene	ND	9.45	10.0	95	9.33	10.0	93		78-123	1		20
1,3-Dichlorobenzene	ND	9.58	10.0	96	9.33	10.0	93		78-127	3		20
4-Isopropyltoluene	ND	9.63	10.0	96	9.37	10.0	94		79-142	3		20
Bromoform	ND	8.81	10.0	88	8.40	10.0	84		83-111	5		20
1,1,2,2-Tetrachloroethane	ND	9.63	10.0	96	9.22	10.0	92		66-133	4		20
1,4-Dichlorobenzene	ND	9.78	10.0	98	9.59	10.0	96		48-139	2		20
1,2-Dichlorobenzene	ND	10.1	10.0	101	9.94	10.0	99		64-109	1		20
n-Butylbenzene	ND	9.95	10.0	100	9.63	10.0	96		69-122	3		20
1,2-Dibromo-3-chloropropane	ND	9.49	10.0	95	9.07	10.0	91		54-160	5		20
1,2,4-Trichlorobenzene	ND	9.21	10.0	92	9.15	10.0	92		39-145	1		20
Hexachlorobutadiene	ND	10.7	10.0	107	10.1	10.0	101		74-113	6		20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Extracted: 02/06/2004
Date Analyzed: 02/06/2004

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: X2400070-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: XWG0400220

Analyte Name	Sample Result	Batch QCMS XWG0400220-1 Matrix Spike			Batch QCDMS XWG0400220-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Naphthalene	ND	8.84	10.0	88	8.53	10.0	85	44-167	4	20
1,2,3-Trichlorobenzene	ND	9.86	10.0	99	9.56	10.0	96	37-158	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Extracted: 02/06/2004
Date Analyzed: 02/06/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0400220

	Lab Control Sample XWG0400220-3 Lab Control Spike			Duplicate Lab Control Sample XWG0400220-4 Duplicate Lab Control Spike					
Analyte Name	Result	Expected	%Rec	Result	Expected	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	13.2	10.0	132	11.7	10.0	117	1-233	12	20
Chloromethane	10.8	10.0	108	9.51	10.0	95	46-156	13	20
Vinyl Chloride	12.5	10.0	125	10.8	10.0	108	51-158	14	20
Bromomethane	10.4	10.0	104	9.96	10.0	100	37-149	5	20
Chloroethane	11.3	10.0	113	9.86	10.0	99	56-146	13	20
Trichlorofluoromethane	11.6	10.0	116	10.3	10.0	103	69-139	12	20
1,1,2-Trichlorotrifluoroethane	11.1	10.0	111	9.95	10.0	100	83-130	11	20
1,1-Dichloroethene	9.75	10.0	98	8.95	10.0	90	65-112	9	20
Acetone	34.1	40.0	85	32.6	40.0	81	68-128	5	20
Iodomethane	42.9	40.0	107	39.6	40.0	99	68-144	8	20
Carbon Disulfide	41.8	40.0	105	37.3	40.0	93	67-140	11	20
Methylene Chloride	10.0	10.0	100	9.41	10.0	94	70-113	6	20
Methyl tert-Butyl Ether	8.95	10.0	90	9.35	10.0	94	75-115	4	20
trans-1,2-Dichloroethene	10.1	10.0	101	9.37	10.0	94	73-118	8	20
1,1-Dichloroethane	10.8	10.0	108	9.78	10.0	98	77-127	10	20
Vinyl Acetate	31.5	40.0	79	35.1	40.0	88	51-202	11	39
2,2-Dichloropropane	9.86	10.0	99	8.82	10.0	88	75-132	11	20
2-Butanone (MEK)	33.8	40.0	85	32.1	40.0	80	72-122	5	20
cis-1,2-Dichloroethene	10.3	10.0	103	9.44	10.0	94	81-118	9	20
Bromochloromethane	9.04	10.0	90	8.81	10.0	88	82-114	3	20
Chloroform	10.3	10.0	103	9.53	10.0	95	78-119	8	20
1,1,1-Trichloroethane	10.3	10.0	103	9.28	10.0	93	71-125	10	20
Carbon Tetrachloride	10.7	10.0	107	9.63	10.0	96	69-130	11	20
1,1-Dichloropropene	9.96	10.0	100	9.04	10.0	90	77-114	10	20
Benzene	10.5	10.0	105	9.56	10.0	96	81-117	10	20
1,2-Dichloroethane	9.15	10.0	92	8.85	10.0	89	67-122	3	20
Trichloroethene	10.5	10.0	105	9.56	10.0	96	79-114	10	20
1,2-Dichloropropane	9.68	10.0	97	8.94	10.0	89	78-114	8	20
Dibromomethane	8.88	10.0	89	8.75	10.0	88	78-113	1	20
Bromodichloromethane	9.44	10.0	94	9.05	10.0	91	79-122	4	20
cis-1,3-Dichloropropene	9.35	10.0	94	9.03	10.0	90	82-118	3	20
4-Methyl-2-pentanone (MIBK)	33.5	40.0	84	35.4	40.0	89	75-115	6	20
Toluene	9.71	10.0	97	9.00	10.0	90	85-118	8	20
trans-1,3-Dichloropropene	9.26	10.0	93	9.18	10.0	92	79-121	1	20
1,1,2-Trichloroethane	8.50	10.0	85	8.53	10.0	85	79-116	0	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: GeoTrans
Project: Western Ave.
Sample Matrix: Water

Service Request: X2400093
Date Extracted: 02/06/2004
Date Analyzed: 02/06/2004

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0400220

	Lab Control Sample XWG0400220-3 Lab Control Spike			Duplicate Lab Control Sample XWG0400220-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Tetrachloroethene	9.43	10.0	94	8.62	10.0	86	76-127	9	20
2-Hexanone	29.2	40.0	73	32.3	40.0	81	65-120	10	20
1,3-Dichloropropane	9.22	10.0	92	9.12	10.0	91	81-116	1	20
Dibromochloromethane	8.78	10.0	88	8.69	10.0	87	77-119	1	20
1,2-Dibromoethane	8.65	10.0	87	8.87	10.0	89	79-116	3	20
Chlorobenzene	9.99	10.0	100	9.32	10.0	93	84-114	7	20
1,1,1,2-Tetrachloroethane	9.76	10.0	98	9.20	10.0	92	78-118	6	20
Ethylbenzene	9.92	10.0	99	9.03	10.0	90	79-124	9	20
m,p-Xylenes	19.5	20.0	97	18.0	20.0	90	75-131	8	20
o-Xylene	9.51	10.0	95	8.67	10.0	87	78-122	9	20
Styrene	9.57	10.0	96	9.01	10.0	90	80-126	6	20
Isopropylbenzene	9.48	10.0	95	8.62	10.0	86	75-126	10	20
Bromobenzene	9.24	10.0	92	8.89	10.0	89	82-122	4	20
1,2,3-Trichloropropane	9.07	10.0	91	9.13	10.0	91	77-118	1	20
n-Propylbenzene	9.74	10.0	97	8.93	10.0	89	75-129	9	20
2-Chlorotoluene	9.76	10.0	98	9.00	10.0	90	77-126	8	20
4-Chlorotoluene	9.78	10.0	98	9.04	10.0	90	82-120	8	20
1,3,5-Trimethylbenzene	9.80	10.0	98	8.95	10.0	90	75-130	9	20
tert-Butylbenzene	9.67	10.0	97	8.72	10.0	87	73-130	10	20
1,2,4-Trimethylbenzene	9.81	10.0	98	8.97	10.0	90	60-137	9	20
sec-Butylbenzene	9.34	10.0	93	8.50	10.0	85	68-131	9	20
1,3-Dichlorobenzene	9.42	10.0	94	8.89	10.0	89	71-137	6	20
4-Isopropyltoluene	9.54	10.0	95	8.66	10.0	87	68-134	10	20
Bromoform	8.31	10.0	83	8.31	10.0	83	70-118	0	20
1,1,2,2-Tetrachloroethane	8.31	10.0	83	8.79	10.0	88	72-122	6	20
1,4-Dichlorobenzene	9.67	10.0	97	9.09	10.0	91	82-114	6	20
1,2-Dichlorobenzene	9.90	10.0	99	9.31	10.0	93	81-118	6	20
n-Butylbenzene	9.69	10.0	97	8.73	10.0	87	71-125	10	20
1,2-Dibromo-3-chloropropane	8.55	10.0	86	9.31	10.0	93	55-131	9	20
1,2,4-Trichlorobenzene	8.93	10.0	89	8.57	10.0	86	75-123	4	20
Hexachlorobutadiene	10.8	10.0	108	9.47	10.0	95	63-140	13	20
Naphthalene	7.83	10.0	78	8.17	10.0	82	67-125	4	20
1,2,3-Trichlorobenzene	9.12	10.0	91	9.00	10.0	90	72-124	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 East University Drive, Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • (800) 695-7222 x09 • FAX (602) 437-5308

DATE 2/3/04 PAGE 1 OF 1

PROJECT NAME Western Ave. #
PROJECT MANAGER Paul Plotto
COMPANY/ADDRESS GeoTrans Inc.
4665 S. Ash Ave. Suite G-1, Tempe, AZ, 85282
480 839-2800 PHONE/FAX 480-839-2828
SAMPLER'S SIGNATURE [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	PRESERVATION	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GC/MS 624/8260	Halogenated Volatile Organics 601/8021	Halogenated & Aromatic Volatiles 601/602 ☐ 8021 ☐	TPH/8015AZ R1 C_{10}-C_{32}	Total Petroleum Hydrocarbons EPA 418.1 / 418.1 AZ	Base Neutral Acid Organics GC/MS 625/8270	8RCRA Metals Total ☐ TCLP ☐	Lead Total ☐ TCLP ☐	Flash Point ☐ pH ☐ Paint Filter ☐	TVPH as Gasoline 8015 AZ C_8-C_{10}	PAH 8310 ☐ 8270 ☐					REMARKS
GMW-5	2-3	8:33	0093-001		HCL			X															
LOG-MW3	2-3	9:48	002		HCL			X															
ADEQ-MW3	2-3	9:48	003		HCL			X															
Trip Blank			004					X															

SPECIAL INSTRUCTIONS/COMMENTS:

REPORT REQUIREMENTS
___ I. Routine Report
X II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No: X2400093

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	GeoTrans	2-3/1540	Leslie May	CAS	2/3/04 1540
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time

ANALYSIS TAT (Circle One)
STANDARD
RUSH TAT - Surcharges Apply
☐ 24 Hours
☐ 48 Hours
☐ 72 Hours

X24 0093

Columbia Analytical Services, Inc.
Phoenix, AZ

Sample Receipt and Preservation Form

Client: Geo Trans Project Name: Western Ave

Sample(s) Received on: 2/3/04 date ~~15~~ 1540 time

VOA's ☑ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐ Tedlar Bags ☐

MATRIX: SOIL ☐ WATER ☑ VAPOR ☐

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

1. Rush or standard turn-a-round time? RUSH (STANDARD)
2. Are the custody seals present? Yes ☐ No ☑
   If yes, how many and where? _____
3. Are the signature and date correct? Yes ☑ No ☐
4. Did all containers arrive in good condition? Yes ☑ No ☐
5. Are all container labels complete (i.e. preservation, sample ID)? Yes ☑ No ☐
6. Were the correct containers used for the tests indicated? Yes ☑ No ☐
7. Have VOA's been checked for the presence of air bubbles? (note problems in comments) Yes ☑ No ☐ N/A ☐
8. Temperature of sample(s) upon receipt: 2.6°C

Explaination of discrepancies: _____

		YES	NO
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		
2	HCl		

VOA Vial pH Verification
(Tested After Analysis)
☐ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

Comments: _____

Form Completed and Sample(s) Received by (initials): Lm

r:\common\forms\samprev.doc
Revised: 08/14/03 11:51 AM

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: Westover Ave.
Job Number:
Location:
Recorded by: J. Bubbles

Well ID: LOA-MW1 Sample ID: LOA-MW1
Date: 1-29-04 Time: 11:15

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☐ PVC ☒ St. Steel ☐ Other
Sampled by: Jason Bubbles

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 85'
Water Level Depth (WL in feet BTOC): 62.76
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☒ Submersible 2" ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(85 (TD feet) - 62.76 (WL feet)) X 4 (D inches)^2 X 3 (#Vols) X 0.0408 = 43.67 gallons (Calculated Purge Volume)

PURGE TIME

11:34 Start
11:57 Stop
Elapsed

PURGE RATE

Initial 3.5 gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7819 gals
Final 7871 gals

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (mS/cm)	DO (mg/L)	pH	TDS (g/L)	ORP (mV)	Turbidity (NTU)
11:30 / 0	24.86	2.26	6.33	6.71	1.4	229	
11:41 / 2	25.28	1.94	4.65	6.91	1.3	218	
11:43 / 4	25.37	1.74	4.31	6.97	1.1	212	
11:45 / 6	25.34	1.69	4.17	6.99	1.1	211	
11:47 / 8	25.36	1.67	4.09	6.99	1.0	210	
11:49 / 10	25.37	1.65	4.09	6.99	1.0	210	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: 3" disposable
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump
☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
LOA-MW1	3x40mL	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

EOTRANS, INC

GROUNDWATER SAMPLING FORM

Name: Wester Ave
Number:
cation:
corded by: Jason Brubaker

Well ID: MW-2 Sample ID: MW-2
Date: 1-29 Time: 1245

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☒ St. Steel ☐ Other
Sampled by: Jason Brubaker

WELL PURGING

URGE VOLUME

asing Diameter (D in inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other:
otal Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC):
lumber of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☒ Submersible 2" ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC)
from to

PURGE VOLUME CALCULATION:

Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 68.05 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 23.5 gallons
Calculated Purge Volume

PURGE TIME

1:33 Start
13:40 Stop
Elapsed

PURGE RATE

Initial 2 gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7871 gals
Final 7903 gals

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (umhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
13:23 / 0	25.22	1.125	5.27	6.00	0.7	241	
13:34 / 1	25.21	1.125	3.30	6.94	0.7	238	
13:35 / 2	25.21	1.123	2.80	6.98	0.7	230	
13:37 / 4	25.24	1.128	2.52	7.00	0.7	222	
	25.25	1.130	2.41	7.01	0.7	219	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments

UALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Equipment	EB-1

Other Samples

Type	Sample No.

EOTRANS, INC

GROUNDWATER SAMPLING FORM

Name: Western Ave
Number:
cation:
corded by: Jason Ballin

Well ID: MW-3 Sample ID: MW-3
Date: 1-29 Time:

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Ballin

WELL PURGING

URGE VOLUME

asing Diameter (D in Inches):
2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
otal Depth of Casing (TD in feet BTOC):
Vater Level Depth (WL in feet BTOC): 6.50
umber of Well Volumes to be Purged (#Vols)
3 ☐ 4 ☐ 5 ☐ 6 ☐ Other: low flow

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC)
from to

PURGE VOLUME CALCULATION

Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(low flow (TD (feet) − WL (feet))) X ____ ^{2} (D (inches)) X ____ (#Vols) X 0.0408 = ____ gallons
Calculated Purge Volume

PURGE TIME

15:25 Start
Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7903 gals
Final gals

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (uhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
15:25 / 0	25.31	1.306	4.49	6.83	0.8	201	
15:27 / 2	25.78	1.307	3.84	6.90	0.8	171	
15:29 / 3	25.95	1.306	3.65	6.90	0.8	165	
15:31 / 4	26.30	1.307	3.59	6.96	0.8	152	
	26.28	1.307	3.58	6.96	0.8	152	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-3	3x40mL	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: Western Ave
Job Number:
Location:
Recorded by: Jason Bulla

Well ID: MW-4 Sample ID: MW-4
Date: 1-29 Time: 16:00

Well Type: ☑ Monitor ☐ Extraction
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Bulla

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 64.95
Number of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other: low-flow

PURGE METHOD

☐ Bailer - Type:
☑ Submersible dedicated ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC)
from to

PURGE VOLUME CALCULATION:

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(____ TD (feet) - ____ WL (feet)) X ____ ^{2} D (inches) X ____ #Vols X 0.0408 = ____ gallons Calculated Purge Volume

PURGE TIME

16:04 Start
16:12 Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7916.5 gals
Final 7923.5 gals

ACTUAL PURGE VOLUME

13 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (umhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
16:04 / 0	24.49	1.131	5.86	6.95	0.7	170	
16:06 / 2	25.19	1.131	5.16	7.10	0.7	119	
16:08 / 4	25.03	1.133	5.16	7.11	0.7	129	
16:10 / 8	25.01	1.134	5.07	7.10	0.7	135	
16:12 / 10	24.90	1.134	5.1	7.09	0.7	140	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump
☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-4	3X 40ML	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

EOTRANS, INC

GROUNDWATER SAMPLING FORM

b Name: Western AVE
b Number:
ocation:
ecorded by: Jason Bulkley

Well ID: MW-5 Sample ID: MW-5
Date: 1-29 Time: 16:30

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Bulkley

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 36.37
Number of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☒ Other: low flow

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC)
from to

PURGE VOLUME CALCULATION:

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(TD (feet) - WL (feet)) X D (inches)^2 X #Vols X 0.0408 = gallons
Calculated Purge Volume

PURGE TIME

16:00 Start
16:57 Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7913.0 gals
Final 7921.6 gals

ACTUAL PURGE VOLUME

8 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (mS) (uMhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
16:40/0	24.67	1.57	5.21	6.98	1.0	209	
16:46/2	25.03	1.54	4.96	7.00	1.0	195	
16:48/4	25.30	1.55	4.90	7.01	1.0	182	
16:50/6	25.39	1.52	4.93	7.02	1.0	180	
16:52/8	25.40	1.52	4.96	7.01	1.0	180	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-5	3 x 40ml	8260	HCL	Cas	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GROUNDWATER SAMPLING FORM

Job Name: Western Ave
Job Number:
Location:
Recorded by: Jason Burkhart

Well ID: MW-6 Sample ID: MW-6
Date: 1-30 Time: 10:00

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Burkhart

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 65.5
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other: ~~Low Flow~~

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☒ Other - Type: dedicated

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 65.5 (WL (feet))) x 4 (D (inches))^2 x 3 (#Vols) x ~~0.0408~~ = 28.5 gallons
Calculated Purge Volume

PURGE TIME

10:26 Start
10:33 Stop
Elapsed

PURGE RATE

Initial 3.5 gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7970.0 gals
Final 7962.0 gals

ACTUAL PURGE VOLUME

32 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (µmhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
10:26 / 0	24.23	1.60	6.64	6.99	1.0	252	
10:28 / 2	25.52	1.57	6.18	7.07	1.0	242	
10:30 / 4	25.62	1.60	6.17	7.06	1.0	234	
10:32 / 6	25.70	1.60	6.13	7.06	1.0	230	

Observations during pumping (well condition, turbidity, odor, color):
Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump
☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-6	3x40mL	8260	HCL	LAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GROUNDWATER SAMPLING FORM

Job Name: Western AVL
Job Number:
Location:
Recorded by: Jason Bubblum

Well ID: MW-7
Date: 1-30
Sample ID: MW-7
Time: 9:00

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Bubblum

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 59.4
Number of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☒ Other: low flow

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☒ Other - Type: dedicated

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(TD (feet) - WL (feet)) X D (inches)^2 X #Vols X 0.0408 = gallons
Calculated Purge Volume

PURGE TIME

8:59 Start
9:09 Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7920.0 gals
Final 7929.8 gals

ACTUAL PURGE VOLUME

9.8 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (mS) (µmhos/cm)	DO (mg/L)	pH	TDS (g/L)	ORP (mV)	Turbidity (NTU)
09:59 0	24.44	2.05	6.37	7.04	1.3	182	
09:01 2	25.00	2.04	6.12	7.05	1.3	176	
09:03 4	25.09	2.04	6.12	7.04	1.3	180	
09:05 6	25.13	2.06	6.20	7.03	1.3	183	
09:07 8	25.08	2.06	6.17	7.03	1.3	186	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump
☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-7	4 x mb	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: Western Ave
Job Number:
Location:
Recorded by: Jason Bailey

Well ID: GMW-5 Sample ID: GMW-5
Date: 2-3 Time: 9:00

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Bailey

WELL PURGING

PURGE VOLUME

Casing Diameter (D in Inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 110
Water Level Depth (WL in feet BTOC): 58.88
Number of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type: Waterra

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(110 (TD (feet)) - 58.88 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 100 gallons (Calculated Purge Volume)

PURGE TIME

8:10 Start
9:33 Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 7962 gals
Final 8070 gals

ACTUAL PURGE VOLUME

108 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (uhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
8:10 / 0	11.03	2.03	3.87	7.47	1.3	320	
8:14 / 4	24.99	1.96	4.04	7.16	1.3	44	
8:17 / 7	25.10	1.98	6.14	7.17	1.3	95	
8:19 / 9	25.10	1.99	6.27	7.16	1.3	103	
8:23 / 13	25.12	2.06	6.29	7.15	1.3	130	
8:27 / 17	25.12	2.00	6.31	7.14	1.3	135	
8:31 / 21	25.12	2.06	6.22	7.14	1.3	144	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump
☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
GMW-5	3x40 ml	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: Westinghouse
Job Number:
Location:
Recorded by: Jason Bentley

Well ID: C06-MW-3 Sample ID: C06-MW-3
Date: 2-3 Time: 9:20

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Jason Bentley

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC):
Number of Well Volumes to be Purged (#Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☒ Other: Low Flow

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(TD (feet) - WL (feet)) X D (inches)^2 X #Vols X 0.0408 = gallons
Calculated Purge Volume

PURGE TIME

9:36 Start
9:40 Stop
Elapsed

PURGE RATE

Initial gpm
Final gpm
Avg gpm

TOTALIZER

Initial 5079 gals
Final gals

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☐ °C ☐ °F	Conductivity (uhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
9:30 / 0	23.20	1.50	4.05	6.76	1.0	198	
9:32 / 2	24.77	1.56	3.60	7.00	1.0	190	
9:35 / 5	24.78	1.59	4.28	7.06	1.0	190	
9:38 / 8	24.78	1.58	4.37	7.06	1.0	191	
9:40 / 10	24.79	1.58	4.42	7.06	1.0	192	
9:42 / 12	24.88	1.56	4.41	7.05	1.0	192	

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☐ Other:

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☐ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
C06-MW-3	3x40mL	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
C06-MW-3	ADF6-MW3

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

ARIZONA DATA QUALIFIERS

Method Blank:

B1	Target analyte detected in method blank at or above the method reporting limit.
B2	Non-target analyte detected in method blank and sample, producing interference.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B4	Target analyte detected in blank at/above method acceptance criteria.
B5	Target analyte detected in method blank at or above the method reporting limit, but below trigger level or MCL.
B6	Target analyte detected in calibration blank at or above the method reporting limit, but below trigger level or MCL.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the method blank.

Confirmation:

C1	Confirmatory analysis not performed as required by the method.
C2	Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data.
C3	Qualitative confirmation performed. See case narrative.
C4	Confirmatory analysis was past holding time.
C5	Confirmatory analysis was past holding time. Original result not confirmed.

Dilution:

D1	Sample required dilution due to matrix interference. See case narrative.
D2	Sample required dilution due to high concentration of target analyte.
D3	Sample dilution required due to insufficient sample.
D4	Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed.

Estimated concentration:

E1	Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E3	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL).
E5	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis.
E6	Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria.
E7	Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria.

Hold Time:

H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.

Laboratory fortified blank/blank spike:

L1	The associated blank spike recovery was above laboratory acceptance limits. See case narrative.
L2	The associated blank spike recovery was below laboratory acceptance limits. See case narrative.

L3 The associated blank spike recovery was above method acceptance limits. See case narrative.
L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.

Matrix spike:

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.
M2 Matrix spike recovery was low, the method control sample recovery was acceptable.
M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.
M5 Analyte concentration was determined by the method of standard addition (MSA).
M6 Matrix spike recovery was high. Data reported per ADEQ policy 0154.000.
M7 Matrix sipke recovery was low. Data reported per ADEQ policy 0154.000.

General:

N1 See case narrative.
N2 See corrective action report.

Sample quality:

Q1 Sample integrity was not maintained. See case narrative.
Q2 Sample received with head space.
Q3 Sample received with improper chemical preservation.
Q4 Sample received and analyzed without chemical preservation.
Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.
Q6 Sample was received above recommended temperature.
Q7 Sample inadequately dechlorinated.
Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.
Q9 Insufficient sample received to meet QC requirements.
Q10 Sample received in inappropriate sample container.
Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

Duplicates:

R1 RPD exceeded the method control limit. See case narrative.
R2 RPD exceeded the laboratory control limit. See case narrative.
R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.
R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R8 Sample RPD exceeded the method control limit.
R9 Sample RPD exceeded the laboratory control limit.

Surrogate:

S1 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
S2 Surrogate recovery was above laboratory and method acceptance limits.
S3 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample.

S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

S5 Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

S7 Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.

S8 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable.

S9 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

S11 Surrogate recovery was high. Data reported per ADEQ policy 0154.000.

S12 Surrogate recovery was low. Data reported per ADEQ policy 0154.000.

Method/analyte discrepancies:

T1 Method promulgated by EPA, but not ADHS at this time.

T2 Cited ADHS licensed method does not contain this analyte as part of method compound list.

T3 Method not promulgated either by EPA or ADHS.

T4 Tentatively identified compound. Concentration is estimated and based on the closest internal standard.

Calibration verification:

V1 CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

V2 CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample.

V3 CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative.

V4 CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample.

V5 CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B.

V6 Data reported from one-point calibration criteria per ADEQ policy 0155.000.

V7 Calibration verification recovery was above the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

V8 Calibration verification recovery was below the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

Calibration:

W1 The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria as specified in EPA method 8000B.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The reported value is estimated because of the presence of matrix interference.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

3902 East University Dr., Suite 4 Phoenix, AZ 85034 (602) 437-2001 ph (800) 695-7222 x 09 (602) 437-5308 fax

Columbia Analytical Services INC.
An Employee - Owned Company

February 14, 2005

Paul Plato
GeoTrans, Inc.
4801 E. Washington, Suite 260
Phoenix, AZ 85034

RE: Western Ave. / Project #1303.016.07

Dear Paul:

Enclosed are the results of the samples submitted to our laboratory on January 31, 2005. For your reference, these analyses have been assigned our service request number X0500116.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the Arizona Department of Health Services (License number: AZ0497).

If you have any questions, please call me at (602) 437-2001, extension 223.

Respectfully submitted,

Columbia Analytical Services, Inc.

Frank Martinez for

Tracy Dutton
Laboratory Director

TD/lm

NELAP Accredited ACIL Seal of Excellence Award

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	GeoTrans, Inc.	**Service Request No.:**	X0500116
Project:	Western Ave. / Project #1303.016.07	**Date Received:**	January 31, 2005
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

The samples were received for analysis at Columbia Analytical Services on January 31, 2005. No discrepancies were noted upon initial sample inspection. Any exceptions would be noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260B

Calibration verification recovery was below the method control limit for 1,3-Dichloropropane, 1,2-Dibromoethane, Chlorobenzene, Bromobenzene and 1,3-Dichlorobenzene, however the average % difference or % drift for all the analytes met method criteria. These compounds were all detected in the method reporting limit standard that was analyzed with this batch of samples verifying that they would be seen if present in the samples.

The associated blank spike (XWG0500208-3 and XWG0500208-3) recovery for several target analytes was above laboratory acceptance limits. These analytes were not detected in any of the samples

Surrogate recovery for Dibromomfluoromethane was above laboratory acceptance limits for samples MW-5 (X0500116-005) and GMW-5 (X0500116–010), but within method acceptance limits.

Matrix spike (XWG0500208-1 and XWG0500208-2) recovery was high for several compounds, the method control sample recovery was acceptable.

Approved by _____ **Date** 2/15/05

ARIZONA DATA QUALIFIERS

Method Blank:

B1	Target analyte detected in method blank at or above the method reporting limit.
B2	Non-target analyte detected in method blank and sample, producing interference.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B4	Target analyte detected in blank at/above method acceptance criteria.
B5	Target analyte detected in method blank at or above the method reporting limit, but below trigger level or MCL.
B6	Target analyte detected in calibration blank at or above the method reporting limit, but below trigger level or MCL.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the method blank.

Confirmation:

C1	Confirmatory analysis not performed as required by the method.
C2	Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data.
C3	Qualitative confirmation performed. See case narrative.
C4	Confirmatory analysis was past holding time.
C5	Confirmatory analysis was past holding time. Original result not confirmed.

Dilution:

D1	Sample required dilution due to matrix interference. See case narrative.
D2	Sample required dilution due to high concentration of target analyte.
D3	Sample dilution required due to insufficient sample.
D4	Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed.

Estimated concentration:

E1	Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E3	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL).
E5	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis.
E6	Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria.
E7	Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria.

Hold Time:

H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.

Laboratory fortified blank/blank spike:

L1	The associated blank spike recovery was above laboratory acceptance limits. See case narrative.
L2	The associated blank spike recovery was below laboratory acceptance limits. See case narrative.

L3 The associated blank spike recovery was above method acceptance limits. See case narrative.
L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.

Matrix spike:

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.
M2 Matrix spike recovery was low, the method control sample recovery was acceptable.
M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.
M5 Analyte concentration was determined by the method of standard addition (MSA).
M6 Matrix spike recovery was high. Data reported per ADEQ policy 0154.000.
M7 Matrix sipke recovery was low. Data reported per ADEQ policy 0154.000.

General:

N1 See case narrative.
N2 See corrective action report.

Sample quality:

Q1 Sample integrity was not maintained. See case narrative.
Q2 Sample received with head space.
Q3 Sample received with improper chemical preservation.
Q4 Sample received and analyzed without chemical preservation.
Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.
Q6 Sample was received above recommended temperature.
Q7 Sample inadequately dechlorinated.
Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.
Q9 Insufficient sample received to meet QC requirements.
Q10 Sample received in inappropriate sample container.
Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

Duplicates:

R1 RPD exceeded the method control limit. See case narrative.
R2 RPD exceeded the laboratory control limit. See case narrative.
R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.
R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.
R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.
R8 Sample RPD exceeded the method control limit.
R9 Sample RPD exceeded the laboratory control limit.

Surrogate:

S1 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
S2 Surrogate recovery was above laboratory and method acceptance limits.
S3 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample.

S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

S5 Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

S7 Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.

S8 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable.

S9 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

S11 Surrogate recovery was high. Data reported per ADEQ policy 0154.000.

S12 Surrogate recovery was low. Data reported per ADEQ policy 0154.000.

Method/analyte discrepancies:

T1 Method promulgated by EPA, but not ADHS at this time.

T2 Cited ADHS licensed method does not contain this analyte as part of method compound list.

T3 Method not promulgated either by EPA or ADHS.

T4 Tentatively identified compound. Concentration is estimated and based on the closest internal standard.

Calibration verification:

V1 CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

V2 CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample.

V3 CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative.

V4 CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample.

V5 CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B.

V6 Data reported from one-point calibration criteria per ADEQ policy 0155.000.

V7 Calibration verification recovery was above the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

V8 Calibration verification recovery was below the method control limit for this analyte however the average % difference or % drift for all the analytes met method criteria.

Calibration:

W1 The % RSD for this compound was above 15%. The average % RSD for all compounds in the calibration met the 15% criteria as specified in EPA method 8000B.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The reported value is estimated because of the presence of matrix interference.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07

Service Request: X0500116

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
MW-1	X0500116-001	01/28/2005	01/31/2005
MW-2	X0500116-002	01/28/2005	01/31/2005
MW-3	X0500116-003	01/28/2005	01/31/2005
MW-4	X0500116-004	01/27/2005	01/31/2005
MW-5	X0500116-005	01/27/2005	01/31/2005
MW-6	X0500116-006	01/27/2005	01/31/2005
MW-7	X0500116-007	01/28/2005	01/31/2005
ADEQ MW-1	X0500116-008	01/28/2005	01/31/2005
ADEQ MW-6	X0500116-009	01/27/2005	01/31/2005
GMW-5	X0500116-010	01/27/2005	01/31/2005
EB-1	X0500116-011	01/28/2005	01/31/2005
Trip Blank	X0500116-012	01/27/2005	01/31/2005

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Frank Martinez

Name: FRANK MARTINEZ

Date: 2/15/05

Title: QA MANAGER

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-1
Lab Code: X0500116-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-1
Lab Code: X0500116-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**5.1**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-1
Lab Code: X0500116-001

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	122	66-123	02/07/05	
Toluene-d8	120	69-130	02/07/05	
4-Bromofluorobenzene	110	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-2
Lab Code: X0500116-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-2
Lab Code: X0500116-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**2.1**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/28/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	MW-2	**Units:**	ug/L
Lab Code:	X0500116-002	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	116	66-123	02/07/05	
Toluene-d8	111	69-130	02/07/05	
4-Bromofluorobenzene	107	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: X0500116-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: X0500116-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: X0500116-003

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	120	66-123	02/07/05	
Toluene-d8	111	69-130	02/07/05	
4-Bromofluorobenzene	111	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-4
Lab Code: X0500116-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-4
Lab Code: X0500116-004

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**1.9**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-4
Lab Code: X0500116-004

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	122	66-123	02/07/05	
Toluene-d8	119	69-130	02/07/05	
4-Bromofluorobenzene	113	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-5
Lab Code: X0500116-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-5
Lab Code: X0500116-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**1.4**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/27/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	MW-5	**Units:**	ug/L
Lab Code:	X0500116-005	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	124	66-123	02/07/05	S1
Toluene-d8	113	69-130	02/07/05	
4-Bromofluorobenzene	111	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-6
Lab Code: X0500116-006

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-6
Lab Code: X0500116-006

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/27/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	MW-6	**Units:**	ug/L
Lab Code:	X0500116-006	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	123	66-123	02/07/05	
Toluene-d8	116	69-130	02/07/05	
4-Bromofluorobenzene	111	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: X0500116-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: X0500116-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**0.81**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/28/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	X0500116-007	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	122	66-123	02/07/05	
Toluene-d8	118	69-130	02/07/05	
4-Bromofluorobenzene	109	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: ADEQ MW-1
Lab Code: X0500116-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: ADEQ MW-1
Lab Code: X0500116-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**3.9**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/28/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	ADEQ MW-1	**Units:**	ug/L
Lab Code:	X0500116-008	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	123	66-123	02/07/05	
Toluene-d8	116	69-130	02/07/05	
4-Bromofluorobenzene	112	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: ADEQ MW-6
Lab Code: X0500116-009

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: ADEQ MW-6
Lab Code: X0500116-009

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/27/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	ADEQ MW-6	**Units:**	ug/L
Lab Code:	X0500116-009	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	120	66-123	02/07/05	
Toluene-d8	115	69-130	02/07/05	
4-Bromofluorobenzene	109	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: GMW-5
Lab Code: X0500116-010

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: GMW-5
Lab Code: X0500116-010

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	**0.86**		0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/27/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	GMW-5	**Units:**	ug/L
Lab Code:	X0500116-010	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	124	66-123	02/07/05	S1
Toluene-d8	118	69-130	02/07/05	
4-Bromofluorobenzene	114	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: EB-1
Lab Code: X0500116-011

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: EB-1
Lab Code: X0500116-011

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/28/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: EB-1
Lab Code: X0500116-011

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	117	66-123	02/07/05	
Toluene-d8	113	69-130	02/07/05	
4-Bromofluorobenzene	103	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X0500116-012

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: 01/27/2005
Date Received: 01/31/2005

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X0500116-012

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	01/27/2005
Sample Matrix:	Water	**Date Received:**	01/31/2005

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	X0500116-012	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	110	66-123	02/07/05	
Toluene-d8	117	69-130	02/07/05	
4-Bromofluorobenzene	106	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0500208-5

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Dichlorodifluoromethane	ND	U	3.0	1	02/07/05	02/07/05	
Chloromethane	ND	U	2.0	1	02/07/05	02/07/05	
Vinyl Chloride	ND	U	1.0	1	02/07/05	02/07/05	
Bromomethane	ND	U	1.0	1	02/07/05	02/07/05	
Chloroethane	ND	U	2.0	1	02/07/05	02/07/05	
Trichlorofluoromethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1,2-Trichlorotrifluoroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,1-Dichloroethene	ND	U	1.0	1	02/07/05	02/07/05	
Acetone	ND	U	20	1	02/07/05	02/07/05	
Iodomethane	ND	U	4.0	1	02/07/05	02/07/05	
Carbon Disulfide	ND	U	2.0	1	02/07/05	02/07/05	
Methylene Chloride	ND	U	2.0	1	02/07/05	02/07/05	L1
Methyl tert-Butyl Ether	ND	U	1.0	1	02/07/05	02/07/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,1-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Vinyl Acetate	ND	U	4.0	1	02/07/05	02/07/05	
2,2-Dichloropropane	ND	U	2.0	1	02/07/05	02/07/05	
2-Butanone (MEK)	ND	U	8.0	1	02/07/05	02/07/05	L1
cis-1,2-Dichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
Bromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
Chloroform	ND	U	1.0	1	02/07/05	02/07/05	
1,1,1-Trichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Carbon Tetrachloride	ND	U	2.0	1	02/07/05	02/07/05	
1,1-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	
Benzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Trichloroethene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichloropropane	ND	U	0.50	1	02/07/05	02/07/05	
Dibromomethane	ND	U	0.50	1	02/07/05	02/07/05	
Bromodichloromethane	ND	U	0.50	1	02/07/05	02/07/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/07/05	02/07/05	L1
4-Methyl-2-pentanone (MIBK)	ND	U	8.0	1	02/07/05	02/07/05	
Toluene	ND	U	0.50	1	02/07/05	02/07/05	
trans-1,3-Dichloropropene	ND	U	1.0	1	02/07/05	02/07/05	L1

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: XWG0500208-5

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,2-Trichloroethane	ND	U	1.0	1	02/07/05	02/07/05	
Tetrachloroethene	ND	U	0.50	1	02/07/05	02/07/05	
2-Hexanone	ND	U	5.0	1	02/07/05	02/07/05	
1,3-Dichloropropane	ND	U	1.0	1	02/07/05	02/07/05	L1V8
Dibromochloromethane	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromoethane	ND	U	0.50	1	02/07/05	02/07/05	V8
Chlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/07/05	02/07/05	
Ethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
m,p-Xylenes	ND	U	1.0	1	02/07/05	02/07/05	
o-Xylene	ND	U	0.50	1	02/07/05	02/07/05	
Styrene	ND	U	0.50	1	02/07/05	02/07/05	
Isopropylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
Bromobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
1,2,3-Trichloropropane	ND	U	1.0	1	02/07/05	02/07/05	
n-Propylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
2-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
4-Chlorotoluene	ND	U	0.50	1	02/07/05	02/07/05	
1,3,5-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
tert-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2,4-Trimethylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
sec-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	V8
4-Isopropyltoluene	ND	U	0.50	1	02/07/05	02/07/05	
Bromoform	ND	U	0.50	1	02/07/05	02/07/05	
1,1,2,2-Tetrachloroethane	ND	U	1.0	1	02/07/05	02/07/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
n-Butylbenzene	ND	U	0.50	1	02/07/05	02/07/05	
1,2-Dibromo-3-chloropropane	ND	U	5.0	1	02/07/05	02/07/05	
1,2,4-Trichlorobenzene	ND	U	0.50	1	02/07/05	02/07/05	
Hexachlorobutadiene	ND	U	1.0	1	02/07/05	02/07/05	
Naphthalene	ND	U	3.0	1	02/07/05	02/07/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/07/05	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	GeoTrans, Inc.	**Service Request:**	X0500116
Project:	Western Ave./1303.016.07	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	XWG0500208-5	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
Dibromofluoromethane	115	66-123	02/07/05	
Toluene-d8	113	69-130	02/07/05	
4-Bromofluorobenzene	110	65-121	02/07/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
MW-1	X0500116-001	122	120	110
MW-2	X0500116-002	116	111	107
MW-3	X0500116-003	120	111	111
MW-4	X0500116-004	122	119	113
MW-5	X0500116-005	124 S1	113	111
MW-6	X0500116-006	123	116	111
MW-7	X0500116-007	122	118	109
ADEQ MW-1	X0500116-008	123	116	112
ADEQ MW-6	X0500116-009	120	115	109
GMW-5	X0500116-010	124 S1	118	114
EB-1	X0500116-011	117	113	103
Trip Blank	X0500116-012	110	117	106
Method Blank	XWG0500208-5	115	113	110
Batch QC	X0500109-002	119	123	112
Batch QCMS	XWG0500208-1	113	118	115
Batch QCDMS	XWG0500208-2	113	113	111
Lab Control Sample	XWG0500208-3	104	106	108
Duplicate Lab Control Sample	XWG0500208-4	104	108	105

Surrogate Recovery Control Limits (%)

Sur1 =	Dibromofluoromethane	66-123
Sur2 =	Toluene-d8	69-130
Sur3 =	4-Bromofluorobenzene	65-121

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Extracted: 02/07/2005
Date Analyzed: 02/07/2005

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: X0500109-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: XWG0500208

Analyte Name	Sample Result	Batch QCMS XWG0500208-1 Matrix Spike Result	Expected	%Rec	Batch QCDMS XWG0500208-2 Duplicate Matrix Spike Result	Expected	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	ND	7.58	10.0	76	6.97	10.0	70	34-186	8	23
Chloromethane	ND	8.02	10.0	80	7.39	10.0	74	54-147	8	21
Vinyl Chloride	ND	12.0	10.0	120	10.9	10.0	109	63-161	9	22
Bromomethane	ND	6.32	10.0	63	5.75	10.0	58	48-163	9	22
Chloroethane	ND	10.5	10.0	105	10.5	10.0	105	68-154	0	24
Trichlorofluoromethane	ND	12.0	10.0	120	11.7	10.0	117	67-180	2	23
1,1,2-Trichlorotrifluoroethane	ND	8.08	10.0	81	7.99	10.0	80	43-194	1	34
1,1-Dichloroethene	ND	8.01	10.0	80	11.4	10.0	114	43-171	35	38
Acetone	ND	42.8	40.0	107	44.1	40.0	110	31-163	3	46
Iodomethane	ND	40.5	40.0	101	39.2	40.0	98	42-153	3	44
Carbon Disulfide	ND	49.2	40.0	123	44.3	40.0	111	60-158	10	41
Methylene Chloride	ND	12.0	10.0	120	11.6	10.0	116	58-142	3	16
Methyl tert-Butyl Ether	ND	10.9	10.0	109	10.4	10.0	104	57-126	4	14
trans-1,2-Dichloroethene	ND	10.7	10.0	107	10.1	10.0	101	54-141	6	19
1,1-Dichloroethane	ND	11.3	10.0	113	10.9	10.0	109	69-128	3	16
Vinyl Acetate	ND	37.3	40.0	93	38.8	40.0	97	42-142	4	19
2,2-Dichloropropane	ND	12.0	10.0	120	11.4	10.0	114	55-153	4	19
2-Butanone (MEK)	ND	48.3	40.0	121	46.8	40.0	117	45-129	3	32
cis-1,2-Dichloroethene	ND	10.4	10.0	104	10.2	10.0	102	63-124	2	17
Bromochloromethane	ND	10.3	10.0	103	9.89	10.0	99	68-109	5	17
Chloroform	ND	11.4	10.0	114	11.4	10.0	114	68-126	1	13
1,1,1-Trichloroethane	ND	11.3	10.0	113	10.8	10.0	108	71-126	5	18
Carbon Tetrachloride	ND	10.9	10.0	109	10.7	10.0	107	50-156	2	20
1,1-Dichloropropene	ND	11.1	10.0	111	10.9	10.0	109	65-136	2	20
Benzene	ND	11.1	10.0	111	10.8	10.0	108	78-121	3	17
1,2-Dichloroethane	ND	11.5	10.0	115	11.2	10.0	112	70-118	2	13
Trichloroethene	ND	10.9	10.0	109	10.5	10.0	105	69-122	4	21
1,2-Dichloropropane	ND	11.1	10.0	111	11.5	10.0	115 M1	72-114	3	16
Dibromomethane	ND	11.2	10.0	112 M1	10.9	10.0	109	72-109	3	15
Bromodichloromethane	ND	11.3	10.0	113	10.9	10.0	109	69-117	4	14
cis-1,3-Dichloropropene	ND	11.1	10.0	111	11.1	10.0	111	66-113	1	18
4-Methyl-2-pentanone (MIBK)	ND	42.3	40.0	106	41.6	40.0	104	58-112	2	25
Toluene	ND	11.0	10.0	110	10.5	10.0	105	76-120	5	15
trans-1,3-Dichloropropene	ND	11.2	10.0	112	11.1	10.0	111	67-112	1	16

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Extracted: 02/07/2005
Date Analyzed: 02/07/2005

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: Batch QC
Lab Code: X0500109-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low
Extraction Lot: XWG0500208

Analyte Name	Sample Result	Batch QCMS XWG0500208-1 Matrix Spike Result	Expected	%Rec	Batch QCDMS XWG0500208-2 Duplicate Matrix Spike Result	Expected	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2-Trichloroethane	ND	11.5	10.0	115 M1	11.1	10.0	111	76-111	4	17
Tetrachloroethene	ND	9.85	10.0	98	9.33	10.0	93	71-121	5	20
2-Hexanone	ND	45.0	40.0	113	47.3	40.0	118	57-121	5	21
1,3-Dichloropropane	ND	11.2	10.0	112	11.5	10.0	115	72-108	3	16
Dibromochloromethane	ND	10.2	10.0	102	10.1	10.0	101	67-108	0	18
1,2-Dibromoethane	ND	10.9	10.0	109 M1	10.6	10.0	106 M1	73-105	3	19
Chlorobenzene	ND	10.9	10.0	109	9.98	10.0	100	81-114	9	16
1,1,1,2-Tetrachloroethane	ND	11.1	10.0	111	10.5	10.0	105	72-119	5	15
Ethylbenzene	ND	11.8	10.0	118	11.2	10.0	112	79-118	5	16
m,p-Xylenes	ND	22.2	20.0	111	20.1	20.0	100	75-113	10	16
o-Xylene	ND	10.8	10.0	108	9.94	10.0	99	74-108	8	15
Styrene	ND	11.1	10.0	111	10.6	10.0	106	45-142	5	18
Isopropylbenzene	ND	10.8	10.0	108	10.1	10.0	101	57-140	7	22
Bromobenzene	ND	10.1	10.0	101	9.63	10.0	96	73-114	4	19
1,2,3-Trichloropropane	ND	15.2	10.0	152 M1	11.3	10.0	113	60-135	29	39
n-Propylbenzene	ND	11.9	10.0	119	11.0	10.0	110	66-138	8	18
2-Chlorotoluene	ND	11.5	10.0	115	10.3	10.0	103	72-129	11	17
4-Chlorotoluene	ND	10.9	10.0	109	10.2	10.0	102	72-125	7	17
1,3,5-Trimethylbenzene	ND	11.3	10.0	113	10.5	10.0	105	68-122	7	16
tert-Butylbenzene	ND	10.6	10.0	106	9.70	10.0	97	56-140	9	21
1,2,4-Trimethylbenzene	ND	10.8	10.0	108	9.47	10.0	95	73-110	13	16
sec-Butylbenzene	ND	10.3	10.0	103	9.17	10.0	92	54-142	12	19
1,3-Dichlorobenzene	ND	10.1	10.0	101	9.32	10.0	93	73-123	8	20
4-Isopropyltoluene	ND	11.3	10.0	113	10.4	10.0	104	72-122	8	18
Bromoform	ND	11.5	10.0	115	11.0	10.0	110	57-116	5	21
1,1,2,2-Tetrachloroethane	ND	11.9	10.0	119 M1	11.2	10.0	112	71-117	6	18
1,4-Dichlorobenzene	ND	10.5	10.0	105	10.1	10.0	101	78-115	5	14
1,2-Dichlorobenzene	ND	10.3	10.0	103	9.71	10.0	97	77-113	6	18
n-Butylbenzene	ND	10.8	10.0	108	10.8	10.0	108	60-140	0	19
1,2-Dibromo-3-chloropropane	ND	10.5	10.0	105	10.8	10.0	108 M1	60-107	4	24
1,2,4-Trichlorobenzene	ND	9.50	10.0	95	8.99	10.0	90	59-117	6	18
Hexachlorobutadiene	ND	9.63	10.0	96	9.04	10.0	90	45-150	6	27
Naphthalene	ND	9.85	10.0	98	9.80	10.0	98	54-116	0	19
1,2,3-Trichlorobenzene	ND	9.42	10.0	94	8.75	10.0	88	60-115	7	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Extracted: 02/07/2005
Date Analyzed: 02/07/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0500208

	Lab Control Sample XWG0500208-3 Lab Control Spike			Duplicate Lab Control Sample XWG0500208-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	6.75	10.0	67	6.85	10.0	68	30-171	1	23
Chloromethane	8.17	10.0	82	8.05	10.0	80	50-139	2	21
Vinyl Chloride	10.7	10.0	107	10.8	10.0	108	61-150	1	22
Bromomethane	6.82	10.0	68	6.57	10.0	66	40-160	4	22
Chloroethane	11.8	10.0	118	10.7	10.0	107	67-146	10	24
Trichlorofluoromethane	11.2	10.0	112	11.6	10.0	116	61-161	3	23
1,1,2-Trichlorotrifluoroethane	10.9	10.0	109	12.9	10.0	129	48-175	16	34
1,1-Dichloroethene	12.6	10.0	126	12.4	10.0	124	51-154	2	38
Acetone	44.0	40.0	110	47.7	40.0	119	51-156	8	46
Iodomethane	39.6	40.0	99	40.0	40.0	100	46-142	1	44
Carbon Disulfide	46.3	40.0	116	44.7	40.0	112	61-151	4	41
Methylene Chloride	12.3	10.0	123 L1	12.9	10.0	129 L1	77-120	5	16
Methyl tert-Butyl Ether	10.7	10.0	107	11.5	10.0	115	55-131	7	14
trans-1,2-Dichloroethene	10.5	10.0	105	10.4	10.0	104	63-126	1	19
1,1-Dichloroethane	11.6	10.0	116	11.2	10.0	112	75-121	3	16
Vinyl Acetate	38.5	40.0	96	37.6	40.0	94	34-140	2	19
2,2-Dichloropropane	11.8	10.0	118	11.9	10.0	119	49-149	0	19
2-Butanone (MEK)	48.4	40.0	121 L1	52.4	40.0	131 L1	66-117	8	32
cis-1,2-Dichloroethene	10.3	10.0	103	10.7	10.0	107	69-118	4	17
Bromochloromethane	10.2	10.0	102	10.5	10.0	105	67-111	3	17
Chloroform	11.4	10.0	114	11.8	10.0	118	75-120	3	13
1,1,1-Trichloroethane	10.8	10.0	108	10.6	10.0	106	71-118	2	18
Carbon Tetrachloride	10.4	10.0	104	10.6	10.0	106	66-125	2	20
1,1-Dichloropropene	11.0	10.0	110	11.1	10.0	111	67-124	1	20
Benzene	11.0	10.0	110	11.7	10.0	117 L1	80-116	6	17
1,2-Dichloroethane	11.3	10.0	113	11.9	10.0	119 L1	75-118	5	13
Trichloroethene	10.8	10.0	108	10.7	10.0	107	73-113	1	21
1,2-Dichloropropane	10.8	10.0	108	11.0	10.0	110	76-111	1	16
Dibromomethane	11.1	10.0	111	11.7	10.0	117 L1	74-112	5	15
Bromodichloromethane	11.4	10.0	114	11.6	10.0	116	74-117	2	14
cis-1,3-Dichloropropene	11.4	10.0	114 L1	11.6	10.0	116 L1	73-113	2	18
4-Methyl-2-pentanone (MIBK)	42.1	40.0	105	43.5	40.0	109	63-110	3	25
Toluene	11.1	10.0	111	10.9	10.0	109	77-115	1	15
trans-1,3-Dichloropropene	11.3	10.0	113 L1	11.6	10.0	116 L1	72-110	2	16
1,1,2-Trichloroethane	11.1	10.0	111	11.8	10.0	118 L1	75-115	6	17
Tetrachloroethene	9.39	10.0	94	9.50	10.0	95	69-114	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500116
Date Extracted: 02/07/2005
Date Analyzed: 02/07/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: XWG0500208

	Lab Control Sample XWG0500208-3 Lab Control Spike			Duplicate Lab Control Sample XWG0500208-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
2-Hexanone	43.3	40.0	108	49.7	40.0	124 L1	65-113	14	21
1,3-Dichloropropane	10.9	10.0	109 L1	12.1	10.0	121 L1	76-108	11	16
Dibromochloromethane	10.5	10.0	105	10.8	10.0	108	65-114	3	18
1,2-Dibromoethane	10.6	10.0	106	11.0	10.0	110 L1	74-107	3	19
Chlorobenzene	10.5	10.0	105	9.99	10.0	100	83-112	5	16
1,1,1,2-Tetrachloroethane	10.7	10.0	107	10.5	10.0	105	76-118	2	15
Ethylbenzene	11.0	10.0	110	10.5	10.0	105	75-120	4	16
m,p-Xylenes	21.3	20.0	107	20.3	20.0	101	71-116	5	16
o-Xylene	10.5	10.0	105	9.74	10.0	97	74-107	8	15
Styrene	11.0	10.0	110	10.5	10.0	105	71-114	5	18
Isopropylbenzene	10.7	10.0	107	9.88	10.0	99	63-126	8	22
Bromobenzene	9.66	10.0	97	9.76	10.0	98	70-118	1	19
1,2,3-Trichloropropane	11.5	10.0	115	11.9	10.0	119	67-132	3	39
n-Propylbenzene	10.4	10.0	104	10.9	10.0	109	69-127	5	18
2-Chlorotoluene	10.8	10.0	108	10.2	10.0	102	75-123	6	17
4-Chlorotoluene	9.97	10.0	100	10.2	10.0	102	74-119	2	17
1,3,5-Trimethylbenzene	10.3	10.0	103	10.3	10.0	103	72-116	0	16
tert-Butylbenzene	9.84	10.0	98	9.92	10.0	99	60-127	1	21
1,2,4-Trimethylbenzene	10.1	10.0	101	9.38	10.0	94	72-111	8	16
sec-Butylbenzene	10.1	10.0	101	9.29	10.0	93	60-125	8	19
1,3-Dichlorobenzene	10.2	10.0	102	9.35	10.0	93	71-125	9	20
4-Isopropyltoluene	11.2	10.0	112	10.2	10.0	102	69-119	9	18
Bromoform	11.0	10.0	110	11.2	10.0	112	60-120	2	21
1,1,2,2-Tetrachloroethane	11.3	10.0	113	11.8	10.0	118	70-121	5	18
1,4-Dichlorobenzene	10.5	10.0	105	10.4	10.0	104	86-106	1	14
1,2-Dichlorobenzene	10.2	10.0	102	9.89	10.0	99	82-110	3	18
n-Butylbenzene	11.4	10.0	114	10.8	10.0	108	67-124	5	19
1,2-Dibromo-3-chloropropane	10.3	10.0	103	11.1	10.0	111 L1	63-110	8	24
1,2,4-Trichlorobenzene	9.36	10.0	94	9.30	10.0	93	63-111	1	18
Hexachlorobutadiene	9.33	10.0	93	8.92	10.0	89	45-140	4	27
Naphthalene	9.80	10.0	98	9.55	10.0	96	61-109	3	19
1,2,3-Trichlorobenzene	9.16	10.0	92	9.07	10.0	91	65-112	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Columbia Analytical Services INC.
An Employee-Owned Company
www.castlab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

SR # X0500116
CAS Contact

Project Name: WESTERN AVE.
Project Number: 1303.016.07
Project Manager: PAUL PLATO
Report CC:
Company/Address: GEOTRANS LLC.
4801 E. WASHINGTON ST, SUITE 260
PHOENIX AZ 85034
Phone #: (602) 682-3320
FAX#: (602) 682-3318
Sampler's Signature: Karin Harker
Sampler's Printed Name: KARIN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GC/MS 8260/624 524.2	8015 AZR1 C-10-C-32	PAH 8310	Halogenated & Aromatic 601/602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter	REMARKS/ ALTERNATE DESCRIPTION
MW-1	X116-001	1/28/05	1139	WATER	3		X							
MW-2	-002	1/28/05	1300		3		X							
MW-3	-003	1/28/05	0925		3		X							
MW-4	-004	1/27/05	1538		3		X							
MW-5	-005	1/27/05	1628		3		X							
MW-6	-006	1/27/05	1725		3		X							
MW-7	-007	1/28/05	1429		3		X							
ADEQMW-1	-008	1/28/05	1200		3		X							
ADEQ MW-6	-009	1/27/05	1740		3		X							
GMW-5	-010	1/27/05	1115		3		X							

SPECIAL INSTRUCTIONS/COMMENTS

[redacted]

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: 2.0 CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Karin Harker	Signature: Tracy Dutton	Signature	Signature	Signature	Signature
Printed Name: KARIN HARKER	Printed Name: Tracy Dutton	Printed Name	Printed Name	Printed Name	Printed Name
Firm: GEOTRANS	Firm: CAS/PHX	Firm	Firm	Firm	Firm
Date/Time: 1/31/05 1608	Date/Time: 1/31/05 1608	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

52

Columbia Analytical Services INC.
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

SR # X0500116
CAS Contact

Project Name: WESTERN AVE	Project Number: 1303.016.07
Project Manager: PAUL PLATO	Report CC:
Company/Address: GEOTRANS INC, 4801 E. WASHINGTON ST, SUITE 260, PHOENIX AZ 85034	
Phone #: (602) 682-3320	FAX#: (602) 682-3318
Sampler's Signature: KARIN HARKER	Sampler's Printed Name: KARIN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GC/MS 8260 624 524.2	8015 AZR1 C-10-C-32	PAH 8310	Halogenated & Aromatic 601/602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter	REMARKS/ ALTERNATE DESCRIPTION
EB-1	X116-011	1/28/05	1830	WATER	3		X							
TRIP BLANK	-012				1		X							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: 2.0 CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: KARIN HARKER	Signature: Tracy Dutton	Signature	Signature	Signature	Signature
Printed Name: KARIN HARKER	Printed Name: Tracy Dutton	Printed Name	Printed Name	Printed Name	Printed Name
Firm: GEOTRANS INC	Firm: CAS/PHX	Firm	Firm	Firm	Firm
Date/Time: 1/31/05 1608	Date/Time: 1/31/05 1608	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

X050 01/16

Columbia Analytical Services, Inc.
Phoenix, AZ

Sample Receipt and Preservation Form

Client: Western Ave Project Name: Geotrans

MeOH Extracts

Sample(s) Received on: 1/31/05 date _____ time

VOA's ☑ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐ Tedlar Bags ☐ Encores ☐

MATRIX: SOIL ☐ WATER ☑ VAPOR ☐

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

1. Rush or standard turn-a-round time? RUSH STANDARD
2. Are the custody seals present? Yes ☐ No ☑
   If yes, how many and where? _____
3. Are the signature and date correct? Yes ☑ No ☐
4. Did all containers arrive in good condition? Yes ☑ No ☐
5. Are all container labels complete (i.e. preservation, sample ID)? Yes ☑ No ☐
6. Were the correct containers used for the tests indicated? Yes ☑ No ☐
7. Have VOA's been checked for the presence of air bubbles? (note problems in comments) Yes ☑ No ☐ N/A ☐
8. Is there sufficient sample volume to perform the requested analysis? Yes ☑ No ☐
9. Temperature of sample(s) upon receipt: 2.1°C

Explaination of discrepancies: _____

		YES	NO
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		
2	HCl		

VOA Vial pH Verification
(Tested After Analysis)
☐ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

Comments: _____

Form Completed and Sample(s) Received by (initials): MD

X050 0116

Columbia Analytical Services, Inc.
Phoenix, AZ

Analysis Acknowledgement Form

The Following tests are preformed at Columbia Analytical Services - Phoenix lab:

Volatiles	8260	624	602	524.2	8021B	8015GRO
Semi-Volatiles	8015AZR1(soils only)			8310	610	8330(soils only)
Wet Chemistry	pH					

Note: Samples for 524.2 Drinking Water will be subcontracted out to our Kelso facility.

All other analysis requested by the client will be subcontracted out. Columbia Analytical Services - Phoenix Lab reserves the option to subcontract any of the above-mentioned tests out due to capacity issues or instrument failures.

Comments: _____

_____

Client Acknowledgement (initials): KH Date 1/31/05

3902 East University Dr., Suite 4 Phoenix, AZ 85034 (602) 437-2001 ph (800) 695-7222 x 09 (602) 437-5308 fax

Columbia Analytical Services INC.
An Employee - Owned Company

February 25, 2005

Paul Plato
GeoTrans, Inc.
4801 E. Washington, Suite 260
Phoenix, AZ 85034

RECEIVED
MAR 0 2 2005
GEOTRANS

RE: Western Ave. / Project #1303.016.07

Dear Paul:

Enclosed are the results of the samples submitted to our laboratory on February 3, 2005. All analyses were performed at our Canoga Park, CA facility. For your reference, these analyses have been assigned our service request number X0500137.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the Arizona Department of Health Services (License number: AZ0136).

If you have any questions, please call me at (602) 437-2001, extension 223.

Respectfully submitted,

Columbia Analytical Services, Inc.

Tracy Dutton

Tracy Dutton
Laboratory Director

TD/lm

NELAP Accredited ACIL Seal of Excellence Award

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	GeoTrans, Inc.	**Service Request No.:**	X0500137
Project:	Western Ave. / Project #1303.016.07	**Date Received:**	February 3, 2005
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

The samples were received for analysis at Columbia Analytical Services on February 3, 2005. No discrepancies were noted upon initial sample inspection. Any exceptions would be noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260B

No anomalies were encountered.

Approved by JM **Date** 2-25-05

6925 Canoga Avenue Canoga Park, California 91303 (818) 587-5550 ph (818) 587-5555 fax

Columbia Analytical Services INC.
An Employee - Owned Company

February 21, 2005

Paul Plato
Geo Trans, Inc.
4801 E. Washington St., Suite 260
Phoenix, AZ 85034

RE: Western Ave./Project #1303.016.07

Dear Matt:

Enclosed are the results of the samples submitted to our laboratory on February 3, 2005. For your reference, these analyses have been assigned our service request number X0500137.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Your report contains 22 pages.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296A); NELAP (certificate number: 02115CA); Los Angeles County Laboratory ID (No. 10151); and Arizona Department of Health Services (License number: AZ0136 and AZ0544).

If you have any questions, please call me at (818) 587-5550, extension 309.

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson

Sue Anderson
Project Chemist

SA

NELAP Accredited ACIL Seal of Excellence Award

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
D	Detected; result must be greater than zero.
DL	Detected; result must be greater than the detection limit.
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater* 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

Qualifiers

U	Undetected at or above MDL/MRL (PQL).
J	Estimated concentration. Analyte detected above MDL but below MRL (PQL).
B	Hit above MRL (PQL) also found in Method Blank.
E	Analyte concentration above high point of ICAL.
D	Result from dilution.
X	See case narrative.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Geo Trans, Inc.	**Service Request No.:**	X0500137
Project:	Western Ave./1303.016.07	**Date Received:**	2/3/05
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

Sample Receipt

The sample was received at Columbia Analytical Services – Phoenix on 2/3/05. The samples were sent to Columbia Analytical Services – Canoga Park and received on 2/16/05. No discrepancies were noted upon initial sample inspection. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260B

The primary evaluation criterion was exceeded for Iodomethane in Continuing Calibration Verification (CCV) LWG0500686. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard met the alternative evaluation criteria. The aforementioned analyte was not detected in the associated samples. The data has been flagged "V8" to indicate that the %D was exceeded, but the average %D was within the method criteria.

Batch QC was run along with these samples. These results have been provided for informational purposes only. The Method Blank and Laboratory Control Sample were within criteria.

Approved by Joe Anderson **Date** 2/21/05

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07

Service Request: X0500137

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
COG-MW3	X0500137-001	02/03/2005	02/03/2005
ADEQG-MW3	X0500137-002	02/03/2005	02/03/2005
Trip Blank	X0500137-003	02/03/2005	02/03/2005

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Sue Anderson
Name: Sue Anderson
Date: 2/21/05
Title: Project Chemist

Analytical Results

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X0500137-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichlorotrifluoroethane	ND	U	2.0	1	02/17/05	02/17/05	
1,1-Dichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,3-Trichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,2,4-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,4-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	02/17/05	02/17/05	
1,2-Dibromoethane (EDB)	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,3,5-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,3-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
2,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
2-Butanone (MEK)	ND	U	10	1	02/17/05	02/17/05	
2-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
2-Hexanone	ND	U	10	1	02/17/05	02/17/05	
4-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Isopropyltoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Methyl-2-pentanone (MIBK)	ND	U	10	1	02/17/05	02/17/05	
Acetone	ND	U	10	1	02/17/05	02/17/05	
Benzene	ND	U	0.50	1	02/17/05	02/17/05	
Bromobenzene	ND	U	1.0	1	02/17/05	02/17/05	
Bromochloromethane	ND	U	0.50	1	02/17/05	02/17/05	
Bromodichloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Bromoform	ND	U	1.0	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X0500137-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Bromomethane	ND	U	1.0	1	02/17/05	02/17/05	
Carbon Disulfide	ND	U	2.0	1	02/17/05	02/17/05	
Carbon Tetrachloride	ND	U	0.50	1	02/17/05	02/17/05	
Chlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
Chloroethane	ND	U	1.0	1	02/17/05	02/17/05	
Chloroform	ND	U	0.50	1	02/17/05	02/17/05	
Chloromethane	ND	U	1.0	1	02/17/05	02/17/05	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Dibromochloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Dibromomethane	ND	U	0.50	1	02/17/05	02/17/05	
Dichlorodifluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Ethylbenzene	ND	U	0.50	1	02/17/05	02/17/05	
Hexachlorobutadiene	ND	U	1.0	1	02/17/05	02/17/05	
Iodomethane	ND	U	10	1	02/17/05	02/17/05	V8
Isopropylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
m,p-Xylenes	ND	U	1.0	1	02/17/05	02/17/05	
Methyl tert-Butyl Ether	ND	U	2.0	1	02/17/05	02/17/05	
Methylene Chloride	ND	U	2.0	1	02/17/05	02/17/05	
n-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
n-Propylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Naphthalene	ND	U	1.0	1	02/17/05	02/17/05	
o-Xylene	ND	U	0.50	1	02/17/05	02/17/05	
sec-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Styrene	ND	U	0.50	1	02/17/05	02/17/05	
tert-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Tetrachloroethene (PCE)	**2.1**		0.50	1	02/17/05	02/17/05	
Toluene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Trichloroethene (TCE)	ND	U	0.50	1	02/17/05	02/17/05	
Trichlorofluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Vinyl Acetate	ND	U	10	1	02/17/05	02/17/05	
Vinyl Chloride	ND	U	0.50	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: COG-MW3
Lab Code: X0500137-001

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
4-Bromofluorobenzene	98	65-119	02/17/05	
Dibromofluoromethane	93	75-120	02/17/05	
Toluene-d8	94	65-129	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: ADEQG-MW3
Lab Code: X0500137-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichlorotrifluoroethane	ND	U	2.0	1	02/17/05	02/17/05	
1,1-Dichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,3-Trichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,2,4-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,4-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	02/17/05	02/17/05	
1,2-Dibromoethane (EDB)	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,3,5-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,3-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
2,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
2-Butanone (MEK)	ND	U	10	1	02/17/05	02/17/05	
2-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
2-Hexanone	ND	U	10	1	02/17/05	02/17/05	
4-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Isopropyltoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Methyl-2-pentanone (MIBK)	ND	U	10	1	02/17/05	02/17/05	
Acetone	ND	U	10	1	02/17/05	02/17/05	
Benzene	ND	U	0.50	1	02/17/05	02/17/05	
Bromobenzene	ND	U	1.0	1	02/17/05	02/17/05	
Bromochloromethane	ND	U	0.50	1	02/17/05	02/17/05	
Bromodichloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Bromoform	ND	U	1.0	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: ADEQG-MW3
Lab Code: X0500137-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Bromomethane	ND	U	1.0	1	02/17/05	02/17/05	
Carbon Disulfide	ND	U	2.0	1	02/17/05	02/17/05	
Carbon Tetrachloride	ND	U	0.50	1	02/17/05	02/17/05	
Chlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
Chloroethane	ND	U	1.0	1	02/17/05	02/17/05	
Chloroform	ND	U	0.50	1	02/17/05	02/17/05	
Chloromethane	ND	U	1.0	1	02/17/05	02/17/05	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Dibromochloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Dibromomethane	ND	U	0.50	1	02/17/05	02/17/05	
Dichlorodifluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Ethylbenzene	ND	U	0.50	1	02/17/05	02/17/05	
Hexachlorobutadiene	ND	U	1.0	1	02/17/05	02/17/05	
Iodomethane	ND	U	10	1	02/17/05	02/17/05	V8
Isopropylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
m,p-Xylenes	ND	U	1.0	1	02/17/05	02/17/05	
Methyl tert-Butyl Ether	ND	U	2.0	1	02/17/05	02/17/05	
Methylene Chloride	ND	U	2.0	1	02/17/05	02/17/05	
n-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
n-Propylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Naphthalene	ND	U	1.0	1	02/17/05	02/17/05	
o-Xylene	ND	U	0.50	1	02/17/05	02/17/05	
sec-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Styrene	ND	U	0.50	1	02/17/05	02/17/05	
tert-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Tetrachloroethene (PCE)	**2.1**		0.50	1	02/17/05	02/17/05	
Toluene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Trichloroethene (TCE)	ND	U	0.50	1	02/17/05	02/17/05	
Trichlorofluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Vinyl Acetate	ND	U	10	1	02/17/05	02/17/05	
Vinyl Chloride	ND	U	0.50	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: ADEQG-MW3
Lab Code: X0500137-002

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
4-Bromofluorobenzene	101	65-119	02/17/05	
Dibromofluoromethane	98	75-120	02/17/05	
Toluene-d8	96	65-129	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X0500137-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichlorotrifluoroethane	ND	U	2.0	1	02/17/05	02/17/05	
1,1-Dichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,3-Trichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,2,4-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,4-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	02/17/05	02/17/05	
1,2-Dibromoethane (EDB)	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,3,5-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,3-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
2,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
2-Butanone (MEK)	ND	U	10	1	02/17/05	02/17/05	
2-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
2-Hexanone	ND	U	10	1	02/17/05	02/17/05	
4-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Isopropyltoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Methyl-2-pentanone (MIBK)	ND	U	10	1	02/17/05	02/17/05	
Acetone	ND	U	10	1	02/17/05	02/17/05	
Benzene	ND	U	0.50	1	02/17/05	02/17/05	
Bromobenzene	ND	U	1.0	1	02/17/05	02/17/05	
Bromochloromethane	ND	U	0.50	1	02/17/05	02/17/05	
Bromodichloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Bromoform	ND	U	1.0	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X0500137-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Bromomethane	ND	U	1.0	1	02/17/05	02/17/05	
Carbon Disulfide	ND	U	2.0	1	02/17/05	02/17/05	
Carbon Tetrachloride	ND	U	0.50	1	02/17/05	02/17/05	
Chlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
Chloroethane	ND	U	1.0	1	02/17/05	02/17/05	
Chloroform	ND	U	0.50	1	02/17/05	02/17/05	
Chloromethane	ND	U	1.0	1	02/17/05	02/17/05	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Dibromochloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Dibromomethane	ND	U	0.50	1	02/17/05	02/17/05	
Dichlorodifluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Ethylbenzene	ND	U	0.50	1	02/17/05	02/17/05	
Hexachlorobutadiene	ND	U	1.0	1	02/17/05	02/17/05	
Iodomethane	ND	U	10	1	02/17/05	02/17/05	V8
Isopropylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
m,p-Xylenes	ND	U	1.0	1	02/17/05	02/17/05	
Methyl tert-Butyl Ether	ND	U	2.0	1	02/17/05	02/17/05	
Methylene Chloride	ND	U	2.0	1	02/17/05	02/17/05	
n-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
n-Propylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Naphthalene	ND	U	1.0	1	02/17/05	02/17/05	
o-Xylene	ND	U	0.50	1	02/17/05	02/17/05	
sec-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Styrene	ND	U	0.50	1	02/17/05	02/17/05	
tert-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Tetrachloroethene (PCE)	ND	U	0.50	1	02/17/05	02/17/05	
Toluene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Trichloroethene (TCE)	ND	U	0.50	1	02/17/05	02/17/05	
Trichlorofluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Vinyl Acetate	ND	U	10	1	02/17/05	02/17/05	
Vinyl Chloride	ND	U	0.50	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: 02/03/2005
Date Received: 02/03/2005

Volatile Organic Compounds

Sample Name: Trip Blank
Lab Code: X0500137-003

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
4-Bromofluorobenzene	103	65-119	02/17/05	
Dibromofluoromethane	92	75-120	02/17/05	
Toluene-d8	95	65-129	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: LWG0500685-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1,2-Trichlorotrifluoroethane	ND	U	2.0	1	02/17/05	02/17/05	
1,1-Dichloroethane	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
1,1-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
1,2,3-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,3-Trichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,2,4-Trichlorobenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2,4-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	02/17/05	02/17/05	
1,2-Dibromoethane (EDB)	ND	U	1.0	1	02/17/05	02/17/05	
1,2-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	02/17/05	02/17/05	
1,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,3,5-Trimethylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
1,3-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
1,3-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
1,4-Dichlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
2,2-Dichloropropane	ND	U	0.50	1	02/17/05	02/17/05	
2-Butanone (MEK)	ND	U	10	1	02/17/05	02/17/05	
2-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
2-Hexanone	ND	U	10	1	02/17/05	02/17/05	
4-Chlorotoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Isopropyltoluene	ND	U	1.0	1	02/17/05	02/17/05	
4-Methyl-2-pentanone (MIBK)	ND	U	10	1	02/17/05	02/17/05	
Acetone	ND	U	10	1	02/17/05	02/17/05	
Benzene	ND	U	0.50	1	02/17/05	02/17/05	
Bromobenzene	ND	U	1.0	1	02/17/05	02/17/05	
Bromochloromethane	ND	U	0.50	1	02/17/05	02/17/05	
Bromodichloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Bromoform	ND	U	1.0	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: LWG0500685-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Arizona Qualifier
Bromomethane	ND	U	1.0	1	02/17/05	02/17/05	
Carbon Disulfide	ND	U	2.0	1	02/17/05	02/17/05	
Carbon Tetrachloride	ND	U	0.50	1	02/17/05	02/17/05	
Chlorobenzene	ND	U	0.50	1	02/17/05	02/17/05	
Chloroethane	ND	U	1.0	1	02/17/05	02/17/05	
Chloroform	ND	U	0.50	1	02/17/05	02/17/05	
Chloromethane	ND	U	1.0	1	02/17/05	02/17/05	
cis-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
cis-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Dibromochloromethane	ND	U	1.0	1	02/17/05	02/17/05	
Dibromomethane	ND	U	0.50	1	02/17/05	02/17/05	
Dichlorodifluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Ethylbenzene	ND	U	0.50	1	02/17/05	02/17/05	
Hexachlorobutadiene	ND	U	1.0	1	02/17/05	02/17/05	
Iodomethane	ND	U	10	1	02/17/05	02/17/05	V8
Isopropylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
m,p-Xylenes	ND	U	1.0	1	02/17/05	02/17/05	
Methyl tert-Butyl Ether	ND	U	2.0	1	02/17/05	02/17/05	
Methylene Chloride	ND	U	2.0	1	02/17/05	02/17/05	
n-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
n-Propylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Naphthalene	ND	U	1.0	1	02/17/05	02/17/05	
o-Xylene	ND	U	0.50	1	02/17/05	02/17/05	
sec-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Styrene	ND	U	0.50	1	02/17/05	02/17/05	
tert-Butylbenzene	ND	U	1.0	1	02/17/05	02/17/05	
Tetrachloroethene (PCE)	ND	U	0.50	1	02/17/05	02/17/05	
Toluene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,2-Dichloroethene	ND	U	0.50	1	02/17/05	02/17/05	
trans-1,3-Dichloropropene	ND	U	0.50	1	02/17/05	02/17/05	
Trichloroethene (TCE)	ND	U	0.50	1	02/17/05	02/17/05	
Trichlorofluoromethane	ND	U	1.0	1	02/17/05	02/17/05	
Vinyl Acetate	ND	U	10	1	02/17/05	02/17/05	
Vinyl Chloride	ND	U	0.50	1	02/17/05	02/17/05	

Comments:

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: LWG0500685-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Arizona Qualifier
4-Bromofluorobenzene	94	65-119	02/17/05	
Dibromofluoromethane	93	75-120	02/17/05	
Toluene-d8	93	65-129	02/17/05	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
COG-MW3	X0500137-001	98	93	94
ADEQG-MW3	X0500137-002	101	98	96
Trip Blank	X0500137-003	103	92	95
Method Blank	LWG0500685-4	94	93	93
Batch QC	L0500233-002	103	102	102
Batch QCMS	LWG0500685-1	106	89	100
Batch QCDMS	LWG0500685-2	100	84	94
Lab Control Sample	LWG0500685-3	103	90	100

Surrogate Recovery Control Limits (%)

Sur1 =	4-Bromofluorobenzene	65-119
Sur2 =	Dibromofluoromethane	75-120
Sur3 =	Toluene-d8	65-129

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	GeoTrans, Inc.	**Service Request:**	X0500137
Project:	Western Ave./1303.016.07	**Date Extracted:**	02/17/2005
Sample Matrix:	Ground water	**Date Analyzed:**	02/17/2005

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	L0500233-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B	**Extraction Lot:**	LWG0500685

Analyte Name	Sample Result	Batch QCMS LWG0500685-1 Matrix Spike			Batch QCDMS LWG0500685-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1,1-Trichloroethane (TCA)	ND	8.56	10.0	86	7.93	10.0	79	56-141	8	25
1,1-Dichloroethane	ND	9.15	10.0	92	8.64	10.0	86	69-121	6	25
1,1-Dichloroethene	ND	9.02	10.0	90	8.43	10.0	84	58-146	7	25
1,2-Dichloroethane (EDC)	ND	8.41	10.0	84	7.95	10.0	80	46-143	6	25
1,2-Dichloropropane	ND	9.65	10.0	97	9.35	10.0	94	70-118	3	25
1,3,5-Trimethylbenzene	ND	10.5	10.0	105	10.3	10.0	103	63-137	2	25
1,3-Dichlorobenzene	ND	9.87	10.0	99	9.67	10.0	97	74-124	2	25
Benzene	ND	9.88	10.0	99	9.37	10.0	94	64-130	5	25
Chlorobenzene	ND	9.49	10.0	95	8.98	10.0	90	76-123	6	25
Chloroform	ND	9.09	10.0	91	8.49	10.0	85	70-134	7	25
Ethylbenzene	ND	10.2	10.0	102	9.65	10.0	97	67-136	5	25
Methyl tert-Butyl Ether	ND	17.1	20.0	85	16.8	20.0	84	53-134	2	25
Tetrachloroethene (PCE)	ND	9.27	10.0	93	8.67	10.0	87	68-133	7	25
Toluene	ND	10.0	10.0	100	9.43	10.0	94	72-129	6	25
Trichloroethene (TCE)	ND	9.11	10.0	91	8.54	10.0	85	61-130	6	25
Vinyl Chloride	ND	9.59	10.0	96	8.83	10.0	88	70-132	8	25

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Extracted: 02/17/2005
Date Analyzed: 02/17/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: LWG0500685

Analyte Name	Lab Control Sample LWG0500685-3 Lab Control Spike Result	Expected	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	8.81	10.0	88	79-125
1,1,1-Trichloroethane (TCA)	8.26	10.0	83	65-125
1,1,2,2-Tetrachloroethane	9.86	10.0	99	82-123
1,1,2-Trichloroethane	10.0	10.0	100	78-118
1,1,2-Trichlorotrifluoroethane	7.65	10.0	77	54-142
1,1-Dichloroethane	9.07	10.0	91	75-114
1,1-Dichloroethene	8.79	10.0	88	61-135
1,1-Dichloropropene	8.96	10.0	90	70-113
1,2,3-Trichlorobenzene	9.56	10.0	96	69-136
1,2,3-Trichloropropane	9.20	10.0	92	76-119
1,2,4-Trichlorobenzene	9.93	10.0	99	68-134
1,2,4-Trimethylbenzene	10.4	10.0	104	70-130
1,2-Dibromo-3-chloropropane	16.5	20.0	83	56-135
1,2-Dibromoethane (EDB)	9.85	10.0	99	77-121
1,2-Dichlorobenzene	9.73	10.0	97	84-116
1,2-Dichloroethane (EDC)	8.45	10.0	85	59-132
1,2-Dichloropropane	9.99	10.0	100	76-117
1,3,5-Trimethylbenzene	10.1	10.0	101	75-127
1,3-Dichlorobenzene	9.65	10.0	97	85-117
1,3-Dichloropropane	9.80	10.0	98	77-117
1,4-Dichlorobenzene	9.41	10.0	94	85-115
2,2-Dichloropropane	8.87	10.0	89	69-130
2-Butanone (MEK)	49.1	50.0	98	46-151
2-Chlorotoluene	9.95	10.0	100	82-122
2-Hexanone	44.2	50.0	88	57-137
4-Chlorotoluene	9.96	10.0	100	80-122
4-Isopropyltoluene	10.3	10.0	103	69-128
4-Methyl-2-pentanone (MIBK)	45.7	50.0	91	56-133
Acetone	40.8	50.0	82	27-159
Benzene	9.94	10.0	99	76-119
Bromobenzene	9.70	10.0	97	82-122
Bromochloromethane	9.50	10.0	95	80-118
Bromodichloromethane	9.05	10.0	91	74-128
Bromoform	9.08	10.0	91	66-147
Bromomethane	9.15	10.0	92	40-139
Carbon Disulfide	14.9	20.0	75	42-119

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: GeoTrans, Inc.
Project: Western Ave./1303.016.07
Sample Matrix: Water

Service Request: X0500137
Date Extracted: 02/17/2005
Date Analyzed: 02/17/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: LWG0500685

Analyte Name	Lab Control Sample LWG0500685-3 Lab Control Spike Result	Expected	%Rec	%Rec Limits
Carbon Tetrachloride	8.19	10.0	82	60-133
Chlorobenzene	9.25	10.0	93	82-119
Chloroethane	9.19	10.0	92	66-128
Chloroform	9.06	10.0	91	78-125
Chloromethane	10.4	10.0	104	55-127
cis-1,2-Dichloroethene	9.84	10.0	98	81-119
cis-1,3-Dichloropropene	9.86	10.0	99	81-115
Dibromochloromethane	9.14	10.0	91	66-134
Dibromomethane	9.40	10.0	94	73-123
Dichlorodifluoromethane	9.13	10.0	91	48-128
Ethylbenzene	9.92	10.0	99	78-122
Hexachlorobutadiene	8.80	10.0	88	68-129
Iodomethane	15.9	20.0	79	47-139
Isopropylbenzene	8.97	10.0	90	75-122
m,p-Xylenes	20.1	20.0	101	76-125
Methyl tert-Butyl Ether	17.9	20.0	89	63-131
Methylene Chloride	9.88	10.0	99	69-117
n-Butylbenzene	9.12	10.0	91	57-142
n-Propylbenzene	10.5	10.0	105	76-129
Naphthalene	8.92	10.0	89	66-131
o-Xylene	9.32	10.0	93	78-123
sec-Butylbenzene	9.95	10.0	100	69-127
Styrene	9.33	10.0	93	78-126
tert-Butylbenzene	10.1	10.0	101	74-122
Tetrachloroethene (PCE)	9.12	10.0	91	77-118
Toluene	10.2	10.0	102	79-121
trans-1,2-Dichloroethene	8.88	10.0	89	69-119
trans-1,3-Dichloropropene	9.55	10.0	96	74-122
Trichloroethene (TCE)	9.07	10.0	91	74-113
Trichlorofluoromethane	8.58	10.0	86	47-154
Vinyl Acetate	29.0	20.0	145	90-157
Vinyl Chloride	9.21	10.0	92	69-119

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Columbia Analytical Services INC.
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 1

SR # X0500137
CAS Contact

Project Name: WESTERN AVE
Project Number: 1303.016.07
Project Manager: PAUL PLATO
Report CC:
Company/Address: GEOTRANS INC
4801 E WASHINGTON ST, SUITE 260
PHOENIX AZ 85034
Phone #: (602) 682-3320
FAX#: (602) 682-3318
Sampler's Signature: KARIN HARKER
Sampler's Printed Name: KARIN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602 / 8021	Volatile Organics GC/MS 8260 / 624 524.2	8015 AZR1 C-10-C-32	PAH 8310	Halogenated & Aromatic 601 / 602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter	REMARKS/ ALTERNATE DESCRIPTION
~~DAG~~ COG-MW 3	X0500137-001	2/3/05	1327	WATER	3		X							
ADEOG-MW3	↓ -002	2/3/05	1427	WATER	3		X							
TRIP BLANK	X0500137-003	2/3/05		WATER	1		X							
N														

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: ___ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: KARIN HARKER	Signature: Frank Martinez	Signature: Leslie May	Signature: Fedex	Signature: Fedex	Signature: Lonnie Kukita
Printed Name: KARIN HARKER	Printed Name: FRANK MARTINEZ	Printed Name: Leslie May	Printed Name	Printed Name	Printed Name
Firm: GEOTRANS INC	Firm: CAS	Firm: CAS/Phx	Firm	Firm	Firm: CAS
Date/Time: 2/3/05 1635	Date/Time: 2/3/05 16:35	Date/Time: 2-15-05 1600	Date/Time	Date/Time	Date/Time: 2/16/05 0825

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

SAMPLE RECEIPT FORM

Service Request No: ~~L050~~ X0500137 Client: GEOTRANS

Sample(s) delivered by: Client ____ CAS Emp ____ After Hours ____ DHL ____

Golden State Overnight ____ Fed X ✓ UPS ____ Other Courier ____

Chain of Custody filled out accurately? Yes ✓ No ____ (See Comments)

Appropriate sample volume and containers? Yes ✓ No ____ (See Comments)

Sufficient labeling on container(s) ? Yes ✓ No ____ (See Comments)

Container(s) supplied by CAS? Yes ✓ No ____ (See Comments)

Custody seal(s) intact? N/A ✓ Yes ____ No ____ (See Comments)

Trip Blank(s) received Yes ✓ No ____

If Trip Blank was supplied by CAS, record serial # ____-TB-____

Temperature of sample(s)/cooler 2 °C Temp Blank? Y or N (Circle One)

Voa's Marked Preserved? Yes ✓ No ____ Filled Properly? Yes ✓ No ____ (See Comments)

Preserved Bottles Requiring pH check(s)? Yes ____ Appropriate Preservation? Yes ____ No ____

RUSH Turn around time? Yes ____ Notified ____ Date & Time ____

Short Hold-Time Analysis (check all that apply)

ASAP	Res Cl____	D.O____	Flash____	Diss S2-____	Ferrous Fe____
24HR	pH____	Odor____	Cr+6____		
48HR	BOD____	Color____	MBAS____	Nitrate____	
	Nitrite____	O-PO4____	Sett Sol____	Turbidity____	
72HR	Vapors____				

Notified ____ Date & Time ____

Container(s) received and their preservative(s):

-1 & -2 = 3-40ml VOA (HCL)

-3 = 1-40ml VOA (HCL)

Comments Watch hold time. Only 1 VOA for TB

22

Initials, Date, Time LK 2/16/05 0905 2/16/05

r:\sr_forms\cooler.doc Rev. 2/25/02

Columbia Analytical Services INC.
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 1

SR # X0500137
CAS Contact

Project Name: WESTERN AVE	Project Number: 1303.016.07
Project Manager: PAUL PLATO	Report CC:
Company/Address: GEOTRANS INC, 4801 E WASHINGTON ST, SUITE 260, PHOENIX AZ 85034	
Phone #: (602) 682-3320	FAX#: (602) 682-3318
Sampler's Signature: KARIN HARKER	Sampler's Printed Name: KARIN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GC/MS 8260/624 524.2	8015 AZR1 C-10-C-32	PAH 8310	Halogenated & Aromatic 601/602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter	REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE														
~~LAB~~ COG-MW 3	X0500137-001	2/3/05	1327	WATER	3		X							
ADEQG-MW 3	↓ -002	2/3/05	1427	WATER	3		X							
TRIP BLANK	X0500137-003	2/3/05		WATER	1		X							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

[redacted]

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: KARIN HARKER	Signature: Frank Martinez	Signature	Signature	Signature	Signature
Printed Name: KARIN HARKER	Printed Name: FRANK MARTINEZ	Printed Name	Printed Name	Printed Name	Printed Name
Firm: GEOTRANS INC	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time: 2/3/05 1635	Date/Time: 2/3/05 16:35	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

X050 0/37

Columbia Analytical Services, Inc.
Phoenix, AZ

Sample Receipt and Preservation Form

Client: GeoTrans Project Name: Western

Sample(s) Received on: 2-3-05 date 1635 time

MeOH Extracts

VOA's ☑ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐ Tedlar Bags ☐ Encores ☐

MATRIX: SOIL ☐ WATER ☑ VAPOR ☐

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

1. Rush or standard turn-a-round time? RUSH STANDARD
2. Are the custody seals present? Yes ☐ No ☑
   If yes, how many and where? _____
3. Are the signature and date correct? Yes ☑ No ☐
4. Did all containers arrive in good condition? Yes ☑ No ☐
5. Are all container labels complete (i.e. preservation, sample ID)? Yes ☑ No ☐
6. Were the correct containers used for the tests indicated? Yes ☑ No ☐
7. Have VOA's been checked for the presence of air bubbles? (note problems in comments) Yes ☑ No ☐ N/A ☐
8. Is there sufficient sample volume to perform the requested analysis? Yes ☑ No ☐
9. Temperature of sample(s) upon receipt: 2.0

Explaination of discrepancies: _____

		YES	NO
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		
2	HCl		

VOA Vial pH Verification
(Tested After Analysis)
☐ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

Comments: _____

Form Completed and Sample(s) Received by (initials): KM

X050 0/37

Columbia Analytical Services, Inc.
Phoenix, AZ

Analysis Acknowledgement Form

The Following tests are preformed at Columbia Analytical Services - Phoenix lab:

Volatiles	8260	624	602	524.2	8021B	8015GRO
Semi-Volatiles	8015AZR1(soils only)			8310	610	8330(soils only)
Wet Chemistry	pH					

Note: Samples for 524.2 Drinking Water will be subcontracted out to our Kelso facility.

All other analysis requested by the client will be subcontracted out. Columbia Analytical Services - Phoenix Lab reserves the option to subcontract any of the above-mentioned tests out due to capacity issues or instrument failures.

Comments: _____

_____

Client Acknowledgement (initials): KH Date 2/3/05

GeoTrans, Inc.

Project No. 1303.016 Task No. 07

Site Name: WESTERN AVE Technician: KARIN HARKER

Date: 1/27/05

Well ID	Time	Depth to Water (feet) Previous	Current	Measuring Point	Comments
MW-1	0823	62.70	64.72	NTOC	
MW-2	0809	68.05	69.80	NTOC	
MW-3	0801	65.01	66.58	PORT	
MW-4	0816	64.95	67.05	PORT	VAULT DAMAGED (WEST SIDE)
MW-5	0828	64.37	66.31	PORT	
MW-6	0833	65.52	67.35	PORT	
MW-7	0845	59.41	61.25	PORT	
COG MW 3	1110	~62.84	66.36	PORT	GN 2/3/05
GMW-4	1017	~63.32	67.02	PORT	
GMW-5	0855	58.86	60.60	PORT	

GWLEVELTBL2.XLS

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: WESTERN AVE.
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: MW-1 Sample ID: MW-1
Date: 1/28/05 Time: 1139

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☒ St. Steel ☐ Other
Sampled by: KARIN HARKER

- DUP -

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 85
Water Level Depth (WL in feet BTOC): 64.72
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☒ Submersible 2" ☐ Turbine ☐ Bladder
☐ Other - Type: Pump Diam: ☐ 2-inch ☐ 3-inch

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(85 (TD (feet)) - 64.72 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 39.72 gallons (Calculated Purge Volume)

PURGE TIME

1103 Start
1111 Stop
0:08 Elapsed ~11 to 14 min

PURGE RATE

Initial 5.2 gpm
Final gpm
Avg gpm

TOTALIZER

Initial 395.1 gals
Final 435.7 gals
~~434.8~~

ACTUAL PURGE VOLUME

40.6 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (µmhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1104	23.97	1.59	5.67	7.94	1.0	306	192.0
1107	24.44	1.470	4.68	7.87	0.9	308	38.4
1109	24.67	1.442	4.91	7.87	0.9	306	18.59

Observations during pumping (well condition, turbidity, odor, color): Pump out, no odor, cloudy

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: 1.5-INCH DISPOSABLE PLASTIC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-1	3 x 40mL	8260	HCl	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.	"Blind" Time
MW-1	~~AMPMW-1~~	1200

Blank Samples

Type	Sample ID	Time

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: WESTERN AVE.
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: MW-2 Sample ID: MW-2
Date: 1/28/05 Time: 1300

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☐ PVC ☒ St. Steel ☐ Other
Sampled by: KARIN HARKER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 69.80
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☒ Other: 80% RECHARGE

PURGE METHOD

☐ Bailer - Type:
☒ Submersible 2" ☐ Turbine ☐ Bladder
☐ Other - Type: Pump Diam: ☐ 2-inch ☐ 3-inch

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION:

[.2 x (80-69.80)] + 69.80 = 71.84

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 69.80 (WL (feet))) x 4 (D (inches))^2 x 3 (#Vols) x 0.0408 = 19.98 gallons (Calculated Purge Volume)

PURGE TIME

1225 Start ~7 min
1232 Stop
0:07 Elapsed

PURGE RATE

Initial / gpm
Final / gpm
Avg / gpm

TOTALIZER

Initial 435.7 gals
Final 441.5 gals PURGED DRY
455.7

ACTUAL PURGE VOLUME

5.8 gallons

FIELD PARAMETER MEASUREMENT

WL 69.72 1258

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (µS/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1226	24.06	1.0716	5.71	7.79	0.7	334	200+

Observations during pumping (well condition, turbidity, odor, color): LIGHT BROWN MILKY

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: 1.5' DISPOSABLE PLASTIC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-2	3 x 40mL	8260	HCl	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.	"Blind" Time

Blank Samples

Type	Sample ID	Time

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: WESTERN AVE.
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: MW-3 Sample ID: MW-3
Date: 1/28/05 Time: 0925

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: KARIN HARKER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 66.58
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type: 2" pump
☒ Submersible ☐ Turbine ☐ Bladder
☐ Other - Type: Pump Diam: ☐ 2-inch ☐ 3-inch

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 66.58 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 26.28 gallons (Calculated Purge Volume)

PURGE TIME

0907 Start ~42 min
0913 Stop
0:06 Elapsed

PURGE RATE

Initial 5.2 gpm
Final gpm
Avg gpm

TOTALIZER

Initial ~~2143.15~~ gals 361.9
Final 395.2 gals
~~356.18~~

ACTUAL PURGE VOLUME

33.3 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock/Elapsed)	T ☒ °C ☐ °F	Conductivity (µmhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
0910	22.72	1.146	6.32	8.25	0.7	266	200+
0912	23.46	1.116	4.73	8.20	0.7	274	200+
0913	23.18	1.126	4.71	8.16	0.7	278	200+

Observations during pumping (well condition, turbidity, odor, color): PUMP OUT, NO ODOR, LIGHT BROWN MILKY

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: 1.5-INCH DISPOSABLE PLASTIC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-3	3x40mL	8260	HCL	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.	"Blind" Time

Blank Samples

Type	Sample ID	Time

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: WESTERN AVE
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: MW-4 Sample ID: MW-4
Date: 1/27/05 Time: 1538

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: KARIN HARKER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 67.05
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder
☒ Other - Type: DEDICATED Pump Diam: ☐ 2-inch ☐ 3-inch

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 67.05 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 25.36 gallons (Calculated Purge Volume)

PURGE TIME

1531 Start ~47min
1537 Stop
0:06 Elapsed

PURGE RATE

Initial 6 gpm
Final 5.4 gpm
Avg 5.7 gpm

TOTALIZER

Initial 213.5 gals
Final 266.5 gals
~~238.9~~

ACTUAL PURGE VOLUME

53 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (~~µmhos~~ mS/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1535	24.22	1.050	6.64	7.88	0.7	309	19.5
1537	23.44	1.072	5.00	8.01	0.7	301	8.75

Observations during pumping (well condition, turbidity, odor, color): GOOD (WORKED), NO ODOR, CLEAR
Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☐ Baller - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-4	3 X 40mL	8260	HCl	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.	"Blind" Time

Blank Samples

Type	Sample ID	Time

Job Name: WESTERN AVE.
Job Number: 1303.016.07
Location:
Recorded by: Karin Harker

Well ID: MW-5 Sample ID: MW-5
Date: 1/27/05 Time: 1628

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Karin Harker

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 66.31
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☒ Other - Type: DEDICATED

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 66.31 (WL (feet))) X 4 (D (Inches))^2 X 3 (#Vols) X 0.0408 = 26.81 gallons (Calculated Purge Volume)

PURGE TIME

1621 Start
1627 Stop
0:06 Elapsed

PURGE RATE

Initial 5.2 gpm
Final 5.0 gpm
Avg 5.1 gpm

TOTALIZER

Initial 2666.4 gals
Final 320.5 gals
293.2

ACTUAL PURGE VOLUME

54.1 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (µmhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1622	22.59	1.68	5.19	8.01	1.1	297	12.30
1624	23.55	1.70	5.14	8.12	1.1	286	10.79
1627	23.71	1.68	4.76	8.05	1.1	295	6.69

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-5	3x40mL	8260	HCl	CAS	

QC CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Job Name: WESTERN AVE.
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: MW-6 Sample ID: MW-6
Date: 1/27/05 Time: 1725

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: KARIN HARKER

DUP

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 67.35
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☒ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☒ Submersible 2" ☐ Turbine ☐ Bladder; Pump No.
☐ Other - Type:

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC)
Screen Interval (feet BTOC) from 45 to 80

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 67.35 (WL (feet))) x 4 (D (Inches))^2 x 3 (#Vols) x 0.0408 = 24.77 gallons (Calculated Purge Volume)

PURGE TIME

1707 Start
1716 Stop
0:09 Elapsed

PURGE RATE

Initial 5.6 gpm
Final 5.4 gpm
Avg 5.5 gpm

TOTALIZER

Initial 320.5 gals
Final 361.8 gals
~~54.82~~
345.27

ACTUAL PURGE VOLUME

41.3 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (µmhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1707	22.86	1.54	5.52	8.07	1.0	298	200+
1710	23.91	1.58	5.40	7.94	1.0	303	200+
1713	24.28	1.57	5.19	7.96	1.0	304	200+

Observations during pumping (well condition, turbidity, odor, color): GOOD (NO PUMP), NO ODOR, CLOUDY (MILKY) - WHITE

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: 1.5-INCH DISPOSABLE PLASTIC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-6	3x40mL	8260	HCl	CAS	

QC CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
MW-6	ADEQ MW-6 1740

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

b Name: WESTERN AVE
b Number: 1303.016.07
ocation:
ecorded by: Karin Harker

Well ID: MW-7 Sample ID: MW-7
Date: 1/28/04 Time: 1429

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: Karin Harker

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 61.25
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder; Pump No.
☒ Other - Type: DEDICATED

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD feet) - 61.25 (WL feet)) X 4 (D inches)^2 X 3 (#Vols) X 0.0408 = 36.72 gallons (Calculated Purge Volume)

PURGE TIME

1348 Start
1354 Stop
Elapsed
1428

want PUMP OFF OVER HEATED

PURGE RATE

Initial 6 gpm
Final 2.4 gpm AT 238.77
Avg gpm

TOTALIZER

Initial 441.3 gals
Final ~~475.0~~ 485.9 gals
~~475.0~~

WL: 61.21 1404

ACTUAL PURGE VOLUME

44.6 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (mS ~~µmhos/cm~~)	DO (mg/L)	pH	TDS (~~mg/L~~)	ORP (mV)	Turbidity (NTU)
1349	25.49	2.27	4.91	7.70	1.4	303	200+
1351	24.51	2.68	5.61	7.77	1.5	300	58.4
1353	23.37	2.28	6.55	7.81	1.8	298	
1424	25.08	2.18	2.54	7.70	1.5	291	19.8

Observations during pumping (well condition, turbidity, odor, color):

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: COG WWTP

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-7	3x40mL	8260	HCl	CAS	

QC CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

GEOTRANS, INC

GROUNDWATER SAMPLING FORM

Job Name: WESTERN AVE
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: GMW-5 Sample ID: GMW-5
Date: 1/27/05 Time: 1115

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: KARIN HARKER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 110
Water Level Depth (WL in feet BTOC): 60.60
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Turbine ☐ Bladder
☒ Other - Type: Pump Diam: ☐ 2-inch ☐ 3-inch
DEDICATED (CONTROL BOX)

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(110 (TD feet) - 60.60 (WL feet)) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 96.74 gallons (Calculated Purge Volume)

PURGE TIME

1040 Start ~30 min
1113 Stop
0:33 Elapsed

PURGE RATE

Initial 3.2 gpm
Final 3.2 gpm
Avg 3.2 gpm

TOTALIZER

Initial 115.5 gals
Final 213.5 gals
~~212.0~~

ACTUAL PURGE VOLUME

98 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (mS umhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1043	25.64	1.57	6.06	8.76	1.0	257	141.3
1048	25.52	1.66	8.84	9.71	1.1	145	86.2
1051	25.55	1.68	8.74	9.66	1.1	149	61.3
1054	23.31	1.70	5.72	10.00	1.1	156	49.1
1058	22.98	1.82	5.80	8.95	1.2	221	33.6
1103	23.26	1.73	5.37	8.75	1.1	214	29.4
1107	22.99	1.74	5.75	8.89	1.1	189	20.6
1111	23.50	1.74	5.93	8.86	1.1	183	200+

Observations during pumping (well condition, turbidity, odor, color): TAN, NO ODOR,

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: WATER WAGON (COG WWTP)

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
GMW-5	3X 40mL	8260	HCl	CAS	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.	"Blind" Time

Blank Samples

Type	Sample ID	Time

Job Name: WESTERN AVE
Job Number: 1303.016.07
Location:
Recorded by: KARIN HARKER

Well ID: COG-MW-3 Sample ID: COG-MW 3
Date: 2/3/05 Time: 1327

Well Type: ☒ Monitor ☐ Extraction
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Sampled by: KARIN HARKER

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other:
Total Depth of Casing (TD in feet BTOC): 80
Water Level Depth (WL in feet BTOC): 66.36
Number of Well Volumes to be Purged (#Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ Other:

PURGE METHOD

☐ Bailer - Type:
☒ Submersible ☐ Turbine ☐ Bladder; Pump No.
☒ Other - Type: WIZEPOINT CONTROL BOX

PUMP INTAKE SETTING

☒ Near Bottom ☐ Near Top ☐ Other:
Depth (feet BTOC) Screen Interval (feet BTOC) from to

PURGE VOLUME CALCULATION

(Note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft 4.75" = 0.92 gal/ft)

(80 (TD (feet)) - 66.36 (WL (feet))) X 4 (D (inches))^2 X 3 (#Vols) X 0.0408 = 26.7 gallons (Calculated Purge Volume)

PURGE TIME

1242 Start
1326 Stop
0:44 Elapsed

PURGE RATE

Initial 1.6 gpm
Final gpm
Avg gpm

TOTALIZER

Initial 1018.4 gals
Final 1052.9 gals
1045.1

ACTUAL PURGE VOLUME

34.5 gallons

FIELD PARAMETER MEASUREMENT

Time (Clock / Elapsed)	T ☒ °C ☐ °F	Conductivity (umhos/cm)	DO (mg/L)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)
1249	22.35	2.67	11.57	7.55	1.7	290	4.50
1252	24.90	2.14	3.74	7.29	1.4	290	
1256	24.54	2.15	3.03	7.32	1.4	281	3.53
1308	25.46	2.14	3.10	7.88	1.4	255	
1313	24.35	2.25	8.48	7.52	1.4	278	4.29
1317	24.36	2.24	10.67	7.56	0.9	272	
1321	24.59	2.15	12.16	7.63	1.3	266	2.76

Observations during pumping (well condition, turbidity, odor, color): GOOD, CLEAR, NO ODOR

Discharge water disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other: 50 GAL DRUM W/W COG

WELL SAMPLING

SAMPLING METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump

☒ Same as above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
COG-MW3	3 x 40mL	8260	HCl	CAS	

QA/QC CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
COG-MW3	ADEQ-COG-MW3 1427

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Columbia Analytical Services INC
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 1

SR # X0500137
CAS Contact

Project Name: WESTERN AVE	Project Number: 1303.016.07
Project Manager: PAUL PLATO	Report CC:
Company/Address: GEOTRANS INC 4501 E WASHINGTON ST, SUITE 260 PHOENIX AZ 85034	
Phone #: (602) 682-3320	FAX#: (602) 682-3318
Sampler's Signature: LARIN HARKER	Sampler's Printed Name: LARIN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602 / 8021	Volatile Organics GC/MS 8260 624 524.2	8015 AZRT C-10-C-32	PAH 8310	Halogenated & Aromatic 601 / 602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter							REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE																				
UNOCOG-MW3	X0500137-001	2/3/05	1527	WATER	3		X													
ADEQG-MW3	↓ -002	2/3/05	1427	WATER	3		X													
	-																			
TRIP BLANK	X0500137-003	2/3/05		WATER	1		X													

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: ___ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: LARIN HARKER	Signature: Frank Martinez	Signature	Signature	Signature	Signature
Printed Name: GEOTRANS INC	Printed Name: FRANK MARTINEZ	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 2/3/05 1635	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time	Date/Time: 2/3/05 16:35	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

Columbia Analytical Services, Inc.
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 2

SR # X0500116
CAS Contact

Project Name: WESTERN AVE.
Project Number: 1303.016.07
Project Manager: PAUL PLATO
Report CC:
Company/Address: GEOTRANS LLC.
4801 E. WASHINGTON ST, SUITE 260
PHOENIX AZ 85034
Phone #: (602) 682-3320
FAX#: (602) 682-3318
Sampler's Signature: Karia Harker
Sampler's Printed Name: KARIA HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602/8021	Volatile Organics GCMS 8260, 624, 524.2	8015 AZR1 C-10-C-32	PAH 8310	Halogenated & Aromatic 601/602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter							REMARKS/ ALTERNATE DESCRIPTION
MW-1		1/25/05	1139	WATER	3		X													
MW-2		1/25/05	1300		3		X													
MW-3		1/26/05	0925		3		X													
MW-4		1/27/05	1538		3		X													
MW-5		1/27/05	1628		3		X													
MW-6		1/27/05	1725		3		X													
MW-7		1/28/05	1429		3		X													
ADEQ MW-1		1/28/05	1200		3		X													
ADEQ MW-6		1/27/05	1740		3		X													
GMW-5		1/27/05	1115		3		X													

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required).
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: 2.0 CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Karia Harker	Signature: Tracy Dutton	Signature	Signature	Signature	Signature
Printed Name: KARIA HARKER	Printed Name: Tracy V. Dutton	Printed Name	Printed Name	Printed Name	Printed Name
Firm: GEOTRANS	Firm: CAS/PHX	Firm	Firm	Firm	Firm
Date/Time: 1/31/05 1608	Date/Time: 1/31/05 1608	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

Columbia Analytical Services INC
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

SR # X0500116

CAS Contact

Project Name: WESTCH AVE	Project Number: 1502.06.07
Project Manager: PAUL PLATO	Report CC:
Company/Address: GEOTEMA INC 4801 E WASHINGTON ST STE 160 PHOENIX AZ 85034	
Phone #: (602) 685-8320	FAX#: (602) 685-2318
Sampler's Signature: [signature]	Sampler's Printed Name: PALEN HARKER

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	BTEX 602 / 8021	Volatile Organics GCMS 8260/624 524.2	8015 AZR1 C-10 C-32	PAH 8310	Halogenated & Aromatic 601 / 602 8021	8 RCRA Metals Total TCLP	Lead Total TCLP	Flash Point pH Paint Filter							
EB-1		1/28/05	1830	WATER	3		X													
TRIP BLANK					1		X													

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: 2.0 CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: [signature]	Signature: [signature]	Signature:	Signature:	Signature:	Signature:
Printed Name: PALEN HARKER	Printed Name: Lily Dutton	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: GEOTEMA INC	Firm: CAS/PHX	Firm:	Firm:	Firm:	Firm:
Date/Time: 1/31/05 1605	Date/Time: 1/31/05 1608	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

APPENDIX I

CURRENT AND FUTURE BENEFICIAL LAND AND WATER USE WESTERN AVENUE WQARF SITE CITIES OF AVONDALE AND GOODYEAR, ARIZONA

Prepared for:

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Submitted by:

GeoTrans, Inc.
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
(602) 682-3320

June 30, 2005

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	iii
1.0 INTRODUCTION	1
1.1 PURPOSE OF BENEFICIAL USE STUDY APPENDIX TO RI REPORT	1
1.2 SITE BACKGROUND	1
1.2.1 Site Description	1
1.2.2 Western Avenue WQARF Registry Site	1
2.0 BENEFICIAL USE EVALUATION	3
2.1 REASONABLY FORESEEABLE LAND USE	3
2.1.1 Land Use Planning and Zoning	3
2.1.2 Historical Land Use	4
2.1.3 Current and Projected Land Use	5
2.2 REASONABLY FORESEEABLE WATER USE	7
2.2.1 Available Water Resources	7
2.2.2 Beneficial Uses of Water	9
2.2.3 Current and Projected Water Use	9
2.2.4 Water Supply	11
3.0 ANALYSIS AND SUMMARY OF BENEFICIAL USES	14
3.1 EVALUATION OF EXISTING LAND AND WATER USE	14
3.2 FUTURE LAND AND WATER USE	15
3.3 EVALUATION OF ISSUES FOR FUTURE LAND AND WATER USE	15
4.0 REFERENCES	16
5.0 PERSONAL INTERVIEWS AND CONTACTS	17

LIST OF TABLES

Table I1	Water Supply Wells near Western Avenue Plume WQARF Site
Table I2	City of Avondale and City of Goodyear Wells
Table I3	Approximate Water Capacity for Beneficial Use for Groundwater Recharge for the City of Goodyear (in text)
Table I4	Approximate Water Capacity for Beneficial Use for Groundwater Recharge for City of Goodyear (in text)

LIST OF FIGURES

Figure I1	Western Avenue Plume WQ
Figure I2	Site Plan
Figure I3	City of Avondale – General Land Use Plan
Figure I4	City of Avondale - Zoning Atlas
Figure I5	City of Avondale - Zoning Atlas
Figure I6	City of Avondale - Zoning Atlas
Figure I7	City of Avondale - Zoning Atlas
Figure I8	City of Goodyear – Land Use Plan
Figure I9	City of Avondale – General Plan Update – Infill Districts
Figure I10	City of Goodyear – Zoning Map
Figure I11	Potentiometric Map – Subunit A
Figure I12	Potentiometric Map – Subunit C
Figure I13	Production Well Locations - Western Avenue Plume WQARF Site

Site Background

This report, in accordance with Arizona Administrative Rule R18-16-406, Section D, outlines reasonably foreseeable uses of land and water for the Western Avenue Plume Water Quality Assurance Revolving Fund (WQARF) Site (the Site)(Figure A1). The Site occupies approximately 200 acres, and is located along Western Avenue, within the boundaries of the Cities of Avondale and Goodyear, Arizona. The Site is bounded approximately by the groundwater contamination plume, which generally extends from Hill Drive to the north, Third Street to the east, approximately 1000 feet north of State Route 85 to the south and Litchfield Road to the west (Figure I2). Groundwater beneath the Site contains dissolved tetrachloroethene (PCE), whose source(s) has not yet been identified. The Site was identified as a WQARF Site in 1998. The Arizona Department of Environmental Quality (ADEQ) started monitoring groundwater along Western Avenue in 1995.

GeoTrans, Inc. (GeoTrans) has prepared this report in accordance with Task Assignment 04-0045, Arizona Superfund Response Action Contract (ASRAC), ADEQ Contract Number EV03-0073.

Land Use

Land use in the area near the Site consists of a mix of residential, commercial and industrial. The Site is located within the boundaries of the Cites of Avondale and Goodyear, Arizona, and land use in each City will be outlined separately.

City of Avondale: The Site and surrounding land is primarily used as residential, although there is a school on Western Avenue between Third Avenue and Central Avenue. Land use is mixed along Western Avenue, including commercial and light industrial.

City of Goodyear: The land east of Litchfield Road is primarily residential, while land along Western Avenue consists of community commercial. Land use along the west side of Litchfield Road and east of the Phoenix-Goodyear Airport is light industrial.

Current Water Use

City of Avondale

The City of Avondale is dependent on a mix of Central Arizona Project (CAP) water, Salt River Project (SRP) surface water and groundwater produced from seven City wells. Current water demand is estimated at 5,624 gallons per minute (gpm), which equals 8,750 acre-feet per year (ac-ft/yr). For the year 2000, the total usage was estimated at approximately 7,000 ac-ft. The maximum daily water demands are estimated at 12,935 gpm. Future average daily and maximum daily demands are expected to rise to 8,927 gpm and 20,533 gpm, respectively, at build-out.

City of Goodyear

The majority of City of Goodyear's groundwater is supplied by the City's 10 wells, most of which are located in the West Salt River Valley Sub-basin. The City does not supply any surface water to its residents at the present time. Historically, agricultural fields have been irrigated with groundwater and surface water conveyed through the Buckeye and Roosevelt Irrigation District canals. There are three water reclamation facilities (WRF) serving the City of Goodyear's wastewater treatment needs.

Phoenix Goodyear Airport – South Superfund Site (PGA-South)

Currently, two ongoing remedial actions at the PGA-South National Priorities List (NPL) site are actively pumping and treating groundwater from three remediation systems. These systems include: Subunit A and Subunit C - North and South. The Subunit A system is currently pumping groundwater from 12 extraction wells, which is treated and subsequently re-injected at 16 injection wells. The net use of groundwater is zero pumpage, with the exception of losses that occur during treatment. The system currently pumps 450 to 550 gpm from the shallow (Subunit A) aquifer. The operation of the treatment system may be discontinued in the future, since limited further remediation is possible.

Two remediation systems are in operation in the Subunit C aquifer, a North System and a South System. The Subunit C – South system currently includes three extraction and three injection wells, operating at a rate of 400 gpm. One of the extraction wells was shutdown in 1999, and one more will probably be shutdown in the near future. The system started operation in 1995 and is projected to operate through 2008.

Concerns for Future Use

The main concern for soil cleanup activities and the remediation of the aquifer is whether development would hinder or impede remediation of the Site. These concerns include:

- Addition of new wells with related groundwater pumping by the two Cities or by new development;
- Potential impacts from changes in operation of the PGA-South remediation systems;
- Construction of buildings or other infrastructure, which may impede site remediation activities; and,
- Changing the industrial zoning to residential zoning.

1.0 INTRODUCTION

1.1 PURPOSE OF BENEFICIAL USE STUDY APPENDIX TO RI REPORT

This report, in accordance with Arizona Administrative Rule R18-16-406, Section D, outlines reasonably foreseeable uses of land and water for the Western Avenue Plume Water Quality Assurance Revolving Fund (WQARF) Site (the Site)(Figure I1). This report, prepared by GeoTrans, Inc. (GeoTrans), summarizes the land and water use information collected for the Site located within the Cities of Avondale and Goodyear, Arizona. This information will be included as Appendix A to the Western Avenue WQARF Site Remedial Investigation (RI) report, when completed.

GeoTrans has prepared this report in accordance with Task Assignment 04-0045, Arizona Superfund Response Action Contract (ASRAC), Arizona Department of Environmental Quality (ADEQ) Contract Number EV03-0073.

1.2 SITE BACKGROUND

1.2.1 Site Description

The Site occupies approximately 200 acres, and is located along Western Avenue, within the boundaries of the Cities of Avondale and Goodyear, Arizona. The Site boundaries are defined by the groundwater contamination plume, which generally extends from Hill Drive to the north, Third Street to the east, approximately 1000 feet north of State Route 85 to the south and Litchfield Road to the west (Figure I2). Groundwater at the Site has been found to contain concentrations of tetrachloroethene (PCE).

1.2.2 Western Avenue WQARF Registry Site

In 1993, PCE was detected upgradient of the PGA-South Federal Superfund site. Increasing concentrations of PCE were noted in groundwater data from wells in Subunit A1, specifically GMW-2, GMW-4 and GMW-7. PCE was also detected in both GMW-3 and GMW-4. The highest concentrations of PCE were detected in the wells upgradient of the PGA-South site, which indicated that a source was located upgradient of the PGA-South site, possibly near the City of Goodyear (COG) Public Works facility.

The COG Public Works facility had a leaking underground storage tank (LUST) located onsite, which had been investigated. During the groundwater sampling conducted by the City of Goodyear, PCE was detected in wells associated with the LUST site. In 1994, ADEQ's Site Assessment & Hydrology Unit conducted limited soil vapor sampling at the COG Public Works facility and also at Western Dry Cleaners. The vapor sample results from both facilities did not detect PCE contamination.

---

1 Subunit A represents the shallow aquifer at the PGA-South and Western Avenue WQARF Sites. This aquifer is separated from the lower Subunit C aquifer by a clay layer (Subunit B). Contamination at the Western Avenue WQARF Site has been documented in the Subunit A aquifer only.

In 1995, two monitor wells were installed in order to characterize the groundwater contamination east and north of the vicinity of the PGA-South site. The two wells were installed up and downgradient of the former Western Dry Cleaners facility, on the boundary between the Cities of Avondale and Goodyear. City of Avondale (COA) MW-1 is located downgradient of the Western Dry Cleaner site, and COA MW-2 is located upgradient. The results of the sampling suggested that the highest concentrations in groundwater are possibly located away from the source. ADEQ also inferred that Subunit A groundwater extraction wells associated with PGA-South were capturing contaminated groundwater from the Site.

The Site was placed on the WQARF Registry in December 1998. In October 2000, ADEQ installed five monitoring wells as part of an early response action (ERA) evaluation. The purpose of the ERA was to better define the lateral and vertical extent of contamination, gain a better understanding of where the source area(s) may be located, and to determine the approximate mass of PCE within the plume.

In 2001, ADEQ conducted a soil gas survey at the former Aladdin Dry Cleaners facility. Results of the soil gas survey indicated minor concentrations of PCE at this location. ADEQ also started a RI at the Site. In May 2003, an Industrial Survey Report was completed as part of the RI to assist in identifying potential source areas. The highest detected concentration of PCE in the groundwater at the Site was 22 micrograms per liter (µg/l), in April 2001 at monitor well COG-MW3. During the most recent groundwater sampling event (March 2003), the highest PCE concentration was 7.5 µg/l, at monitor well COG-MW3. The aquifer water quality standard (AWQS) for PCE is 5 µg/l. Currently, contaminated groundwater from the Site appears to be contained or captured by extraction wells supplying the operating PGA-South treatment system.

2.0 BENEFICIAL USE EVALUATION

2.1 REASONABLY FORESEEABLE LAND USE

In order to evaluate reasonably foreseeable land use within the Western Avenue WQARF Site area, documents and maps were obtained from the Cities of Avondale and Goodyear, Arizona. These maps and information outline land use planning and zoning for the area of the Site, which allows a general discussion of land use as it relates to potential site remediation. In general, this report focuses on defining existing or future land uses which may impede or restrict options for Site remediation or investigation.

2.1.1 Land Use Planning and Zoning

City of Avondale

In general, the City of Avondale portion of the Site is located in a residential area that contains commercial business along Western Avenue and residential properties to the north and south of Western Avenue. Ms. Anna Roedler, City of Avondale Planner, provided a copy of the *City of Avondale General Plan 6.17.02*, the General Plan Land Use Map 6.17.02 (Figure I3) and the relevant pages from the August 2002 Zoning Atlas of the City of Avondale (Figures A4 through A7). The General Plan outlines the general development plans for the City of Avondale through 2020. The City of Avondale area of the Western Avenue WQARF Site is completely contained within the boundaries of the 2002 City of Avondale General Plan Update area. The planning area encompasses almost 94 square miles (Figure I3). The Land Use Element of the General Plan contains goals, policies and objectives that provide direction on how the City of Avondale envisions the community developing in the future. A review of these documents suggests that current zoning for the City of Avondale is consistent with the long term plan for the area, which is for commercial along Western Avenue and residential north and south of Western Avenue.

City of Goodyear

The City of Goodyear portion of the Western Avenue WQARF Site is completely contained within the boundaries of the City of Goodyear General Plan Update 2003-2013. The planning area consists of approximately 86,400 acres comprising 135 square miles (Figure I8). The Land Use Element of this plan is the foundation that the City uses to integrate future growth and development within its existing land use pattern and land that has been previously planned and approved. The intent of the Land Use Element is to recommend the appropriate land use type, the approximate location, the general performance standards of compatibility, and density/intensity.

2.1.2 Historical Land Use

Cities of Avondale and Goodyear

To determine the historical land use in the area of the Site, GeoTrans reviewed aerial photographs at the Noble Engineering and Science Library at Arizona State University (Nobel Library). The Noble Library has an archive of historical and current aerial photographs for the Phoenix Metropolitan area. The Noble Library was able to provide one photograph for review, dated 1935. GeoTrans also contacted Rupp Aerial Photography, Inc. in Phoenix, who provided an aerial photograph dated in 1985 that included the Site. GeoTrans was able to obtain an aerial photograph dated 1996 from TerraServer that included the Site. A summary of the aerial photograph review is presented below.

1935

The Site area is mainly vacant land, with few structures. The railroad tracks to the south are present. The surrounding area is agricultural land or vacant desert land.

1949

The residential block north of Western Avenue and the industrial block south of Western Avenue in the City of Goodyear are developed, and appear as they are presently. The residential and commercial block north of Western Avenue in the City of Avondale is vacant. The residential and commercial block south of Western Avenue in the City of Avondale is developed, with large structures present. The structures do not appear to be residential. The airport and railroad appear in to be the same as they are presently. The surrounding area is agricultural land and vacant desert land.

1964

The City of Goodyear portion of the Site appears the same as in the 1949 historic aerial. The residential and commercial block north of Western Avenue in the City of Avondale are developed and appear to be the same as they are presently. The block south of Western Avenue in the City of Avondale appears as it did in the 1949 historic aerial. The airport and railroad appear to be the same as they are presently. The surrounding area is agricultural land and vacant desert land.

1977

The City of Goodyear portion of the Site appears the same as in the 1949 historic aerial. The residential and commercial block north of Western Avenue in the City of Avondale appears unchanged from the 1964 aerial. The block south of Western Avenue in the City of Avondale has changed and appears to be residential. The immediate surrounding area has been developed, and the surrounding area is agricultural land.

1985, 1992 and 2002

The latest three historic aerial photographs did not show any significant changes at the Site. Many of the surrounding areas were developed or changed.

2.1.3 Current and Projected Land Use

City of Avondale

Land use in the City of Avondale section of the Site is principally medium to medium-high density residential. This residential area is described as containing densities that range from 2.5 to 8 dwelling units per acre and may include single-family attached or detached dwelling units or condominiums, patio home, and town-home development. Churches, parks open spaces, and public facilities are permitted in this land use category.

The rest of the land use on the City of Avondale section of the Site is in the mixed-use category. This use provides for a mix of high intensity uses with a retail commercial emphasis. This designation may include a maximum of 45 percent (%) residential use. Mixed uses may include neighborhood and community retail, residential, hotel/motel, and employment.

Currently, the area of the Site is zoned as C-2, R-3, R-4, R1-6, and OTAB. C-2 represents community commercial, R-3 and R-4 represent multi-family districts and R1-6 represents single-family districts. OTAB represents Old Town Avondale Business district. Zoning in the area of the Site includes commercial class C-2 along Western Avenue, and residential classes R1-6, R-4 and R-1 within the area of the Site (Figures A4 through A7). The area is currently developed and the only open undeveloped land is located west of Third Avenue, south of Western Avenue. This land is zoned as R1-6, so it would be anticipated that development of single family residential housing would be appropriate for this land.

Community commercial districts are intended to accommodate development of commercial complexes providing goods and services to a community-wide trade area. It is further intended that such commercial centers shall be planned, developed and managed as integrated complexes with individual users, with a building square footage in the range of 100,000 to 200,000 gross square feet.

The purpose of the R-3 and R-4 districts is to provide for medium to high-density lifestyles, encompassing condominiums and rental units. These districts are appropriate in high activity areas of the City, adjacent to commercial areas. The purpose of the R1-6 District is to provide a variety of single-family detached residential dwelling types at an urban density. The districts are expected to serve as the predominant residential land use in the City.

The OTAB District is intended to provide for general retail, residential, professional office/service, and mixed-use activities, serving a regional/community-wide need under design standards, which ensure compatibility and harmony with adjoining land uses, and which encourage the highest quality design and development. This area is intended to promote a strong pedestrian orientation through its mix of permitted uses and specific development standards.

The City of Avondale section of the Site is located in area that has previously been developed. Therefore, the future land use and zoning is planned to coincide with the current land use and zoning. The City of Avondale General Plan 6.17.02 specifies the area of the Site is part of the Central/South City of Avondale Residential Infill Area (Figure I9), which implies that residential development is being encouraged to infill the vacant or undeveloped land in the area. For this reason, it is reasonable to assume that residential development may be undertaken for the undeveloped land in the area of the Site.

City of Goodyear

The land on the City of Goodyear's portion of the Site is used mainly for residential. The residential density ranges from mostly low to a small area of medium density. The low-density areas consist of detached, moderate-sized lot, single-family residential housing. The density in this area is two to four dwelling units per acre. The medium density areas consist of attached, single-family or detached multi-family residential housing. The density in these areas is six to ten dwelling units per acre.

A small part of the City of Goodyear section of the Site is categorized as community commercial, located along Western Avenue and Litchfield Roads. In these areas, service-oriented businesses serve the surrounding area; typical users include grocery stores, drug stores, convenience stores/gas stations, fast food chains, restaurants/cafes, and other personal convenience services which are sited on parcels that do not exceed 20 acres.

The area of the Site is currently zoned as R1-7, C-2, PFD, and I-2. R1-7 represents Single Family Residential area, C-2 represents General Commercial, PFD represents Public Facilities District and I-2 represents General Industrial Park. Figure I10 presents the zoning map provided by the City of Goodyear for the area near the Site.

The Single Family Residential District (R1-7) is designed for family housing with moderate lot sizes, allowing for reasonable outdoor enjoyment and privacy. One single-family dwelling is permitted on any one lot or parcel.

The General Commercial District (C-2) entails general retail, service and office use, as well as encouragement of major, master-planned retail shopping centers to respond to community and regional area demand for goods and services. Combined, multiple-use developments with shared access, parking, design themes and amenities are particularly intended.

The Public Facilities District (PFD) accommodates those uses that are provided by governmental entities for general public usage or convenience, and to insure compatibility with adjacent residential areas.

The General Industrial Park District (I-2) is to promote and protect large and intensive industrial manufacturing plants and their appurtenant uses, and to provide attractive and well maintained, planned Industrial Parks for the location of such activities.

The City of Goodyear section of the Site is located in area that has previously been developed. Therefore, the future land use is planned to coincide with the current land use.

Maricopa County

An approximately 15-acre parcel of land located on the southwest corner of Litchfield Road and Western Avenue is not included within the city limits of the City of Goodyear and is currently under the jurisdiction of Maricopa County. This parcel is occupied by the Lockheed-Martin and Loral Corporation facilities, which appear to completely cover the parcel. These lands are included on the City of Goodyear Land Use Plan (Figure I9) as light industrial use.

2.2 REASONABLY FORESEEABLE WATER USE

As part of the preparation of this report GeoTrans obtained and reviewed a copy of the Water Resource Element from the *City of Avondale General Plan, June 17, 2002* and the *Goodyear General Plan Update 2003-2013.* This report outlines the current and projected future water sources and demands for the City of Avondale and the City of Goodyear. Additionally, GeoTrans contacted Mr. Todd Strutmann of Sharp and Associates to outline water use in conjunction with the ongoing remediation at the PGA-South Superfund Site.

No private water supply wells were identified during the evaluation of wells in the area. Table I1 lists wells near the Site.

2.2.1 Available Water Resources

City of Avondale

Historically, the City of Avondale has had adequate water supplies, with the majority of municipal water supply coming from groundwater. Generally, the City of Avondale has no direct access to surface water supplies, other than those available through the Central Arizona Project (CAP) and the Salt River Project (SRP). The primary source of potable water for the City of Avondale is seven groundwater wells, SRP and CAP. SRP water must be used within SRP project boundaries, which is the area east of the Agua Fria River. For this reason, the primary water supply for the area of the Site is groundwater and CAP water.

City of Goodyear

Historically, the City of Goodyear and its surrounding area were predominately agricultural land that was irrigated with groundwater and surface water conveyed through the Buckeye Irrigation Company (BIC) and Roosevelt Irrigation District (RID) canals. Currently, surface water is not available for use by residents. Three irrigation districts hold surface water rights and distribute irrigation water throughout the area to their agricultural-based clients. Groundwater is currently the only potable water supply source being used by residents. The majority of the groundwater is supplied by the City's 10 wells. Most of these wells are located in the West Salt River Valley Sub-basin. The Western Avenue WQARF Site is located within this sub-basin.

PGA-South

An evaluation of current water use must include a discussion of ongoing remedial actions at the PGA-South NPL site, which currently is pumping and treating groundwater from three remediation systems. These systems include: Subunit A and Subunit C - North and South. Figure I11 and Figure I12 illustrate the most recent groundwater concentrations and well locations from the PGA-South site.

The Subunit A system is currently pumping groundwater from 12 extraction wells, which is treated and subsequently re-injected at 16 injection wells. The net use of groundwater is zero pumpage, with the exception of losses that occur during treatment. The system currently pumps 450 to 550 gpm from the shallow (Subunit A) aquifer. Based on the current plume configuration, groundwater at the Western Avenue WQARF Site is generally being captured by the pumping at PGA-South. Based on a conversation with Mr. Todd Strutmann of Sharp and Associates, the current Subunit A system is reaching a technical impracticability constraint with regard to further remediation of the Subunit A groundwater contamination, implying that further groundwater treatment will have limited impact on concentrations in the Subunit A aquifer. For this reason, the operation of the treatment system may be discontinued in the future, since limited further remediation is possible. Mr. Strutmann indicated that a waiver will be sought to discontinue remedial activities, with a possible termination in 2006.

Two remediation systems are in operation in the Subunit C aquifer, including a North System and a South System. The Subunit C – South system currently includes three extraction and three injection wells, operating at an aggregate rate of 400 gpm. One of the extraction wells was shutdown in 1999 and one more will probably be shutdown in the near future. The system started operation in 1995 and is projected to operate through 2008.

The North System was recently initiated, and currently includes one extraction and two injection wells, operating at an aggregate rate of 150 gpm. This system is undergoing a change in operation, with a new extraction well recently drilled to replace current wells. This extraction well has a designed production rate of 200 gpm, which will be piped to the Subunit C - South injection well after treatment. The current Subunit C - North injection and extraction wells will be shutdown as the new extraction well is placed into operation. The projected operational life of the Subunit C – North system is 12 years, or from 2004 to 2016.

Mr. Strutmann indicated that, in general, Subunit A inorganic water quality is poor and does not represent an active drinking water aquifer in the area of the PGA-South site. For this reason, system shutdown may be possible, even though concentrations will not have reached MCLs or AWQS by the 2006 estimated shutdown date. The Subunit C systems are located within a drinking water supply aquifer; with significantly better general water quality. These treatment systems are projected to complete remediation to relevant water quality standards.

2.2.2 Beneficial Uses of Water

City of Avondale

The primary beneficial uses of water in the area near the Site are domestic residential and commercial uses, supplied by wells and from the municipal water supply system. A limited amount of water is used for agricultural purposes. Within the Western Avenue WQARF Site, residents and businesses receive water from the City of Avondale's municipal water supply system, which is supplied primarily with groundwater, as noted. Information on the City's seven wells is presented in Table I2.

City of Goodyear

Throughout the City, beneficial uses of water are domestic residential, commercial and agricultural. Agricultural water use occurs in agricultural areas, west of the Site, representing 20 percent of the entire planned area. Within the Western Avenue WQARF Site, the majority of residents and businesses receive water from the City's ten wells. Information on the City's ten wells is present in Table I2.

Water supply wells near the Western Avenue WQARF Site are presented in Figure I13. The City of Goodyear supply well COG #1 is located within the boundaries of the Site.

PGA-South

No beneficial water use is currently occurring at the PGA-South site, since water pumped for remediation is re-injected. No beneficial water use is projected for the PGA-South site at this time, although possible beneficial use of water has been discussed, and may be implemented, if feasible. This may include use of water at the PGA site, for commercial or industrial purposes.

2.2.3 Current and Projected Water Use

City of Avondale

Currently, the City's daily average water demand is estimated at 5,624 gpm, which equals 8,750 ac-ft/yr. In the year 2000, the total usage was estimated at approximately 7,000 ac-ft. This daily average is lower than the estimated demand probably because some of the developments included in the demand estimates are not completely built-out. The maximum daily water demand is estimated at 12,935 gpm. Future average daily and maximum daily demands are expected to rise to 8,927 gpm and 20,533 gpm, respectively, at build-out.

Currently, the City of Avondale is located entirely within the Phoenix Active Management Area (AMA)[2] and participates in the Phoenix AMA plan. The management goal of the Phoenix AMA is to attain "safe-yield" by the year 2025. Achieving safe-yield, as defined in the Code, means "to

2 The City of Avondale can expand into the Pinal AMA through additional annexation to the southeast of the current City boundaries. The management goal for the Pinal AMA is somewhat different than the Phoenix AMA, as it does not specify safe-yield by a future date at this time.

achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial groundwater recharge in the active management area" (A.R.S.45-561, 12). To meet this requirement, the City of Avondale is a member of the Central Arizona Groundwater Replenishment District (CAGRD), whose goal is to manage basin-scale recharge for the members to meet Phoenix AMA safe-yield goals. The CAGRD operates and is constructing recharge facilities throughout the Phoenix AMA to recharge the groundwater aquifer using available CAP supplies. Because of this membership in CAGRD, and ongoing recharge at the City of Avondale Wetlands recharge facility, the City of Avondale can continue to pump groundwater as long as feasible.

The City of Avondale General Plan identifies a goal of an adequate 100 year water supply, which will require a mix of renewable surface water supplies (CAP and SRP), recharge of wastewater and continued use of groundwater. At present, this 100-year requirement has been met, although the planning time frame of the *City of Avondale General Plan, June 17, 2002* is through 2012. Based on a review of the General Plan, the City of Avondale intends to seek additional water supplies, particularly effluent from expanding wastewater treatment facilities. The City of Avondale currently does not directly use its current CAP allocation (4,746 ac-ft/yr), which is being recharged. Because the City's ultimate buildout size cannot be established (City boundaries can expand), future water demands and supplies cannot be established for a 100-year projection period with certainty. Based on the membership in CAGRD, groundwater use can expand in the City of Avondale which can be made up by recharge at CAGRD facilities. However, growth will primarily occur in areas far from the Site, and it is likely that additional groundwater pumpage will focus on areas of growth. Inorganic water quality concerns also limit areas of groundwater pumpage, particularly in the Subunit A aquifer.

City of Goodyear

Currently, the CAP has allocated 10,400 ac-ft/yr of water to three sources that supply water to the planning area. The sources allotted this water are the City of Goodyear (2,374 ac-ft/yr), the Arizona-American Water Company (1,439 ac-ft/yr) and Aquaquin (5,580 ac-ft/yr). However, the City of Goodyear does not currently have the facilities necessary to convey CAP water for potable use. The Water Resources Plan for the City of Goodyear indicates that the City of Goodyear is negotiating to share in construction of a water treatment and construct a conveyance system to receive CAP water. Additionally, three irrigation districts provide non-potable irrigation water to approximately 18,000 acres. With the City's current population, the maximum potential use of groundwater is 5,900 ac-ft/yr.

The City has been allotted approximately 7,100 ac-ft of CAP water as a result of the Gila River Adjudication process and can be utilized in 2005-2006. The City is pursuing an additional 7,100 ac-ft of CAP water from an Arizona tribal community. The purchase of these additional supplies is also anticipated to occur in 2005 or 2006.

The entire planning area for the City of Goodyear is located within the Phoenix AMA and participates in the Phoenix AMA plan. The City currently recharges 3.8 mgd of effluent from its wastewater recharge facilities. The City of Goodyear is also a member of CAGRD, which will allow the City to meet its planning goals for the Phoenix AMA.

As with the City of Avondale, the City of Goodyear can expand its boundaries, implying ultimate water supply and demand cannot be projected with certainty. In general, the expansion of the City of Goodyear will take place south of the Gila River, away from the Site. It is likely that additional groundwater pumpage that may be implemented to meet demand will be localized in the area of the projected land development. For this reason, it is unlikely that significant new pumpage will be implemented in the area of the Site. Because of this, supply and demand over 100 years cannot be estimated with any certainty, and the ultimate mix of groundwater supplies and locations of pumpage cannot be established conclusively. The planning horizon for the *Goodyear General Plan Update 2003-2013* is through 2013.

PGA-South

As previously noted, water use at the PGA-South site is projected to possibly terminate in the Subunit A aquifer by 2006, with shutdown of the remediation system. Water production from the Subunit C aquifer is projected to be terminated by 2016, although contamination from the Western Avenue WQARF Site does not appear to have impacted the Subunit C aquifer at this time.

2.2.4 Water Supply

City of Avondale

The Water Resource Element for the City of Avondale includes a summary of existing water supplies for the City. The water supply comes from two main sources. Groundwater wells supply the highest percentage of water. Groundwater well numbers 1, 6, 7, 8, 10, 11, and 12 serve the City. Currently, the total available water supply from these wells is approximately 10,100 gpm. All other water supply comes from SRP Water Rights. As of December 2000, the City had 2,226 acres that carry entitlements. At the average rate of 3 ac-ft of water per acre of entitlement, this calculation yields 6,678 ac-ft/yr, for the City of Avondale. It is estimated at final build-out, the City may have as much as 5,772 acres that carry entitlements. This would compute out to17,319 ac-ft/yr. A year of extreme drought or excessive flooding could result in the 3 ac-ft of water per acre of entitlement rate to be modified for that year.

The City has multiple methods of recharging the groundwater supply. The City currently generates 3,240 ac-ft/yr of effluent from the wastewater treatment plant and uses it to recharge the groundwater supply. The effluent is discharged into the confluence of the Aqua Fria and Gila Rivers. The City plans to expand its wastewater treatment plant to keep pace with future growth. The City uses all of the allocated 4,746 ac-ft/yr of CAP water to recharge the City of Avondale Wetlands Project. This constitutes approximately 1.5 percent of the total allotted municipal and industrial sectors of the Phoenix AMA. Drought conditions could effect the allocation, but generally, the CAP allocation serves as a reliable and renewable water source. Recharge credits may be accumulated to offset groundwater use. Through 1999, the City of Avondale had accumulated a total rechargeable credit of 6,840.50 ac-ft by utilizing its groundwater recharge project at the City of Avondale Wetlands. The City is also a member of CAGRD, which allows the City of Avondale to replenish excess groundwater through CAGRD facilities.

Table I3: Approximate Water Capacity for Beneficial Use for Groundwater Recharge for City of Avondale

Existing Water Supply	Use Or Recharge Capacity (ac-ft/yr)
Groundwater Wells	14,291
Central Arizona Project (CAP) Water	4,746
Salt River Project (SRP) Water Rights	6,678
Effluent	3,240
Assured Water Supply	265
Incidental Groundwater Recharge	300
Total	**29,520**

City of Goodyear

The City of Goodyear subcontracts 3,381 ac-ft/yr of water from CAP. The Arizona-American Water Company is allotted 1,439 ac-ft/yr. Aquaquin is allotted 5,580 ac-ft/yr of CAP water. Aquaquin provides water for the area of the City of Goodyear that is located north of I-10. Aquaquin also provides water to the City of Avondale, Litchfield Park and unincorporated areas within Maricopa County. The City's ten wells provide 5,900 ac-ft/yr potable water.

Three wastewater recharge facilities (WRF) serve the City. Palm Valley WRF is owned and operated by Aquaquin. It has a capacity of 4.1 million gallons per day (mgd) and is located north of I-10. The City operates the Corgett Basin WRF and the City of Goodyear WRF. The two facilities have a capacity of 3.8 mgd. Both WRF use their effluent to recharge groundwater. The WRF's recharge rate represents approximately 40 percent of the groundwater pumped. Because the ultimate requirement of the Phoenix AMA is a net balance of pumping and recharge, 60 percent of the currently pumped groundwater must ultimately be recharged through CAP or purchase groundwater credits from the CAGRD or other groundwater credits. Through its actions over the past six years, the City now has secured both the legal and administrative authority to withdraw groundwater indefinitely through its membership in the CAGRD, which will meet the additional recharge requirements.

Table I4: Approximate Water Capacity for Beneficial Use for Groundwater Recharge for City of Goodyear

Existing Water Supply	Use Or Recharge Capacity (ac-ft/yr)
Groundwater Wells	5,900
City of Goodyear CAP Water	3,381
Arizona-American Water Company (CAP)	1,439
Wastewater Recharge Facility Effluent	5,580
Total	**16,300**

The three irrigation districts currently provide irrigation to 20 percent of the planning area. The largest of these districts is the Roosevelt Irrigation District (RID). RID supplies irrigation water to approximately 13,000 acres of land. The Maricopa County Conservation District No. 1 (MWD)

supplies irrigation water to approximately 3,840 acres within the planning area. The Buckeye Irrigation Company (BIC) supplies water to approximately 1,070 acres of the planning area supplies the last district. BIC's source water comes from lands located adjacent to the Gila River which has been declared waterlogged by the ADWR, with very shallow groundwater levels. This declaration removes the strict conservation measures typically imposed on agricultural users.

In the future, areas designated as "waterlogged" by the ADWR may be considered a renewable resource, instead of mined groundwater. However, this resource could require substantial treatment for potable uses.

3.0 ANALYSIS AND SUMMARY OF BENEFICIAL USES

Land and water use issues in the Cities of Avondale and Goodyear area are closely intertwined, since water use is a direct consequence of commercial, industrial and residential development. The City of Avondale has limited agricultural water use or other uses which are not consequences of development activities. The City of Goodyear uses approximately 20 percent of its land for agricultural use, but the Western Avenue WQARF Site is not located within this area. For this reason, the evaluation of land and water use for the Site will be a joint assessment, which focuses on both development and possible changes in water use associated with these changes.

3.1 EVALUATION OF EXISTING LAND AND WATER USE

The current impacts to land and water at the Western Avenue WQARF site generally focus on limits to groundwater usage due to the presence of volatile organic compounds (VOCs). The Cities of Avondale and Goodyear currently do not use groundwater from the contaminated plume. The land use issues which must be evaluated include how development might impact coordination of remedial activities.

In 1993, PCE was detected in the Western Avenue groundwater plume, which lies upgradient of the NPL Phoenix-Goodyear Airport (PGA) South site. An increasing trend of PCE showed in the groundwater data from groundwater monitoring wells GMW-3, GMW-4 and GMW-7 in Subunit A, which is approximately 60 to 110 feet below ground surface. ADEQ performed soil vapor sampling at the City of Goodyear Public Works Facility and at Western Avenue Dry Cleaners. Sample results from both properties did not detect PCE. In 1995, two monitoring wells were installed upgradient and downgradient of the Western Dry Cleaners on the border of the Cities of Avondale and Goodyear. The well downgradient was consistently higher in PCE concentration. This information led ADEQ to believe that Subunit A extraction wells are drawing the plume resulting in the highest concentration in groundwater located away from the source.

Based on the available information for wells near the Site, no wells are currently impacted by contaminants with concentrations greater than relevant MCLs. No private wells were noted within the Western Avenue WQARF Site boundaries. City of Goodyear well COG #1 is within the boundaries of the Site, and would be considered threatened. City of Avondale Well #2 is located immediately upgradient of the Site, and would also be considered threatened. Currently, neither well is in use.

3.2 FUTURE LAND AND WATER USE

As previously noted, the predominant land use at the Western Avenue WQARF Site is mixed residential, commercial and industrial. The Site is not fully developed, with open land available for development south of Western Avenue, and on the northwest corner of Litchfield Road and Western Avenue. Since future development plans currently include additional commercial, residential and industrial development, it is likely that the existing mix of land use will be relevant into the future. The main concern for the remediation of the aquifer and soil is whether the current development would hinder or impede remediation of the Site. These concerns include:

- Addition of new wells with related groundwater pumping by the two Cities or by new development;
- Construction of buildings or other infrastructure, which may impede site remediation activities; and,
- Changing the industrial zoning to residential zoning.

3.3 EVALUATION OF ISSUES FOR FUTURE LAND AND WATER USE

Because groundwater contamination is the most significant issue, new or altered groundwater pumping schemes represent concerns for future remedial activities at the Site. The ADWR actively regulates groundwater pumping in the Phoenix AMA, where groundwater pumping is both limited and annually reported. The Cities of Avondale and Goodyear are located within the Phoenix AMA, so ADWR has authority to restrict groundwater development. Based on the review of current water supplies, new developments may include installation of additional groundwater wells, particularly in the City of Goodyear area. ADWR informs applicants for wells about WQARF sites and potential contamination, and has the authority to refuse an application to drill a well. Since the Cities of Avondale and Goodyear have municipal water service in the area, any new development will be connected to the respective Cities system.

The majority of new development, and thus additional water demand, is expected to occur in areas far from the Western Avenue WQARF Site, although new development is likely to occur within the City of Goodyear, west of Litchfield Road. This area is downgradient of the Site, and may require installation of water supply wells in this area. The area west of Litchfield Road, north of Western Avenue, is zoned as industrial, since it is located within the flight path of PGA.

Another concern would be the addition of new buildings, which may restrict the development of remedial actions. ADEQ generally works closely with the cities to coordinate ongoing remedial activities. The area of the Site is currently zoned as residential and commercial/industrial. There could be concern with implementing remediation in this area because of zoning codes. South of Western Avenue, on the City of Goodyear area of the Site, zoning is industrial and the properties are currently vacant land.

The last significant area of concern would be if the industrial-zoned area were changed to residential. This may not leave sufficient area to construct facilities to perform a remedial action, if necessary.

4.0 REFERENCES

City of Avondale, 2002. City of Avondale - General Plan, City of Avondale, June 17.

City of Goodyear, 2003. City of Goodyear - General Plan Update, 2003 - 2013, City of Goodyear, adopted July 7, 2003.

Sharp & Associates, 2002. First Semi-Annual Monitoring Report 2002, on the Phoenix Goodyear Airport Site, Goodyear, Arizona.

5.0 PERSONAL INTERVIEWS AND CONTACTS

GeoTrans had personal contacts with the Cities of Avondale and Goodyear regarding information presented in this report. The following summarizes the information and relevant sources that were used to compile the information presented in this report:

- **Anna Roedler – City of Avondale Planning Department**. Ms. Roedler provided zoning and planning information for the City of Avondale, including maps and zoning atlas information. A copy of the general plan was provided, along with relevant maps.

- **Kory Fewell – City of Goodyear Engineering Department** - Mr. Fewell assisted GeoTrans in identifying planning documents and information. Much of the information for the City of Goodyear was available on their website, including complete planning maps. Mr. Fewell provided a copy of the zoning map for the City of Goodyear.

- **Todd Strutmann P.E. – Sharp & Associates, Inc.** - Mr. Strutmann provided background information, current operation and planning regarding the PGA-South treatment system.

Table I1
Water Supply Wells Near Western Avenue WQARF Site

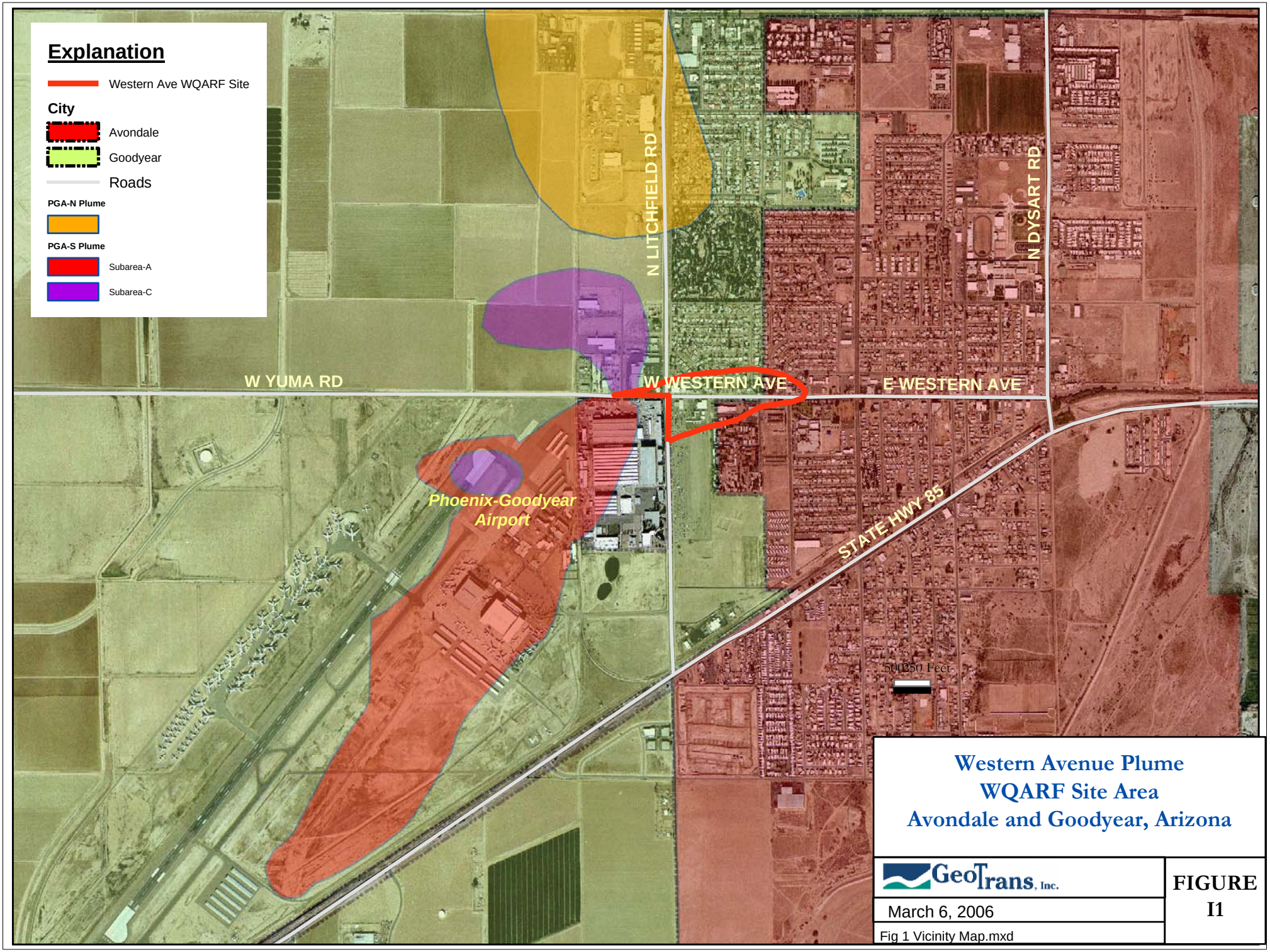
08-Mar-06

Well Location T		R		S	160	40	10	ADWR No.	Well Codes		Owner Name	Address				Depth/ Diameter		Date Drilled	Water Level	Type of Pump	Pump Power Source	Pumping Rate	Test Pump Rate	Feet of Drawdown
1	N	1	W	9	SE	SE	NW	617170	NON-EXEMPT		CITY OF GOODYEAR	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	501	16	7/4/1974	80			700	700	0
1	N	1	W	10	SE	SE	NW	608731	NON-EXEMPT	WATER PRODUCTION	CITY OF AVONDALE	525 N CENTRAL AVE	AVONDALE	AZ	85323	456	16	4/3/1949	85			1200	1200	0
1	N	1	W	10	SE	SW	SW	608732	NON-EXEMPT	WATER PRODUCTION	CITY OF AVONDALE	525 N CENTRAL AVE	AVONDALE	AZ	85323	460	20	1/1/1953	108			1200	1200	0
1	N	1	W	10	SW	SW		800667	EXEMPT	WATER PRODUCTION	GAGE JR, E R	PO BOX 1089	AVONDALE	AZ	85323	386	8	9/1/1966	0			35	35	0
1	N	1	W	10	SW	SW		800668	EXEMPT	WATER PRODUCTION	GAGE JR, E G	PO BOX 1089	AVONDALE	AZ	85323	386	8	9/1/1966	35			0	0	0
1	N	1	W	10	SW	SW	SE	609571	NON-EXEMPT	WATER PRODUCTION	CITY OF GOODYEAR	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	192	6		75			350	0	0
1	N	1	W	15	NE	SW	SE	800820	EXEMPT	WATER PRODUCTION	ST CYR,J D	PO BOX 252	WITTMANN	AZ	85361	162	8	5/15/1947	60			25	25	0
1	N	1	W	15	NE	SW	SE	506456	EXEMPT	WATER PRODUCTION	ST CYR,J D	PO BOX 252	WITTMAN	AZ	85361	185	10	3/19/1984	55	SUBMERSIBLE	ELECTRIC MOTOR	22	22	0
1	N	1	W	15	NE	SW	SW	510093	NON-SERVICE	WATER PRODUCTION	CIRCLE K CORP	4500 E 40TH ST	PHOENIX	AZ	85040	100	16	1/23/1985	55			0	0	0
1	N	1	W	15	NW	NE	SE	602773	NON-EXEMPT	WATER PRODUCTION	AVONDALE ELEMENTARY	235 W WESTERN AVE	AVONDALE	AZ	85323	414	16	1/1/1951	70			1000	1000	0
1	N	1	W	16	NE	NE	NE	617071	NON-EXEMPT	WATER PRODUCTION	LOCKHEED MARTIN	PO BOX 85	LITCHFIELD PARK	AZ	85340	320	20	1/1/1942	120			1000	1000	0
1	N	1	W	16	NE	NE	NW	617069	NON-EXEMPT	WATER PRODUCTION	LORAL CORPORATION	PO BOX 85	LITCHFIELD PARK	AZ	85340	360	10	8/21/1942	0			0	0	0
1	N	1	W	16	NE	NE	NW	617070	NON-EXEMPT	WATER PRODUCTION	LOCKHEED MARTIN	PO BOX 85	LITCHFIELD PARK	AZ	85340	330	20	7/8/1942	130			1000	1000	0
1	N	1	W	16	NE	NE	SW	617072	NON-EXEMPT	WATER PRODUCTION	LOCKHEED MARTIN	PO BOX 85	LITCHFIELD PARK	AZ	85340	302	20	7/27/1944	160			1000	1000	0
1	N	1	W	16	NE	NW	NE	532910	WITHDRAWAL PERMIT	OBSERVATION	GOODYEAR TIRE	1144 E MARKET ST	AKRON	OH	44316	102	8	1/10/1992	55	SUBMERSIBLE	ELECTRIC MOTOR	50	50	81

Table I2
City of Avondale and City of Goodyear Wells
Western Avenue WQARF Site

08-Mar-06

Well Location T		R		S	160	40	10	ADWR No.	Well Codes		Owner Name	Address				Depth/ Diameter		Date Drilled	Water Level	Type of Pump	Pump Power Source	Pumping Rate	Test Pump Rate	Feet of Drawdown
2	N	1	W	35	SE	SE	SW	588631	SERVICE	WATER PRODUCTION	City of Avondale	1211 S 4TH ST	AVONDALE	AZ	85323	0	0		0			0	0	0
1	N	1	W	11	NE	NE		604520	NON-EXEMPT	WATER PRODUCTION	City of Avondale	1211 S FOURTH STREET	AVONDALE	AZ	85323	165	20	1/1/1949	80			1200	1200	0
1	N	1	W	2	NW	NW	NW	607157	NON-EXEMPT	WATER PRODUCTION	City of Avondale	% DAVE NEWKIRK	AVONDALE	AZ	85323	800	20	12/17/1947	93	TURBINE	ELECTRIC MOTOR	1822	1822	0
2	N	1	W	36	SW	NW	NE	608794	NON-EXEMPT	WATER PRODUCTION	City of Avondale	1225 S 4TH ST	AVONDALE	AZ	85323	630	20	1/1/1950	85			3000	3000	0
1	N	1	W	2	SW	NW	SW	617678	NON-EXEMPT	WATER PRODUCTION	City of Avondale	BILL BATES	AVONDALE	AZ	85323	0	8	1/1/1970	120			200	200	0
1	N	1	W	2	SW	NW	SW	617679	NON-EXEMPT	WATER PRODUCTION	City of Avondale	BILL BATES	AVONDALE	AZ	85323	0	12	1/1/1970	120			0	0	0
1	N	1	W	14	SE	SE	SE	617881	NON-EXEMPT	WATER PRODUCTION	City of Avondale	525 N CENTRAL AVE	AVONDALE	AZ	85323	363	8	6/1/1972	45			180	0	0
1	N	1	W	23	SE	SE		625220	NON-EXEMPT	WATER PRODUCTION	City of Avondale	525 N CENTRAL AVE	AVONDALE	AZ	85323	305	8	1/1/1966	0			57	0	0
1	N	1	W	30	NE	SW	SE	503175	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD	GOODYEAR	AZ	85338	140	10	10/1/1982	60	SUBMERSIBLE	ELECTRIC MOTOR	0	0	0
1	N	2	W	23	NE	NE	NW	516698	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD	GOODYEAR	AZ	85338	1047	18	4/8/1987	82	SUBMERSIBLE	ELECTRIC MOTOR	350	2305	164
1	N	1	W	3	SE	NW	NE	566942	SERVICE	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD ROAD	GOODYEAR	AZ	85338	1037	16	10/28/1998	84			0	0	0
1	N	1	W	3	SE	NE	NW	571170	SERVICE	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD	GOODYEAR	AZ	85338	583	16	11/29/1998	82			0	0	0
1	N	2	W	23	NE	NE	NW	588625	SERVICE	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD ROAD	GOODYEAR	AZ	85338	0	0		0			0	0	0
1	N	1	W	4	NE	NW	NE	604506	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	603	12	11/1/1956	0			200	200	0
1	N	1	W	30	NE	NW	NE	606634	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	RT 1 BOX 12	GOODYEAR	AZ	85338	220	20	3/19/1946	78			3200	0	0
1	N	1	W	10	SW	SW	SE	609571	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	192	6		75			350	0	0
1	N	1	W	10	NW	SW	SW	609572	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 LITCHFIELD RD	GOODYEAR	AZ	85338	610	12	1/1/1969	86			350	0	0
1	N	1	W	9	SE	SE	NW	617170	NON-EXEMPT		City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	501	16	7/4/1974	80			700	700	0
1	N	1	W	10	NW	SE	NW	617171	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	385	6		71			650	0	0
1	N	1	W	19	SW	SW	NW	617173	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	425	8	7/28/1975	46			52	52	0
1	N	1	W	3	SE	SE	NW	617174	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	502	16	10/20/1974	91			545	805	16
1	N	2	W	13	SE	NW	SE	618444	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	280	8	8/17/1971	156			80	80	0
1	N	2	W	13	NE	NW	SE	618446	NON-EXEMPT	WATER PRODUCTION	City of Goodyear	119 N LITCHFIELD RD	GOODYEAR	AZ	85338	276	8	12/4/1971	173			120	120	0



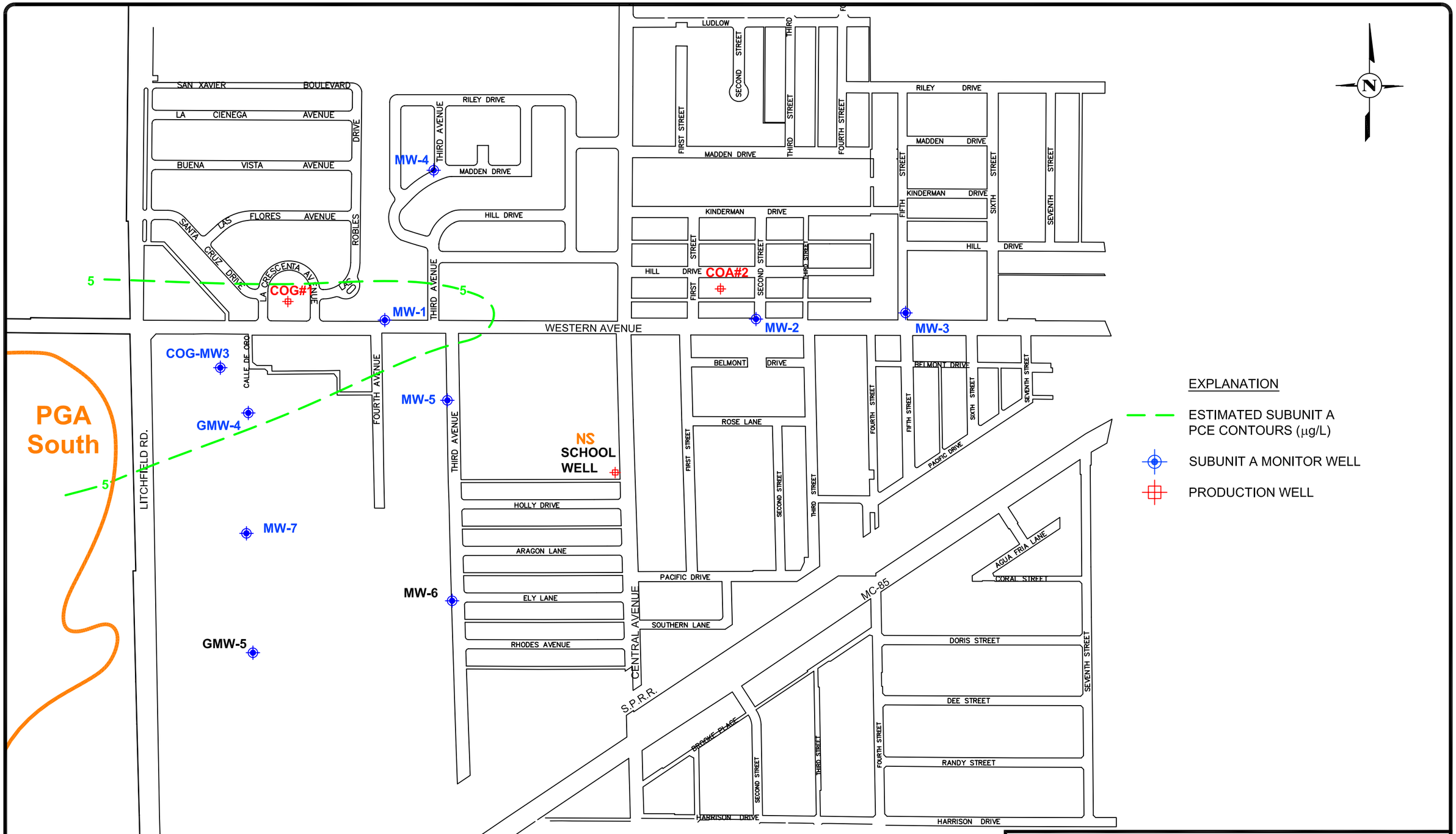
Western Avenue Plume
WQARF Site Area
Avondale and Goodyear, Arizona

GeoTrans, Inc.

March 6, 2006

Fig 1 Vicinity Map.mxd

FIGURE I1



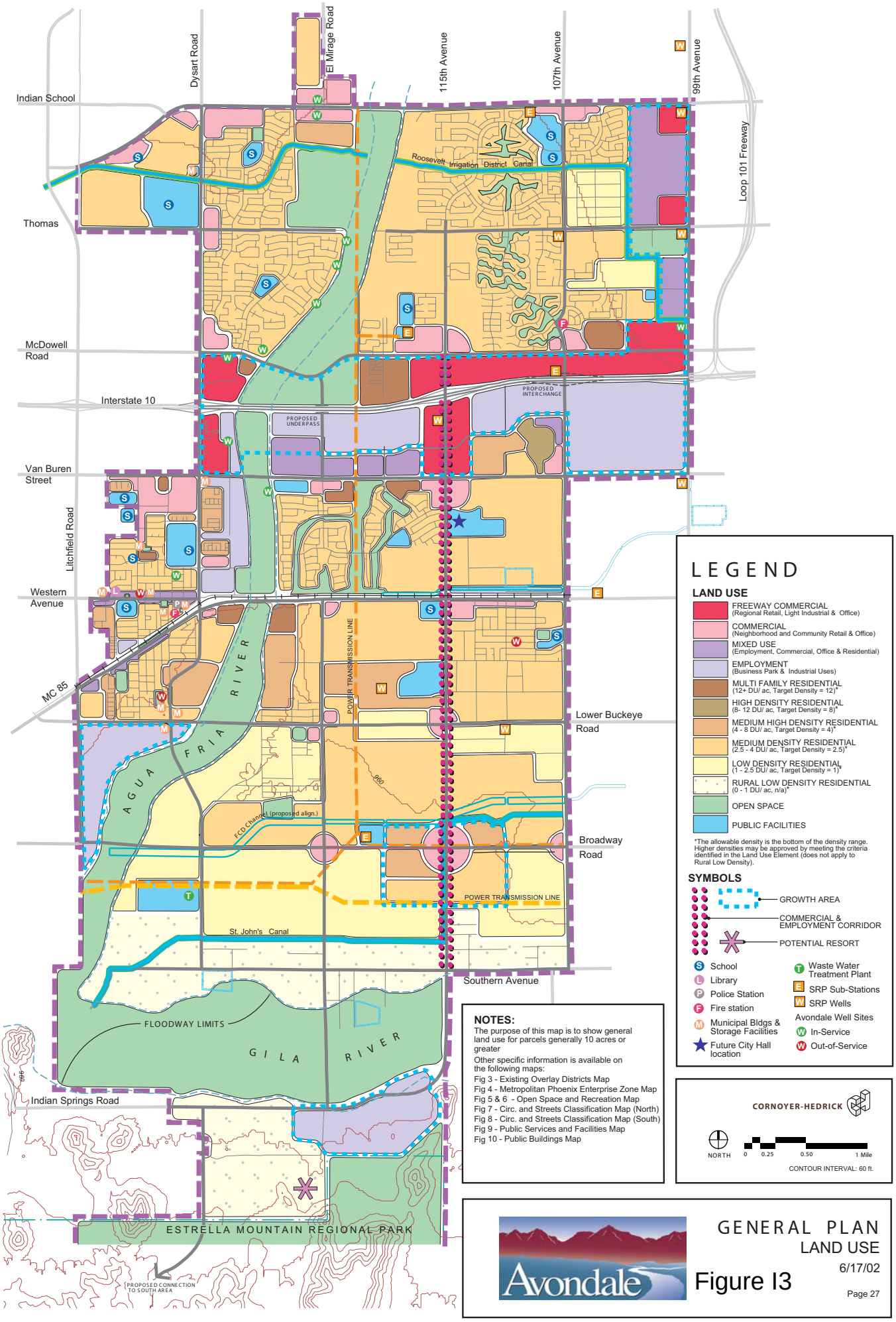
TITLE: SITE PLAN

LOCATION: WESTERN AVENUE PLUME WQARF SITE

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	PRP
DRAFTED	DBS
PROJECT	1303.007.47
DATE	4/11/03

FIGURE 12



GENERAL PLAN
LAND USE

Figure I3

6/17/02

Engineering Mapping Solutions

N

NTS

Avondale

The City Of Avondale Zoning Atlas

August 2002

Figure I4

Engineering Mapping Solutions

River
City Boundary
Zone Boundary

N
NTS

Avondale

The City Of Avondale Zoning Atlas

August 2002

Figure I5

Engineering Mapping Solutions

N

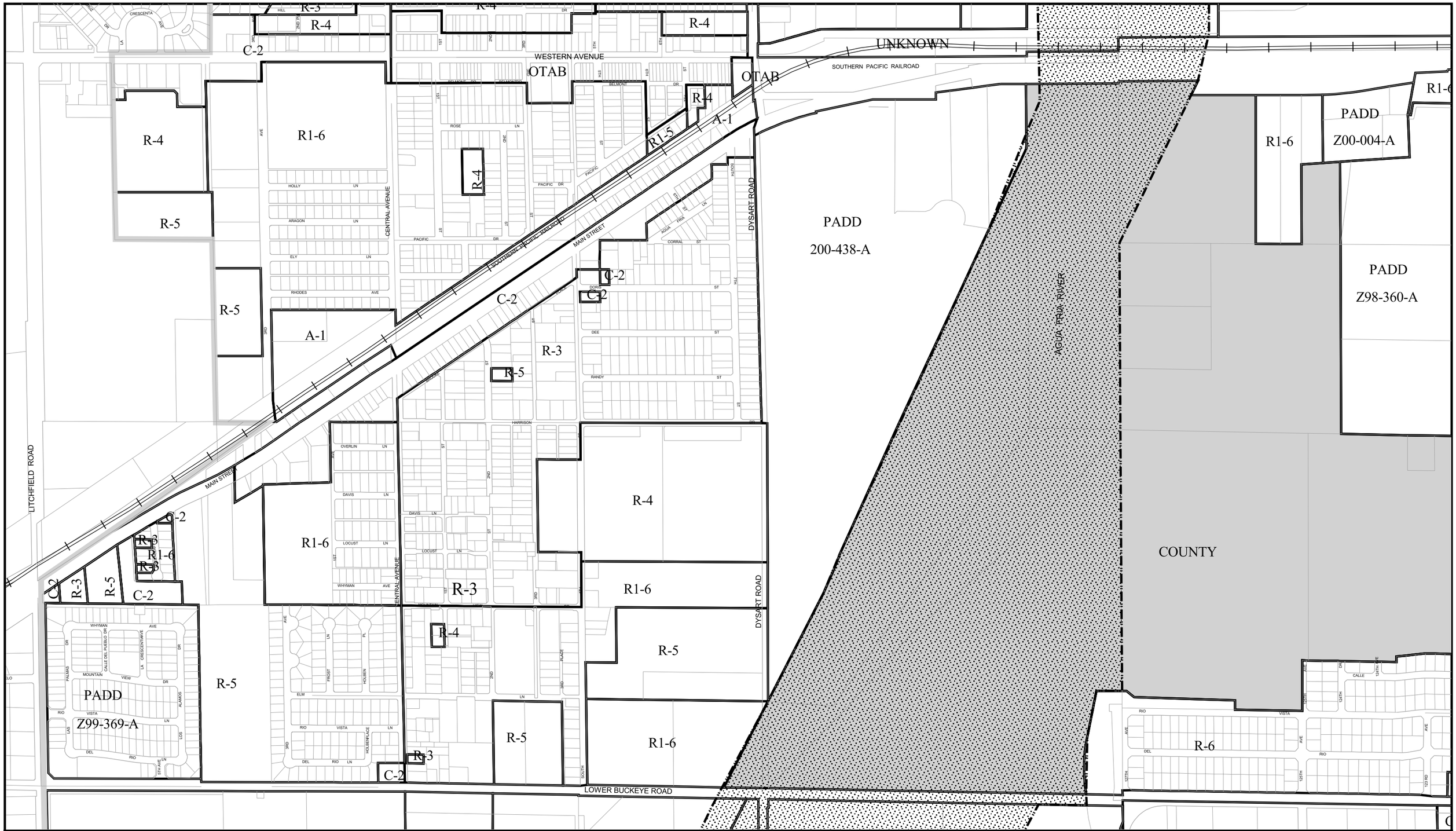
NTS

Avondale

The City Of Avondale
Zoning Atlas

August 2002

Figure I6



Engineering Mapping Solutions

River

City Boundary

Zone Boundary

N

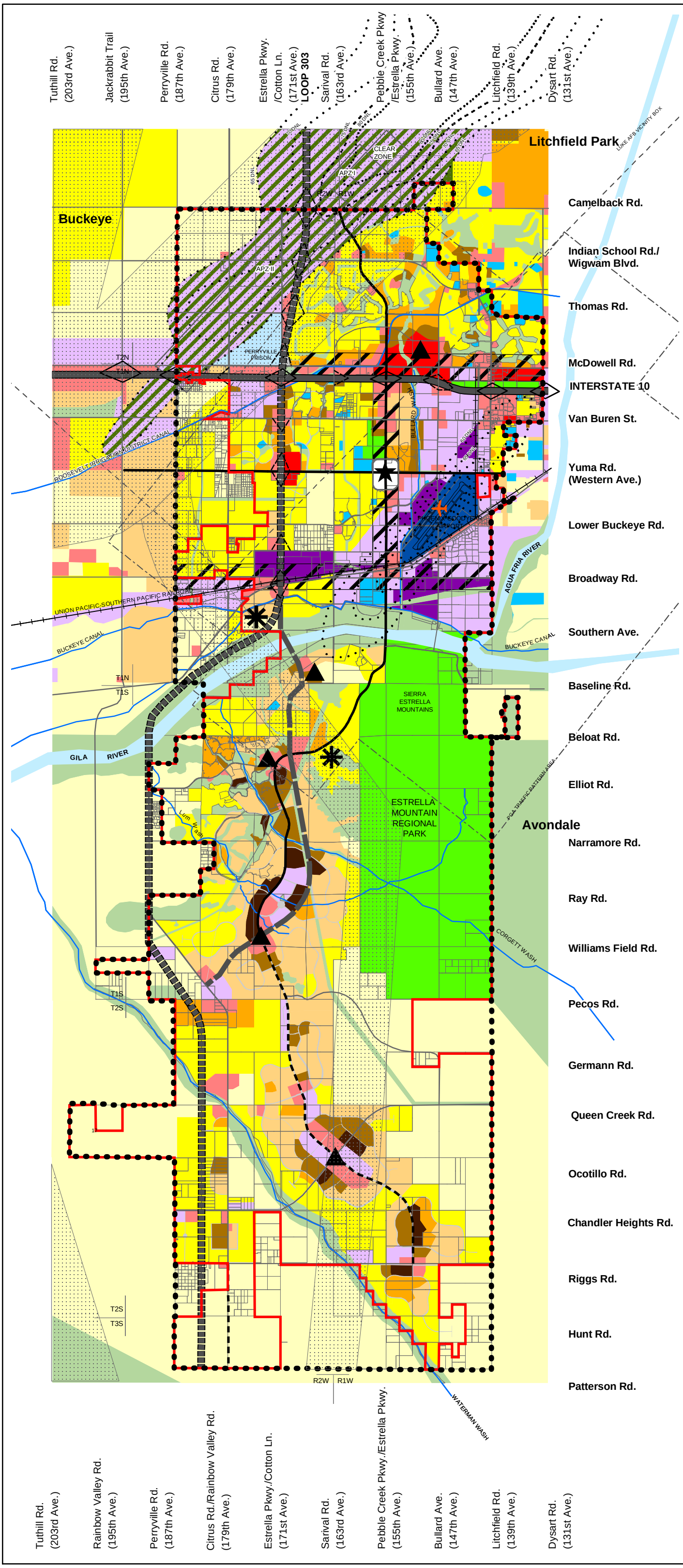
NTS

Avondale

The City Of Avondale Zoning Atlas

August 2002

Figure I7



Proud past, Vibrant future!

GOODYEAR

General Plan Update 2003 - 2013

LAND USE PLAN

- *Agricultural Preserve (AP)* *(1.0 DU/AC)*
- *Rural Residential (RR)* *(0 - 2.0 DU/AC)*
- *Low Density Residential (LDR)* *(2.0 - 4.0 DU/AC)*
- *Low-Medium Density Residential (L-MDR)* *(4.0 - 6.0 DU/AC)*
- *Medium Density Residential (MDR)* *(6.0 - 10.0 DU/AC)*
- *Medium-High Density Residential (M-HDR)* *(10.0 - 20.0 DU/AC)*
- *High Density Residential (HDR)* *(20.0 + DU/AC)*
- *Community Commercial (CC)*
- *Regional Commercial (RC)*
- *City Center (CCTR)*
- *Light Industrial (LI)*
- *General Industrial (GI)*
- *Luke Compatible Land Use Area (LCLUA)*
- *Public/Quasi-Public (PQP)*
- *Prison (PR)*
- *Airport (A)*
- *Parks (P)*
- *Open Space (OS)* *(1.0 DU/AC)*
- *High Intensity Mixed Use Corridor Overlay*
- *Village Center Overlay*
- *Resort Development Overlay*
- *Freeway (Existing)*
- *Freeway (Proposed)*
- *Parkway (Existing)*
- *Parkway (Proposed)*
- *Scenic Arterial (Existing)*
- *Scenic Arterial (Proposed)*
- *Arterial Roads*
- *City Incorporated Area*
- *Planning Area*
- *Canals/Washes*
- *Regional Park*
- *Luke AFB Range Access Routes*
- *Aviation Noise Contours (DNL)*
- *Parcel Boundary*

10 20 40 80 160 320 640 Acres

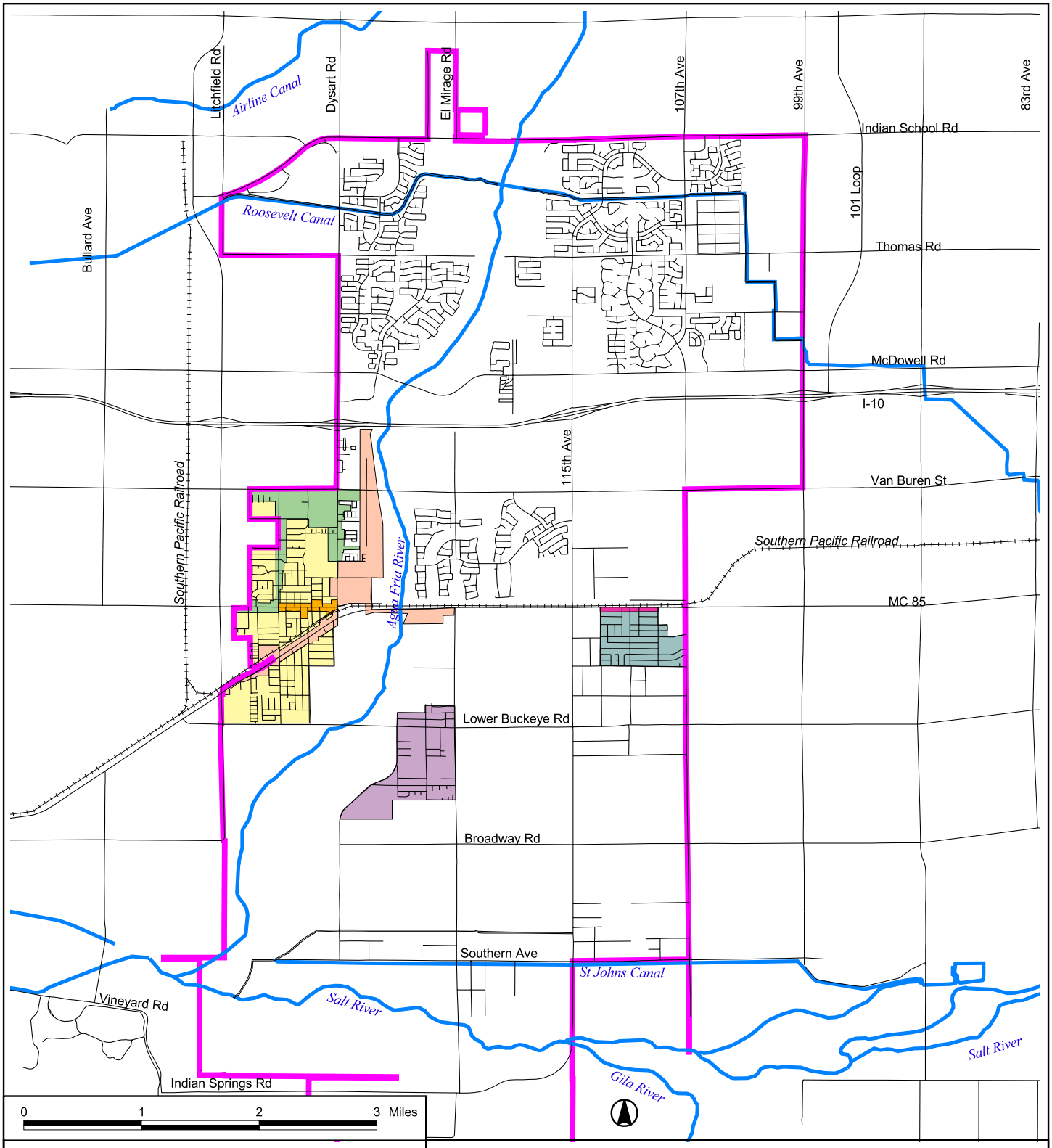
2-3

0 0.5 1 2 3 4 Miles

Figure I8

Source: MAG, July 2002; Luke AFB, April 2003; URS, May 2003

v:/projects/goodyear/gis/project/general plan maps/fig_2-3_landuse_plan.mxd



Avondale General Plan Update

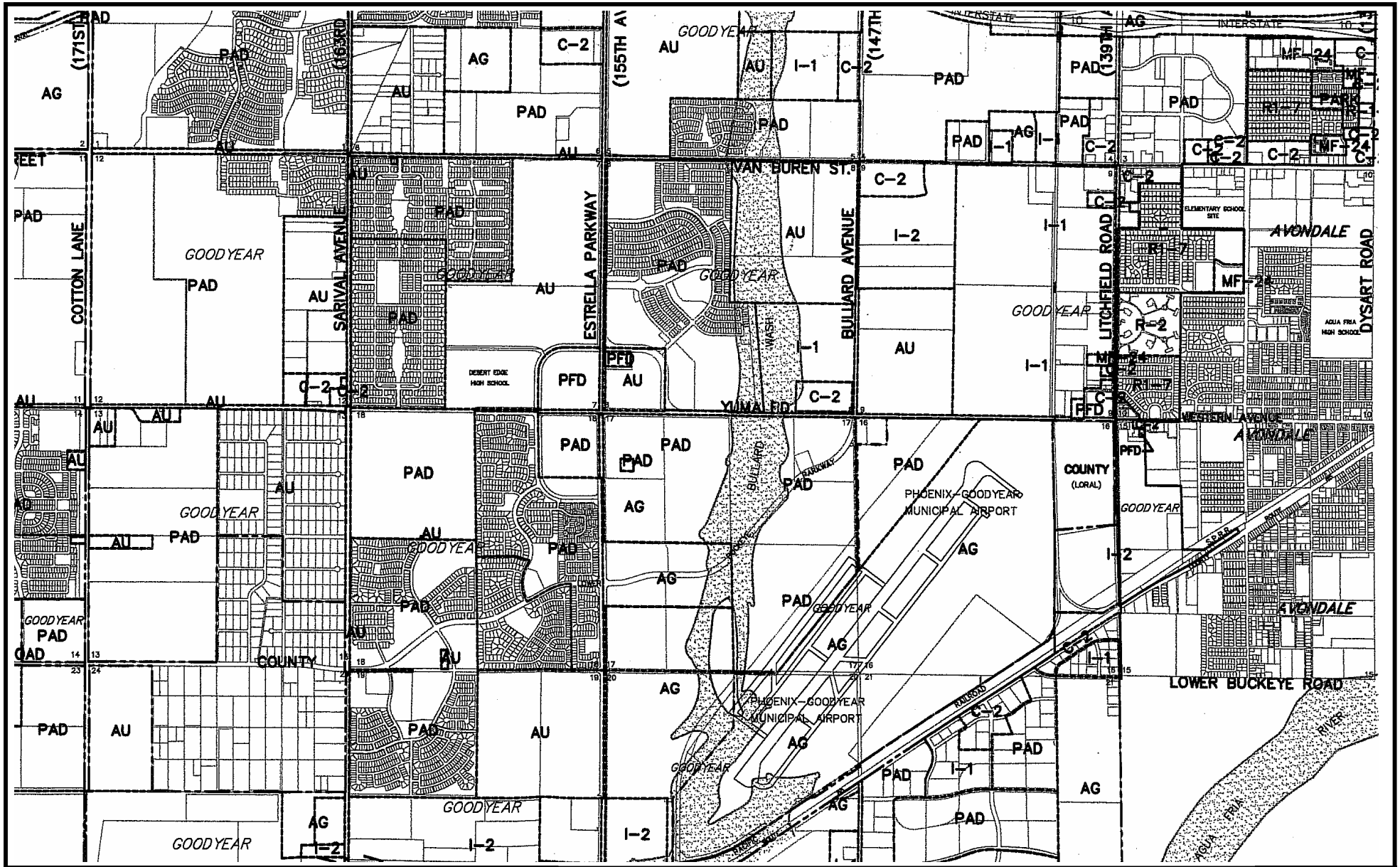
Infill Districts

Figure 19

Infill Districts
- Cashion Multicultural Development District
- Cashion Residential
- Central/South Avondale Residential
- Gateway Avondale
- Historic Light Industrial
- Las Ligas Residential
- Old Town Avondale
- Streets
- Hydrology
- Railroad
- Planning Boundary

Sources:
Maricopa County Department of Transportation
Arizona Department of Transportation
City of Avondale, Arizona

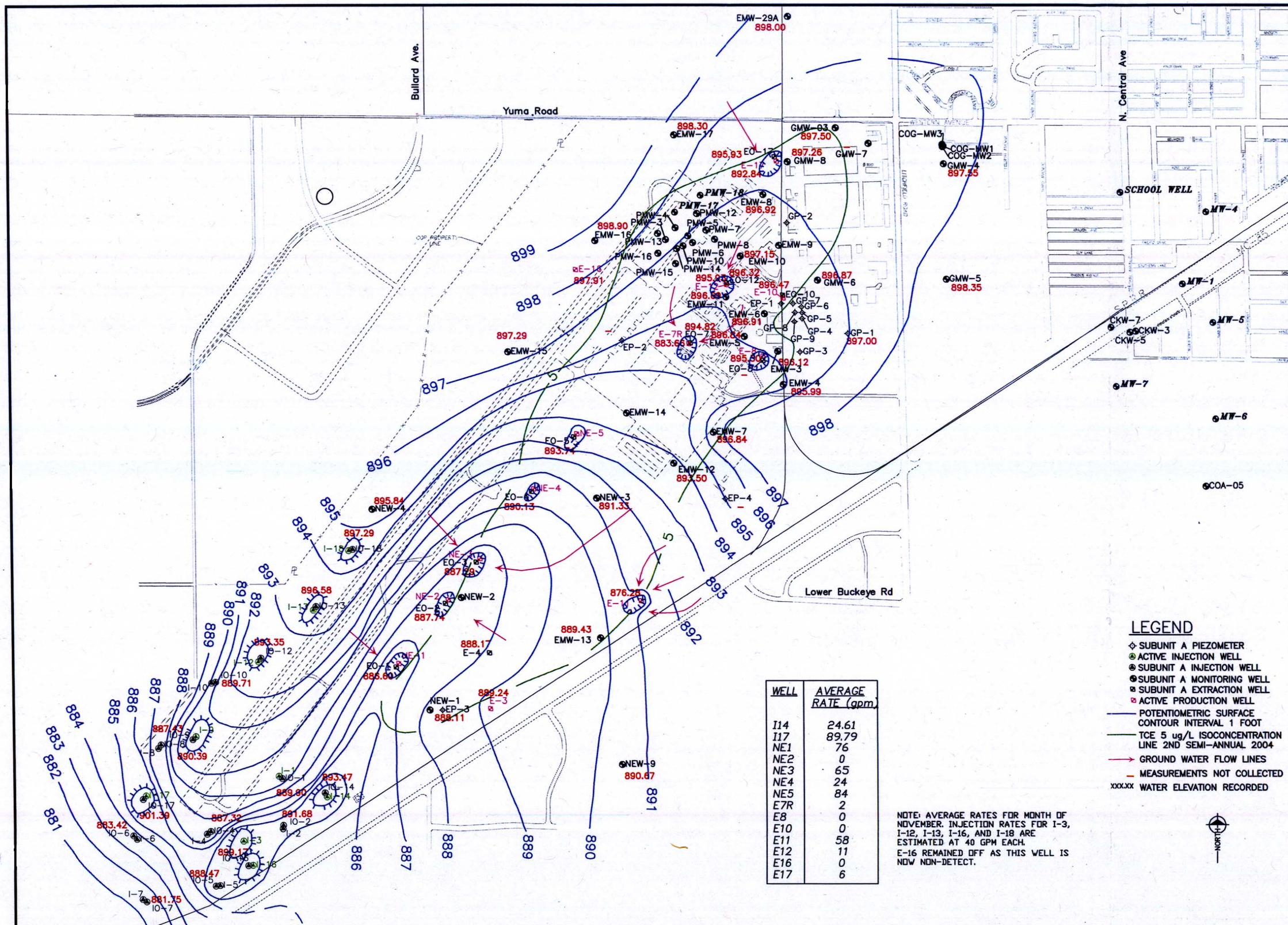
June 17, 2002



GeoTrans, Inc.

City of Goodyear Zoning Map
Western Avenue WQARF Site
Arizona Department of Environmental Quality

FIGURE
I10



WELL	AVERAGE RATE (gpm)
I14	24.61
I17	89.79
NE1	76
NE2	0
NE3	65
NE4	24
NE5	84
E7R	2
E8	0
E10	0
E11	58
E12	11
E16	0
E17	6

NOTE: AVERAGE RATES FOR MONTH OF NOVEMBER. INJECTION RATES FOR I-3, I-12, I-13, I-16, AND I-18 ARE ESTIMATED AT 40 GPM EACH.
E-16 REMAINED OFF AS THIS WELL IS NOW NON-DETECT.

Rev.	Date	Description	Design	Drawn	Check

5110
PHOENIX-GOODYEAR AIRPORT SITE
PHOENEX, ARIZONA

POTENTIOMETRIC MAP
SUBUNIT A
2ND SEMI-ANNUAL
NOVEMBER 1-3, 2004

SHARP
AND ASSOCIATES, INC.
982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660
www.sharpenv.com

File Name
5110_basestpl_suba

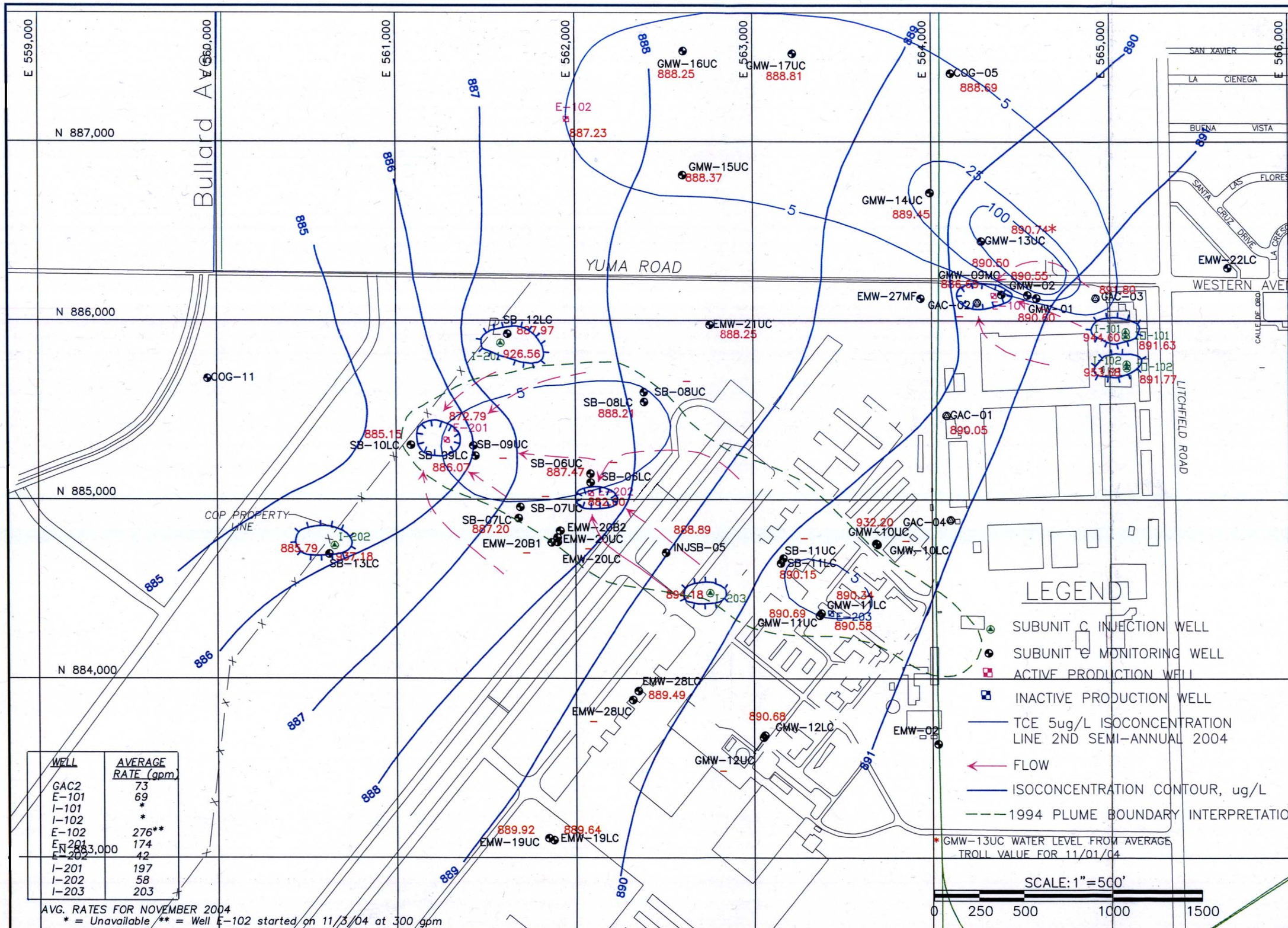
Project No.
2002-01

Sheet 1 of 1

Figure No.
111

Revision

:\5110\2nd SEMI 2004\20041101_subA_pot.dwg, krcarmichael



WELL	AVERAGE RATE (gpm)
GAC2	73
E-101	69
I-101	*
I-102	*
E-102	276**
E-201	174
E-202	42
I-201	197
I-202	58
I-203	203

AVG. RATES FOR NOVEMBER 2004
* = Unavailable ** = Well E-102 started on 11/3/04 at 300 gpm

LEGEND

- SUBUNIT C INJECTION WELL
- SUBUNIT C MONITORING WELL
- ACTIVE PRODUCTION WELL
- INACTIVE PRODUCTION WELL
- TCE 5ug/L ISOCONCENTRATION LINE 2ND SEMI-ANNUAL 2004
- FLOW
- ISOCONCENTRATION CONTOUR, ug/L
- 1994 PLUME BOUNDARY INTERPRETATION

* GMW-13UC WATER LEVEL FROM AVERAGE TROLL VALUE FOR 11/01/04

SCALE: 1"=500'
0 250 500 1000 1500

Rev.	Date	Description	Design Drawn Check

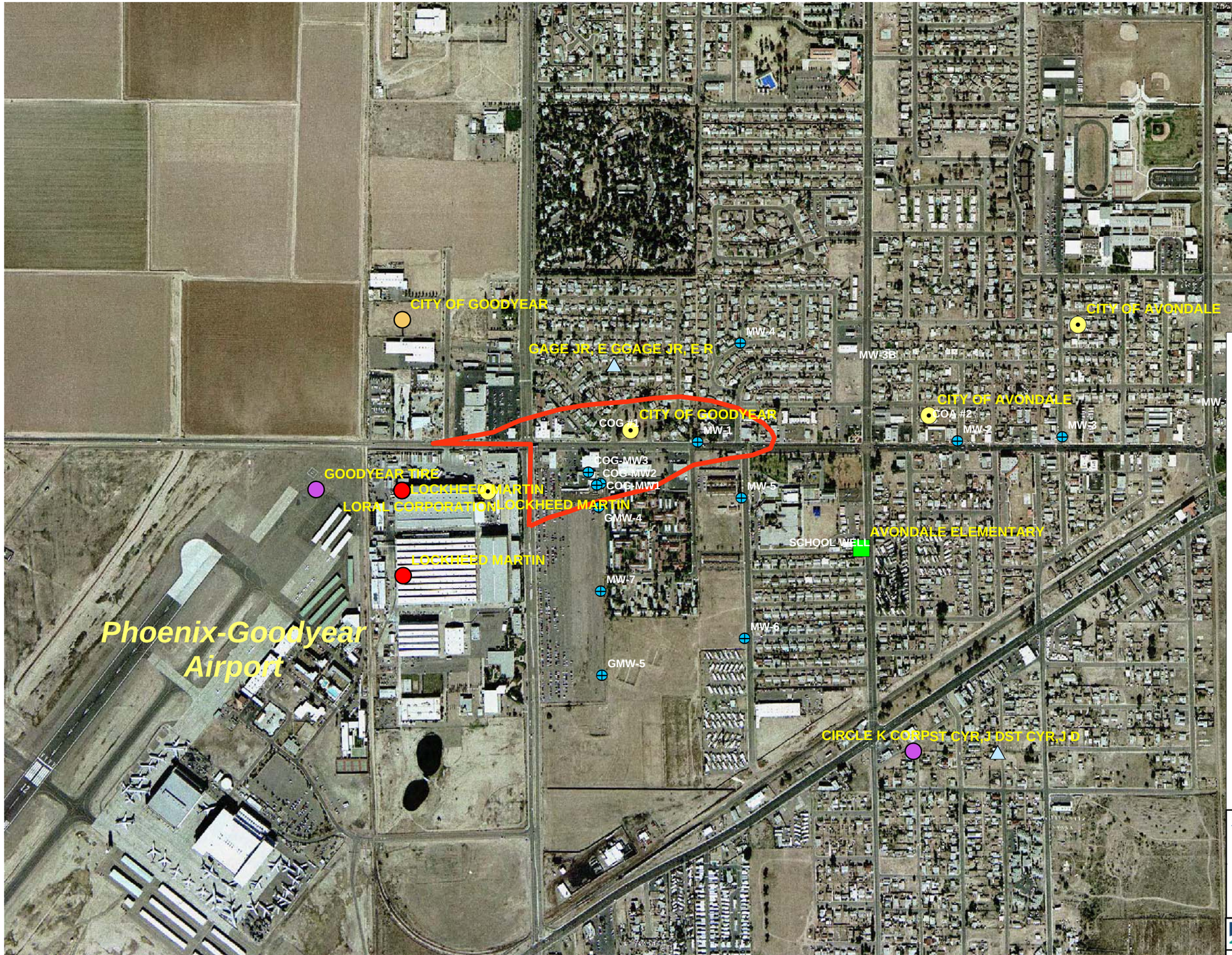
5110
PHONEX-GOODYEAR AIRPORT SITE
PHOENIX, ARIZONA

POTENTIOMETRIC MAP
SUBUNIT C
2ND SEMI-ANNUAL
NOVEMBER 1-3, 2004

SHARP AND ASSOCIATES, INC.
982 Crupper Avenue
Columbus, Ohio 43229
(614) 841-4650
Fax (614) 841-4660
www.sharpenv.com

File Name
CAD FILE DWG NAMED
Project No.
5110
Sheet 1 of 1
Figure No. 112
Revision

:\5110\2nd SEMI 2004\20041101_subC_pot.dwg, krcarmichael



Explanation

ADWR Listed Water Use

- No Listed Use
- Domestic
- Industrial
- Irrigation
- Other Production
- Municipal
- Western Ave WQARF Site

Well Type

- Monitor

N
W E
S

500 250 Feet

Western Avenue Plume WQARF Site

Production Well Locations
Avondale and Goodyear, Arizona

GeoTrans, Inc.

December 18, 2003

FIGURE
I13

Western Ave Production Well Locations.mxd