

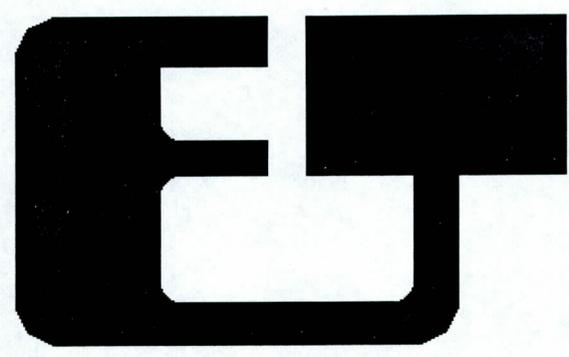


**PHASE II
ENVIRONMENTAL SITE ASSESSMENT
FOR
FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY**

The Environmental Service Company



PDM -
REC'D
2/22/91
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3



EXCELTECH

**PHASE II
ENVIRONMENTAL SITE ASSESSMENT**

FOR

**FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY**

**OLD CROSS CUT CANAL
EXCELTECH PROJECT NO. 5-50063-51
FEBRUARY 1991**

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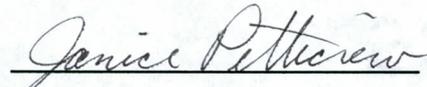
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EXECUTIVE SUMMARY

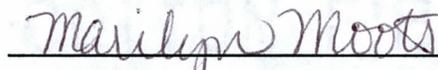
The Flood Control District of Maricopa County (FCDMC), in participation with the Salt River Project (SRP), is renovating and remediating the Old Cross Cut Canal located along 48th Street between Indian School Road and McDowell Road in Phoenix, Arizona (hereafter Property). FCDMC has retained Exceltech, Inc., (ET) to perform a Phase II Environmental Site Investigation to evaluate the potential environmental liability associated with the Property.

On January 8, 1991, Exceltech, Inc., (ET) performed a Phase II Environmental Site Investigation of the Old Cross Cut Canal for the Flood Control District of Maricopa County. The investigation consisted of sampling the near surface stained soil identified at the outlet of a drainage pipe that originates from the service bay area of the Safeguard Security Company, and discharges into the canal. A sample of the stained soil and a background sample were collected from two locations on the Property. The samples were collected to determine if contamination to the Property from off-site sources had occurred. The samples were analyzed for halogenated volatile organics and aromatic volatile organics (solvent scan); polychlorinated biphenyls (PCBs); total petroleum hydrocarbons (TPH); and the Toxicity Characteristic Leaching Procedure (TCLP) metals. The analytical results identified total xylenes and total petroleum hydrocarbons in the sample of stained soil from the pipe discharge at levels below the Arizona Department of Environmental Quality (ADEQ) clean up levels for soil. Based on the results of the assessment, ET considers the environmental liability associated with the Property to be low.

Drafted By:


Janice Petticrew
Chemist

Reviewed By:


Marilyn Moots
Manager of Assessments,
Compliance, and Training

1.0 INTRODUCTION AND PURPOSE

The Flood Control District of Maricopa County (FCDMC), in participation with the Salt River Project (SRP), is renovating and remediating the Old Cross Cut Canal located along 48th Street between Indian School Road and McDowell Road in Phoenix, Arizona (hereafter Property). FCDMC has retained Exceltech, Inc., (ET) to perform a Phase II Environmental Site Investigation to evaluate the potential environmental liability associated with the Property.

The Property intersects portions of Sections 19, 20, 30, and 31 in Township 2 North, Range 4 East, of the Gila and Salt River, Baseline and Meridian, Maricopa County, within the city limits of Phoenix, Arizona. ET performed a Phase II Environmental Site Investigation, which included sampling an area of stained soil on the Property on January 8, 1991. The investigation consisted of sampling the near surface soil in the canal located near the Safeguard Security Company. The sampling was to determine the environmental liability from possible contamination that may have resulted due to drainage from a PVC drain pipe that discharges into the Old Cross Cut Canal. The PVC pipe originates in the service bay area of the Safeguard Security Company. The Property and sample locations are identified in Appendices A and B; Site Location Map and Site Specific Map. Copies of the analytical results and chain-of-custody form are included in Appendix C. Appendix D contains representative photographs of the site and sample locations. This report documents the findings of the investigation.

2.0 SITE DESCRIPTION AND SCOPE OF WORK

The Property is an undeveloped earthen canal used for the collection of storm water run-off and was formerly used to divert water from the Arizona Canal. The Property is composed of approximately 37 acres and is approximately 60 feet wide. The boundaries of the Property extend from the Arizona Canal, north of Indian School Road, south to McDowell Road and parallels 48th Street.

2.1 SAMPLE LOCATION DESCRIPTION

The area of stained soil sampled was located at the north end of the Property, just south of Indian School Road, on the east side of the canal. A 4 inch PVC pipe protrudes from the upper east side of the canal bank. The discharge from the pipe drains down into the bottom of the canal. The pipe originates from the Safeguard Security Company service bay area, located directly east of the Property. The soil directly beneath the pipe outlet shows evidence of staining from a black substance with an oily sheen and that has an odor characteristic of petroleum hydrocarbons, such as motor oil.

2.2 SCOPE OF WORK

The objective of the sampling process was to determine the presence, if any, of near surface soil contamination associated with drainage from the Safeguard Security Company onto the Property. Two near surface soil samples were collected. One soil sample was collected in the area of the heaviest staining near the pipe outlet. A second soil sample was collected from an area on the upper bank of the canal that was used as a background sample. The samples were recorded on a chain-of-custody form and in a field logbook. Both samples were then shipped to an United States Environmental Protection Agency (EPA) approved laboratory for analysis.

3.0 PHYSICAL INVESTIGATION

3.1 SAMPLING STRATEGY

Two near surface soil samples were collected. The first sample, labeled as Sample No. 5-50063-51-1, was collected directly beneath the pipe outlet in the area of the heaviest staining. The second sample, labeled as Sample No. 5-50063-51-2, was collected from the upper east side of the canal bank above the area of staining. Sample No. 5-50063-51-2 location is 25 feet north of the second power pole that is south of Indian School Road (3 feet west of the wire support for the power pole). This second sample was the background soil sample. Refer to the Site Specific Map in Appendix B for

the sample locations; designated on the map as Sample No. 1, for Sample No. 5-50063-51-1, and as Sample No. 2, for Sample No. 5-50063-51-2.

Using a decontaminated, stainless steel trowel, one near surface soil sample was collected from the first sample location, directly beneath the pipe outlet. The sample was placed in a laboratory cleaned 8-ounce glass jar. The second soil sample was collected using the same type of trowel and sample jar from the second sample location on the upper east bank of the canal. Each sample container was sealed with a Teflon-lined plastic lid, logged onto a chain-of-custody form, and placed into a refrigerated cooler maintained at approximately 4-degrees Celsius for transport. The samples were then stored in a refrigerated sample storage area at the ET offices to await transport to the laboratory for analysis.

4.0 ANALYTICAL RESULTS

A total of two near surface soil samples were collected from two locations on the north end of the Property. The samples were analyzed for halogenated volatile organics and aromatic volatile organics (solvent scan); polychlorinated biphenyls (PCBs); total petroleum hydrocarbons (TPH); and the Toxicity Characteristic Leaching Procedure (TCLP) metals; arsenic, barium, cadmium, chromium, mercury, selenium, silver, and lead. The analyses, with the exception of TPH, were performed in accordance with protocols described in US EPA SW-846, Test Methods for Evaluating Solid Waste, 3rd Edition. TPH was analyzed according to protocols described by the State of California Department of Health Services. The samples were extracted for the Toxicity Characteristic Leaching Procedure (TCLP), according to Method 1311. The analytical methodologies used and their reporting limits are listed below:

Total Petroleum Hydrocarbons (TPH)-State of California Department of Health Services protocols for TPH; reporting limit of 10.0 milligrams per kilogram (mg/kg=parts per million)=ppm).

Solvent Scan (BTEX) - Methods 8010, Halogenated Volatile Organics, and 8020, Aromatic Volatile Organics; reporting limits range from 0.0002 to 0.002 mg/kg (ppm).

Polychlorinated Biphenyls Screen-EPA Method 8080, Organochlorine Pesticides and PCBs; reporting limits range from 1.0 to 3.0 mg/kg (ppm).

Toxicity Characteristic Leaching Procedure Metals (TCLP Metals): Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver - EPA Method 1311, Extraction; EPA Method 7060, Arsenic; EPA Method 7080, Barium; EPA Method 7130, Cadmium; EPA Method 7190, Chromium; EPA Method 7420, Lead; EPA Method 7470, Mercury; EPA Method 7744, Selenium; Epa Method 7760, Silver.

The reporting limits range from 0.02 to 0.5 milligrams per liter (mg/L = ppm).

A brief listing of the results are presented below. The results indicated that total petroleum hydrocarbons were identified in Sample No. 5-50063-51-1, at a level below the Arizona Department of Environmental Quality (ADEQ) clean up level of 100 mg/kg (ppm) in the soil. Total xylenes were also identified in Sample No. 5-50063-51-1 at a level well below the ADEQ clean up level of 44 mg/kg (ppm). There were no TCLP Metals detected in either sample.

Sample No. 5-50063-51-1:

Method 8020					
Analyte	Result	Units	Analyte	Result	Units
Benzene	<	mg/kg	Total Xylenes	0.0016	mg/kg
Toluene	<	mg/kg	1,4-Dichlorobenzene	<	mg/kg
Ethylbenzene	<	mg/kg	1,3-Dichlorobenzene	<	mg/kg
Chlorobenzene	<	mg/kg	1,2-Dichlorobenzene	<	mg/kg

Total Petroleum Hydrocarbons

Analyte	Result	Units
Total Petroleum Hydrocarbons	65	mg/kg

Sample No. 5-50063-51-2:

Method 8020

Analyte	Result	Units	Analyte	Result	Units
Benzene	<	mg/kg	Total Xylenes	<	mg/kg
Toluene	<	mg/kg	1,4-Dichlorobenzene	<	mg/kg
Ethylbenzene	<	mg/kg	1,3-Dichlorobenzene	<	mg/kg
Chlorobenzene	<	mg/kg	1,2-Dichlorobenzene	<	mg/kg

Total Petroleum Hydrocarbons

Analyte	Result	Units
Total Petroleum Hydrocarbons	<	mg/kg

(< = analyte not detected at or above the listed reporting limit.)

All analytes detected were below the EPA and ADEQ established clean up levels.

5.0 CONCLUSIONS

On January 8, 1991, Exceltech, Inc., (ET) performed a Phase II Environmental Site Investigation of the Old Cross Cut Canal for the Flood Control District of Maricopa County. The area under investigation, the Old Cross Cut Canal, is located along 48th Street between Indian School Road and McDowell Road in Phoenix, Arizona. The investigation consisted of sampling the near surface stained soil identified at the outlet of a drainage pipe that originates from the service bay area of the Safeguard Security Company, and discharges into the canal.

The Property is an undeveloped earthen canal used for the collection of storm water run-off and was formerly used to divert water from the Arizona Canal. The Property is approximately 37 acres in size with a width of 60 feet. One area of surface stained soil was identified by Exceltech on the Property during the Phase I Environmental Site

Assessment conducted in December, 1990. A sample of the stained soil and a background sample were collected from two locations on the Property. The samples were collected to determine if contamination to the Property from off-site sources had occurred. The first sample was located directly beneath the pipe outlet in the area of the heaviest surface staining and was labeled as Sample No. 5-50063-51-1. The second sample was located on the upper east side of the canal bank. The second sample was labeled as Sample No. 5-50063-51-2. The second sample was the background soil sample. The samples were analyzed for halogenated volatile organics and aromatic volatile organics (solvent scan); polychlorinated biphenyls (PCBs); total petroleum hydrocarbons (TPH); and the Toxicity Characteristic Leaching Procedure (TCLP) metals. The results identified 0.0016 mg/kg (ppm) of total xylenes and 65 mg/kg (ppm) of total petroleum hydrocarbons in Sample No. 5-50063-51-1. These levels are below the established Arizona Department of Environmental Quality (ADEQ) clean up levels of 44 mg/kg (ppm) for total xylenes and 100 mg/kg (ppm) of total petroleum hydrocarbons in soils. In addition, the analyses did not detect any TCLP metals in the samples. These results indicate that the environmental liability associated with the Property in the area sampled is low. Therefore, there are no further recommendations for additional investigations or remediations of the Property at this time.

Based on the results of the assessment, ET considers the environmental liability associated with the Property to be low.

6.0 LIMITATIONS

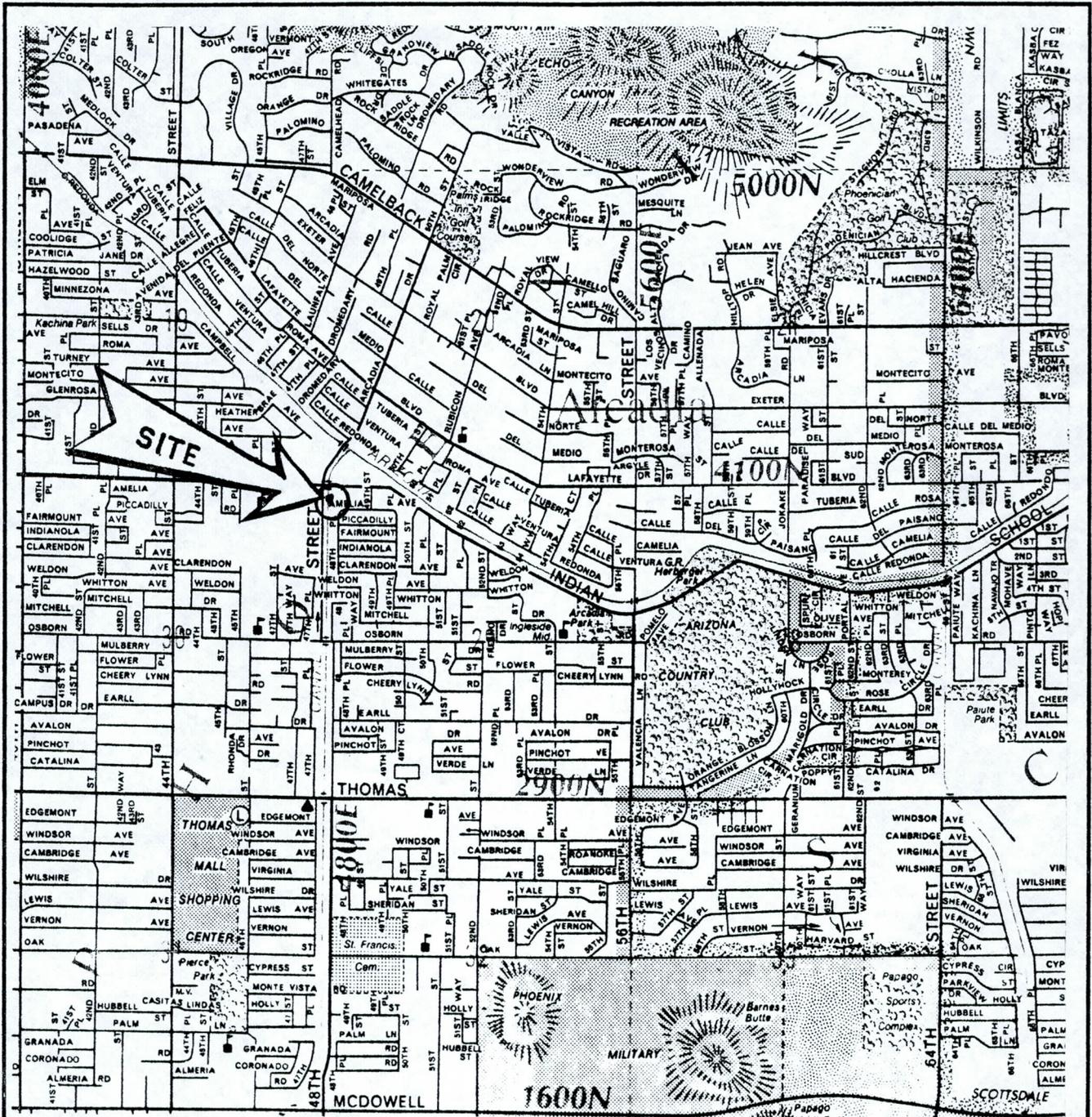
Environmental regulations on a Federal, state or local level can vary significantly over a period of time. Similarly, Property conditions will inevitably change over time. Consequently, the conclusions presented in the environmental assessment are strictly applicable to the status of the environmental regulations and the Property conditions existing at the time that Exceltech, Inc., performs the assessment. Exceltech believes the data obtained and the inferences made in the course of this investigation are reasonably representative of the Property.

Exceltech, Inc., makes no warranty, expressed or implied, except that these services have been performed in accordance with generally accepted existing environmental engineering, health, and safety principles and applicable regulations at the time and location of the proposed study.

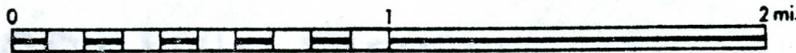
APPENDIX A

SITE LOCATION MAP

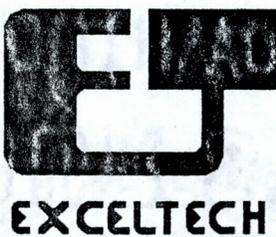
FOUR STAR BRAND
SOUTHWORTH CO. U.S.A.
25% COTTON FIBER



ATLAS SCALE IN MILES



Site Location



SITE LOCATION MAP

OLD CROSS CUT CANAL

INDIAN SCHOOL ROAD &
48TH STREET

PHOENIX, ARIZONA

REVIEWED BY:

JMP

APPROVED BY:

mm

JOB #:
5-50063-51

DRAWN BY:
JMP

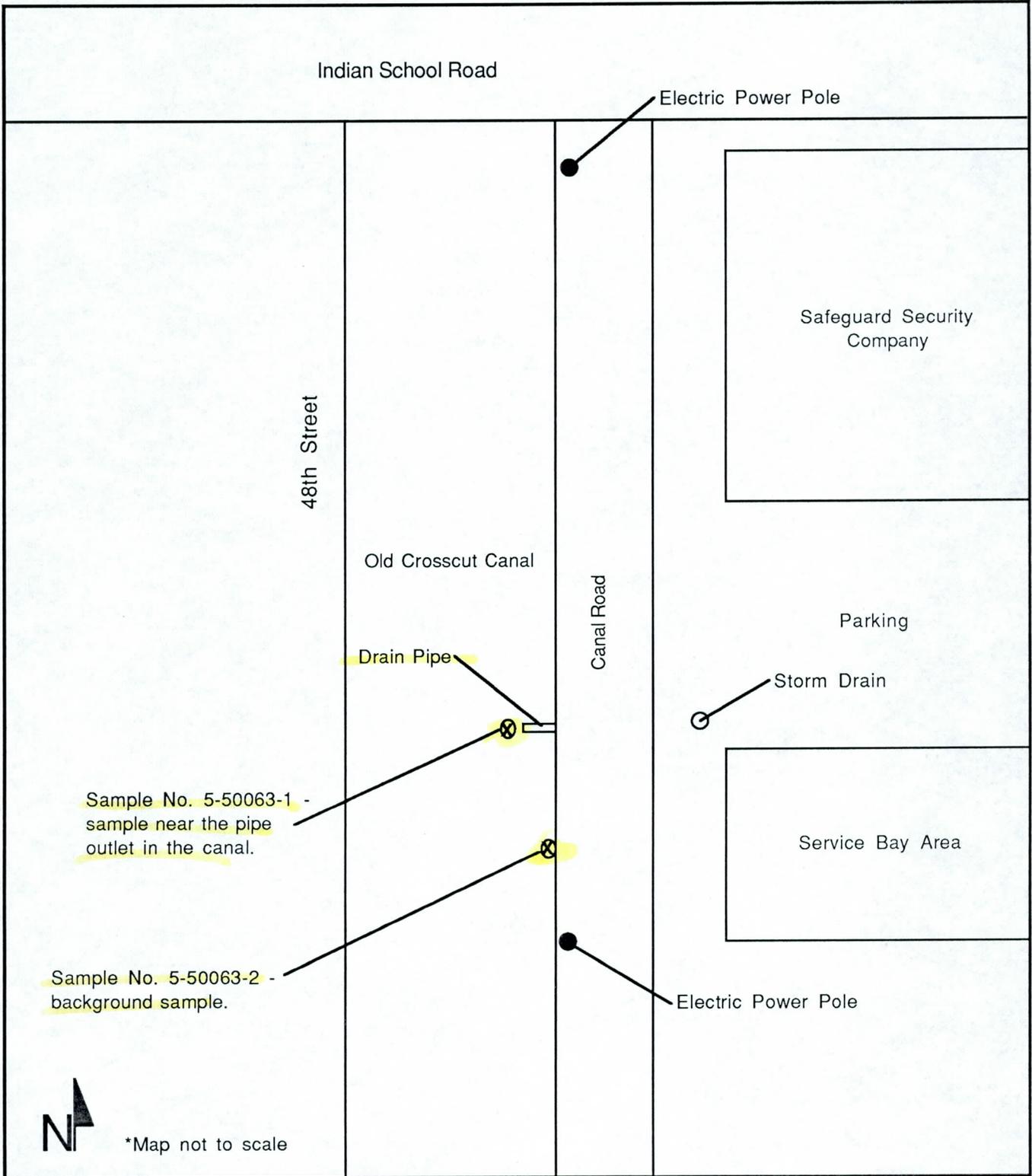
DATE:
10 JAN 91

DRAWING #
50063-A1

APPENDIX B

SITE SPECIFIC MAP

FOUR STAR BOND
SOUTHWORTH CO. U.S.A.
20% COTTON FIBER



SITE SPECIFIC MAP

PHASE II-OLD CROSS CUT CANAL

INDIAN SCHOOL ROAD &
48TH STREET

PHOENIX, ARIZONA

REVIEWED BY:

JMP

APPROVED BY:

MM

JOB #:
5-50063-51

DRAWN BY:
JMP

DATE:
10 JAN 91

DRAWING #
50063-B1

APPENDIX C

**RESULTS TABLES AND COPIES
OF ANALYTICAL RESULTS AND
CHAIN-OF-CUSTODY FORMS**

TABLE 2 - SOIL ANALYSES RESULTS (CONT.)

POLYCHLORINATED BIPHENYLS:	SAMPLE 1- SOIL mg/Kg	SAMPLE 2- SOIL mg/Kg	REPORTING LIMIT mg/Kg	MCLs mg/Kg
ANALYTE				
PCB-1016	<	<	3	10
PCB-1221	<	<	3	10
PCB-1232	<	<	2	10
PCB-1242	<	<	1	10
PCB-1248	<	<	1	10
PCB-1254	<	<	1	10
PCB-1260	<	<	1	10
TOTAL PETROLEUM HYDROCARBONS	65	<	10	100
METALS:				
ANALYTE				
Arsenic	<	<	0.02	5
Barium	<	<	5	100
Cadmium	<	<	0.1	1
Chromium	<	<	0.1	5
Lead	<	<	0.5	5
Mercury	<	<	0.02	0.2
Selenium	<	<	0.02	1
Silver	<	<	0.1	5
*No MCLs have been established for these compounds				
< = Compound not detected at or above the listed reporting limit.				
MCLs=Maximum Contaminant Levels				

FIBROUS CELLULOSE
 SOUTH PAVILION
 25% DOTTEN FIBER



VISTA
Laboratories Inc.

3830 High Court
Wheat Ridge, CO 80033
(303) 467-0630

Chain of Custody Record Analytical Services Request

(enclose with each shipping container!)

Client: Exceltech Contact: Marilyn Moots Address: 1520 W. Mineral Rd.
Program/Site: 50063 Phone: (602) 345-6640 Tempe, AZ 85283

VISTA Project Number
913096
5-50063-51

Collected by: Bill Newman
Bill Newman

These fields may be used
for field test results

Sample Identification	Date Sampled	Time	Sample Type	TPH by GDHS with IA	8010/8020	TCLP Extraction	TCLP Metals	PCB Screen											Total	
5-50063-51-1	1/8/91	9:25 am	Soil	X	X	X	X	X											1	001
5-50063-51-2	1/8/91	9:30 am	Soil	X	X	X	X	X											1	002
<i>Bill Newman</i>																				

Condition on Receipt/Temp: _____

Comments: P.O. # 21260 Please include P.O. No. on all invoices.

Relinquished by: Bill Newman Representing: Exceltech To Whom: Janice Petticrew ^{Sanice} Petticrew Date/Time: 1/8/91 10:30 am
Relinquished by: Janice Petticrew Representing: Exceltech To Whom: Warren ABX Date/Time: 1/8/91 1045
Relinquished by: _____ Representing: _____ Rec. at VISTA By: Bill Newman Date/Time: 1-9-91 11:45

WHITE COPY : Accompanies Samples

CANARY COPY : Lab

PINK COPY : Sampler



VISTA
Laboratories Inc.

FEB - 4 1991

3830 High Court
Wheat Ridge, CO 80033
(303) 467-0630

February 1, 1991

Ms. Marilyn Moots
Exceltech, Inc.
1520 West Mineral Road
Suite A-1
Tempe, Arizona 85283

Dear Ms. Moots:

Enclosed are the results from the analyses of two soil samples, received on January 9, 1991, for the determination of TCLP metals, halogenated volatile organics, aromatic volatile organics, total petroleum hydrocarbons and polychlorinated biphenyls. Please feel free to call if you have any questions regarding these analyses.

Sincerely,

Michael G. Brooks
President

Reviewed by,

Corinne L. Bogert
Technical Director

MGB/CLB/rt
Enclosures

VISTA Project # 913096

Reissued - February 1, 1991



Sample Description

<u>Laboratory ID</u>	<u>Client ID</u>	<u>Type</u>	<u>Date Received</u>
913096-001	5-50063-51-1	Soil	01/09/91
913096-002	5-50063-51-2	Soil	01/09/91



Results and Discussion

VISTA Project # 913096

Two soil samples were received on January 9, 1991, for the determination of TCLP metals, halogenated volatile organics, aromatic volatile organics, total petroleum hydrocarbons and polychlorinated biphenyls. The samples were analyzed according to the protocols described in USEPA SW-846, Test Methods for Evaluating Solid Waste, 3rd Ed. Total petroleum hydrocarbons were analyzed according to protocols described by the State of California Department of Health Services. The samples were extracted for the Toxicity Characteristic Leaching Procedure (TCLP) according to Method 1311.

Quality control (QC) results are reported for another client's samples which were prepared and analyzed with these samples. Sample information for the QC samples is withheld to maintain client confidentiality.

TCLP Metals

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-1
VISTA Sample ID: 913096-001
Date Sampled : 01/08/91

Sample Type: TCLP Leachate
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Method</u>
Arsenic	<	0.02	mg/L	7060
Barium	<	5	mg/L	6010
Cadmium	<	0.1	mg/L	6010
Chromium	<	0.1	mg/L	6010
Lead	<	0.5	mg/L	6010
Mercury	<	0.02	mg/L	7470
Selenium	<	0.02	mg/L	7740
Silver	<	0.1	mg/L	6010

< = Analyte not detected at or above the listed reporting limit.

Halogenated Volatile Organics
EPA Method 8010

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-1
VISTA Sample ID: 913096-001
Date Sampled : 01/08/91
Date Analyzed: 01/17/91

Sample Type: Soil
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Chloromethane	<	0.2	ug/kg
Bromomethane	<	0.2	ug/kg
Dichlorodifluoromethane	<	0.2	ug/kg
Vinyl Chloride	<	0.2	ug/kg
Chloroethane	<	0.2	ug/kg
Methylene Chloride	<	2.0	ug/kg
Trichlorofluoromethane	<	0.2	ug/kg
1,1-Dichloroethene	<	0.2	ug/kg
1,1-Dichloroethane	<	0.2	ug/kg
Trans-1,2-Dichloroethene	<	0.2	ug/kg
Chloroform	<	0.2	ug/kg
1,2-Dichloroethane	<	0.2	ug/kg
1,1,1-Trichloroethane	<	0.2	ug/kg
Carbon Tetrachloride	<	0.2	ug/kg
Bromodichloromethane	<	0.2	ug/kg
1,2-Dichloropropane	<	0.2	ug/kg
Trans-1,3-Dichloropropene	<	0.2	ug/kg
Trichloroethene	<	0.2	ug/kg
1,1,2-Trichloroethane	<	0.2	ug/kg
cis-1,3-Dichloropropene	<	0.2	ug/kg
Dibromochloromethane	<	0.2	ug/kg
2-Chloroethyl Vinyl Ether	<	0.2	ug/kg
Bromoform	<	0.2	ug/kg
1,1,2,2-Tetrachloroethane	<	0.2	ug/kg
Tetrachloroethene	<	0.2	ug/kg
Chlorobenzene	<	0.2	ug/kg
1,4-Dichlorobenzene	<	1.0	ug/kg
1,3-Dichlorobenzene	<	1.0	ug/kg
1,2-Dichlorobenzene	<	1.0	ug/kg

< = Compound not detected at or above the listed reporting limit.

Aromatic Volatile Organics
EPA Method 8020

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-1
VISTA Sample ID: 913096-001
Date Sampled : 01/08/91
Date Analyzed: 01/17/91

Sample Type: Soil
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Benzene	<	0.5	ug/kg
Toluene	<	0.5	ug/kg
Ethylbenzene	<	0.5	ug/kg
Chlorobenzene	<	0.5	ug/kg
Total Xylenes	1.6	1.0	ug/kg
1,4-Dichlorobenzene	<	1.0	ug/kg
1,3-Dichlorobenzene	<	1.0	ug/kg
1,2-Dichlorobenzene	<	1.0	ug/kg
<u>Surrogate Recoveries</u>			<u>QC Limits</u>
1-Chloro-2-fluorobenzene	100	%	50-125

< = Compound not detected at or above the listed reporting limit.

Total Petroleum Hydrocarbons
GC/FID - CDHS Method

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-1
VISTA Sample ID: 913096-001
Date Sampled : 01/08/91
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: 01/09/91
Date Analyzed: 01/28/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Total Petroleum Hydrocarbons	65	10	mg/kg

< = Compound not detected at or above the listed reporting limit.

Polychlorinated Biphenyls
EPA Method 8080

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-1
VISTA Sample ID: 913096-001
Date Sampled : 01/08/91
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: 01/09/91
Date Analyzed: 01/15/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
PCB-1016	<	3	mg/kg
PCB-1221	<	3	mg/kg
PCB-1232	<	2	mg/kg
PCB-1242	<	1	mg/kg
PCB-1248	<	1	mg/kg
PCB-1254	<	1	mg/kg
PCB-1260	<	1	mg/kg

< = Compound not detected at or above the listed reporting limit.

TCLP Metals

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-2
VISTA Sample ID: 913096-002
Date Sampled : 01/08/91

Sample Type: TCLP Leachate
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Method</u>
Arsenic	<	0.02	mg/L	7060
Barium	<	5	mg/L	6010
Cadmium	<	0.1	mg/L	6010
Chromium	<	0.1	mg/L	6010
Lead	<	0.5	mg/L	6010
Mercury	<	0.02	mg/L	7470
Selenium	<	0.02	mg/L	7740
Silver	<	0.1	mg/L	6010

< = Analyte not detected at or above the listed reporting limit.

Halogenated Volatile Organics
EPA Method 8010

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-2
VISTA Sample ID: 913096-002
Date Sampled : 01/08/91
Date Analyzed: 01/17/91

Sample Type: Soil
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Chloromethane	<	0.2	ug/kg
Bromomethane	<	0.2	ug/kg
Dichlorodifluoromethane	<	0.2	ug/kg
Vinyl Chloride	<	0.2	ug/kg
Chloroethane	<	0.2	ug/kg
Methylene Chloride	<	2.0	ug/kg
Trichlorofluoromethane	<	0.2	ug/kg
1,1-Dichloroethene	<	0.2	ug/kg
1,1-Dichloroethane	<	0.2	ug/kg
Trans-1,2-Dichloroethene	<	0.2	ug/kg
Chloroform	<	0.2	ug/kg
1,2-Dichloroethane	<	0.2	ug/kg
1,1,1-Trichloroethane	<	0.2	ug/kg
Carbon Tetrachloride	<	0.2	ug/kg
Bromodichloromethane	<	0.2	ug/kg
1,2-Dichloropropane	<	0.2	ug/kg
Trans-1,3-Dichloropropene	<	0.2	ug/kg
Trichloroethene	<	0.2	ug/kg
1,1,2-Trichloroethane	<	0.2	ug/kg
cis-1,3-Dichloropropene	<	0.2	ug/kg
Dibromochloromethane	<	0.2	ug/kg
2-Chloroethyl Vinyl Ether	<	0.2	ug/kg
Bromoform	<	0.2	ug/kg
1,1,2,2-Tetrachloroethane	<	0.2	ug/kg
Tetrachloroethene	<	0.2	ug/kg
Chlorobenzene	<	0.2	ug/kg
1,4-Dichlorobenzene	<	1.0	ug/kg
1,3-Dichlorobenzene	<	1.0	ug/kg
1,2-Dichlorobenzene	<	1.0	ug/kg

< = Compound not detected at or above the listed reporting limit.

Aromatic Volatile Organics
EPA Method 8020

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-2
VISTA Sample ID: 913096-002
Date Sampled : 01/08/91
Date Analyzed: 01/17/91

Sample Type: Soil
Date Received: 01/09/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Benzene	<	0.5	ug/kg
Toluene	<	0.5	ug/kg
Ethylbenzene	<	0.5	ug/kg
Chlorobenzene	<	0.5	ug/kg
Total Xylenes	<	1.0	ug/kg
1,4-Dichlorobenzene	<	1.0	ug/kg
1,3-Dichlorobenzene	<	1.0	ug/kg
1,2-Dichlorobenzene	<	1.0	ug/kg
<u>Surrogate Recoveries</u>			<u>QC Limits</u>
1-Chloro-2-fluorobenzene	90	%	50-125

< = Compound not detected at or above the listed reporting limit.

Total Petroleum Hydrocarbons
GC/FID - CDHS Method

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-2
VISTA Sample ID: 913096-002
Date Sampled : 01/08/91
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: 01/09/91
Date Analyzed: 01/11/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Total Petroleum Hydrocarbons	<	10	mg/kg

< = Compound not detected at or above the listed reporting limit.

Polychlorinated Biphenyls
EPA Method 8080

Client: Exceltech, Inc.
Client Sample ID: 5-50063-51-2
VISTA Sample ID: 913096-002
Date Sampled : 01/08/91
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: 01/09/91
Date Analyzed: 01/15/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
PCB-1016	<	3	mg/kg
PCB-1221	<	3	mg/kg
PCB-1232	<	2	mg/kg
PCB-1242	<	1	mg/kg
PCB-1248	<	1	mg/kg
PCB-1254	<	1	mg/kg
PCB-1260	<	1	mg/kg

< = Compound not detected at or above the listed reporting limit.

QUALITY ASSURANCE

TCLP Metals

Client: Exceltech, Inc.
 Client Sample ID: NA
 VISTA Sample ID: 913096-Blank
 Date Sampled : NA

Sample Type: TCLP Leachate
 Date Received: NA

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Method</u>
Arsenic	<	0.02	mg/L	7060
Barium	<	5	mg/L	6010
Cadmium	<	0.1	mg/L	6010
Chromium	<	0.1	mg/L	6010
Lead	<	0.5	mg/L	6010
Mercury	<	0.02	mg/L	7470
Selenium	<	0.02	mg/L	7740
Silver	<	0.1	mg/L	6010

NA = Not Applicable
 < = Analyte not detected at or above the listed reporting limit.

Quality Assurance
TCLP Metals
Duplicate Analyses

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: NA
Date Sampled : NA

Sample Type: TCLP Leachate
Date Received: NA

<u>Analyte</u>	<u>Sample Result (mg/L)</u>	<u>Duplicate Result (mg/L)</u>	<u>RPD</u>	<u>Method</u>
Arsenic	ND	ND	NA	7060
Barium	ND	ND	NA	6010
Cadmium	ND	ND	NA	6010
Chromium	ND	ND	NA	6010
Lead	ND	ND	NA	6010
Mercury	ND	ND	NA	7470
Selenium	ND	ND	NA	7740
Silver	ND	ND	NA	6010

RPD = Relative Percent Difference
ND = Not detected at or above the reporting limit.
NA = Not Applicable

Quality Assurance
TCLP Metals
Spike Sample Recovery

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: NA
Date Sampled : NA

Sample Type: TCLP Leachate
Date Received: NA

<u>Analyte</u>	<u>Spike Added (mg/L)</u>	<u>Sample Conc. (mg/L)</u>	<u>Spike Conc. (mg/L)</u>	<u>% Rec</u>	<u>QC Limits % Rec</u>
Arsenic	0.050	ND	0.047	94	75-125
Barium	10.0	ND	9.9	99	75-125
Cadmium	0.50	ND	0.49	98	75-125
Chromium	0.50	ND	0.47	94	75-125
Lead	1.0	ND	0.94	94	75-125
Mercury	0.0020	ND	0.0022	110	75-125
Selenium	0.050	ND	0.044	88	75-125
Silver	0.50	ND	0.47	94	50-150

NA = Not Applicable
ND = Not detected at or above the reporting limit.

Quality Assurance
 TCLP Metals
 Laboratory Control Sample Results

Client: Exceltech, Inc.
 VISTA Sample ID: 913096-LCS

<u>Analyte</u>	<u>True Value (mg/L)</u>	<u>Sample Result (mg/L)</u>	<u>% Rec</u>	<u>QC Limits % Rec</u>
Arsenic	0.050	0.053	106	75-125
Barium	10.0	9.9	99	75-125
Cadmium	0.50	0.48	96	75-125
Chromium	0.50	0.46	92	75-125
Lead	1.0	0.92	92	75-125
Mercury	0.0020	0.0023	115	75-125
Selenium	0.050	0.056	112	75-125
Silver	0.50	0.47	94	50-150

Halogenated Volatile Organics
EPA Method 8010

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: 913096-Blank
Date Sampled : NA
Date Analyzed: 01/17/91

Sample Type: Water
Date Received: NA

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Chloromethane	<	0.2	ug/L
Bromomethane	<	0.2	ug/L
Dichlorodifluoromethane	<	0.2	ug/L
Vinyl Chloride	<	0.2	ug/L
Chloroethane	<	0.2	ug/L
Methylene Chloride	<	2.0	ug/L
Trichlorofluoromethane	<	0.2	ug/L
1,1-Dichloroethene	<	0.2	ug/L
1,1-Dichloroethane	<	0.2	ug/L
Trans-1,2-Dichloroethene	<	0.2	ug/L
Chloroform	<	0.2	ug/L
1,2-Dichloroethane	<	0.2	ug/L
1,1,1-Trichloroethane	<	0.2	ug/L
Carbon Tetrachloride	<	0.2	ug/L
Bromodichloromethane	<	0.2	ug/L
1,2-Dichloropropane	<	0.2	ug/L
Trans-1,3-Dichloropropene	<	0.2	ug/L
Trichloroethene	<	0.2	ug/L
1,1,2-Trichloroethane	<	0.2	ug/L
cis-1,3-Dichloropropene	<	0.2	ug/L
Dibromochloromethane	<	0.2	ug/L
2-Chloroethyl Vinyl Ether	<	0.2	ug/L
Bromoform	<	0.2	ug/L
1,1,2,2-Tetrachloroethane	<	0.2	ug/L
Tetrachloroethene	<	0.2	ug/L
Chlorobenzene	<	0.2	ug/L
1,4-Dichlorobenzene	<	1.0	ug/L
1,3-Dichlorobenzene	<	1.0	ug/L
1,2-Dichlorobenzene	<	1.0	ug/L

NA = Not Applicable

< = Compound not detected at or above the listed reporting limit.

Quality Assurance
Chlorinated Volatile Organics - EPA Method 8010
Matrix Spike Recovery and Precision

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: 913096-BLSP
Date Sampled : NA
Date Analyzed: 01/17/91

Sample Type: Water
Date Received: NA

<u>Compound</u>	<u>Spike Added (ug/L)</u>	<u>Sample Conc. (ug/L)</u>	<u>MS Conc. (ug/L)</u>	<u>MS % Rec</u>	<u>QC Limits % Rec</u>
1,1-Dichloroethene	20	ND	15.8	79	52-133
Trichloroethene	20	ND	21.2	106	69-131
Chlorobenzene	20	ND	15.4	77	65-135

<u>Compound</u>	<u>Spike Added (ug/L)</u>	<u>MSD Conc. (ug/L)</u>	<u>MSD % Rec</u>	<u>RPD</u>	<u>QC Limits</u>	
					<u>RPD</u>	<u>% Rec</u>
1,1-Dichloroethene	20	15.9	80	1	14	52-133
Trichloroethene	20	22.4	112	6	14	69-131
Chlorobenzene	20	14.8	74	4	13	65-135

NA = Not Applicable
ND = Not Detected
MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

Aromatic Volatile Organics
EPA Method 8020

Client: Exceltech, Inc.

Client Sample ID: NA

VISTA Sample ID: 913096-Blank

Date Sampled : NA

Date Analyzed: 01/17/91

Sample Type: Water

Date Received: NA

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Benzene	<	0.5	ug/L
Toluene	<	0.5	ug/L
Ethylbenzene	<	0.5	ug/L
Chlorobenzene	<	0.5	ug/L
Total Xylenes	<	1.0	ug/L
1,4-Dichlorobenzene	<	1.0	ug/L
1,3-Dichlorobenzene	<	1.0	ug/L
1,2-Dichlorobenzene	<	1.0	ug/L
<u>Surrogate Recoveries</u>			<u>QC Limits</u>
1-Chloro-2-fluorobenzene	98	%	50-125

NA = Not Applicable

< = Compound not detected at or above the listed reporting limit.

Quality Assurance
Aromatic Volatile Organics - EPA Method 8020
Matrix Spike Recovery and Precision

Client: Exceltech, Inc.

Client Sample ID: NA

VISTA Sample ID: 913096-BLSP

Date Sampled : NA

Date Analyzed: 01/17/91

Sample Type: Water

Date Received: NA

<u>Compound</u>	<u>Spike Added (ug/L)</u>	<u>Sample Conc. (ug/L)</u>	<u>MS Conc. (ug/L)</u>	<u>MS % Rec</u>	<u>QC Limits % Rec</u>
Benzene	20	ND	20.4	102	74-120
Toluene	20	ND	20.2	101	77-118
Chlorobenzene	20	ND	20.8	104	78-131

<u>Compound</u>	<u>Spike Added (ug/L)</u>	<u>MSD Conc. (ug/L)</u>	<u>MSD % Rec</u>	<u>RPD</u>	<u>QC Limits RPD % Rec</u>
Benzene	20	20.2	101	1	11 74-120
Toluene	20	19.9	100	1	13 77-118
Chlorobenzene	20	20.4	102	2	13 78-131

NA = Not Applicable
ND = Not Detected
MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

Total Petroleum Hydrocarbons
GC/FID - CDHS Method

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: 913096-Blank
Date Sampled : NA
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: NA
Date Analyzed: 01/10/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
Total Petroleum Hydrocarbons	<	10	mg/kg

NA = Not Applicable

< = Compound not detected at or above the listed reporting limit.

Quality Assurance
 Total Petroleum Hydrocarbons - CDHS Method
 Matrix Spike Recovery and Precision

Client: Exceltech, Inc.
 Client Sample ID: NA
 VISTA Sample ID: NA
 Date Sampled : NA
 Date Extracted: 01/09/91

Sample Type: Soil
 Date Received: NA
 Date Analyzed: 01/10/91

<u>Compound</u>	<u>Spike Added (mg/kg)</u>	<u>Sample Conc. (mg/kg)</u>	<u>MS Conc. (mg/kg)</u>	<u>MS % Rec</u>	<u>QC Limits % Rec</u>
Hydrocarbon (Diesel)	50	ND	55.3	111	37-128

<u>Compound</u>	<u>Spike Added (mg/kg)</u>	<u>MSD Conc. (mg/kg)</u>	<u>MSD % Rec</u>	<u>RPD</u>	<u>QC Limits RPD % Rec</u>
Hydrocarbon (Diesel)	50	50.8	102	8	* 37-128

NA = Not Applicable
 ND = Not Detected
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 RPD = Relative Percent Difference

* RPD limits have not been established for these compounds.

Polychlorinated Biphenyls
EPA Method 8080

Client: Exceltech, Inc.
Client Sample ID: NA
VISTA Sample ID: 913096-Blank
Date Sampled : NA
Date Extracted: 01/09/91

Sample Type: Soil
Date Received: NA
Date Analyzed: 01/15/91

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>
PCB-1016	<	3	mg/kg
PCB-1221	<	3	mg/kg
PCB-1232	<	2	mg/kg
PCB-1242	<	1	mg/kg
PCB-1248	<	1	mg/kg
PCB-1254	<	1	mg/kg
PCB-1260	<	1	mg/kg

NA = Not Applicable

< = Compound not detected at or above the listed reporting limit.

Quality Assurance
 Polychlorinated Biphenyls - EPA Method 8080
 Matrix Spike Recovery and Precision

Client: Exceltech, Inc.
 Client Sample ID: 5-50063-51-2
 VISTA Sample ID: 913096-002
 Date Sampled : 01/08/91
 Date Extracted: 01/09/91

Sample Type: Soil
 Date Received: 01/09/91
 Date Analyzed: 01/15/91

<u>Compound</u>	<u>Spike Added (mg/kg)</u>	<u>Sample Conc. (mg/kg)</u>	<u>MS Conc. (mg/kg)</u>	<u>MS % Rec</u>	<u>QC Limits % Rec</u>
Aroclor 1254	5.0	ND	5.36	107	47-145

<u>Compound</u>	<u>Spike Added (mg/kg)</u>	<u>MSD Conc. (mg/kg)</u>	<u>MSD % Rec</u>	<u>RPD</u>	<u>QC Limits RPD % Rec</u>
Aroclor 1254	5.0	5.22	104	3	* 47-145

ND = Not Detected
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 RPD = Relative Percent Difference

* RPD limits have not been established for these compounds.

APPENDIX D

**REPRESENTATIVE
SITE PHOTOGRAPHS**

FOUR STAR BRAND

SOUTHWORTH CO. U.S.A.

25% COTTON FIBER

Sample No. 5-50063-51-1:
soil sample from area of
staining beneath the PVC
drainage pipe on east canal
bank.



Sample No. 5-50063-51-2:
sample collected from area
of canal bank above the
stained area to be used as a
background sample.



SITE PHOTOGRAPHS

OLD CROSS CUT CANAL

**INDIAN SCHOOL ROAD &
48TH STREET**

PHOENIX, ARIZONA

REVIEWED BY:

JMP

APPROVED BY:

JMP

JOB #:
5-50063-51

DRAWN BY:
JMP

DATE:
08 FEB 91

DRAWING #:
50063-D1