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ENVIRONMENTAL  
PROTECTION



June 1, 2000  
Project 6262.000.0

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*SMC 6669*

Mr. Hugh J. Murphy  
City of Hayward Fire Department  
777 B Street  
Hayward, California 94541-5007

Subject: Results of Phase II Investigation  
Hayward Area Recreation District Property  
695 Industrial Parkway  
Hayward, California

Dear Mr. Murphy:

As requested by the City of Hayward, Geomatrix Consultants, Inc. (Geomatrix) has prepared this letter to summarize results of a soil sampling program performed at the portion of the Hayward Area Recreation District (HARD) property to be developed as a Park. The HARD property, located at 695 Industrial Parkway in Hayward, California, is approximately 4.5-acres. SummerHill Homes (SummerHill) is in the process of acquiring 1.1 acres of the property for additional residential development; this portion of the property was evaluated during a separate sampling effort.<sup>1</sup> On HARD's behalf SummerHill will develop the remaining 3.4 acres as a park (HARD park property, Figure 1). The results described herein address these 3.4 acres; the work was performed in accordance with Geomatrix's work plan.<sup>2</sup>

Geomatrix performed a Phase I Environmental Site Assessment<sup>3</sup> for the HARD park property and the adjacent Canterbury Residential Development. The results of the Phase I assessment indicate that parts of the site have been used for agricultural and residential purposes. Historic site conditions included residential buildings and sheds, storage of cars and trucks, and mounds of soil and household debris. Limited soil sampling along the western property boundary was performed by Earth Systems Environmental, Inc. (ESE) in 1991 at locations where surface staining was observed. Low concentrations of petroleum hydrocarbons were detected in two soil samples; metals appeared to be within natural background concentrations. Geomatrix recommended additional soil characterization to further evaluate concentrations of chemicals in soil across the HARD park property.

This letter has been divided into four sections. The first section describes the field methods used to collect soil samples at the HARD park property. The second section discusses the

<sup>1</sup> Geomatrix Consultants, Inc., 2000, Final Soil Sampling Results -- Unoccupied Residential Lots, Canterbury Residential Development, April 28.

<sup>2</sup> Geomatrix Consultants, Inc., 2000, Work Plan for Phase II Investigation, Hayward Area Recreation District Property, 695 Industrial Parkway, Hayward, California, May 4.

<sup>3</sup> Geomatrix Consultants, Inc., 2000, Phase I Environmental Site Assessment, Canterbury Residential Development and Hayward Area Recreation Department Park, Hayward, California, April 11.

Laboratory ID 00-330 mb2). Acetone was detected in two samples (GMX-HRD5-1.0 and GMX-HRD3-1.0) at concentrations similar to that determined in the method blank; the laboratory indicated that acetone in these samples may be from laboratory contamination. Acetone was also detected in three samples (GMX-HRD1-1.0, GMX-HRD6-1.0, and GMX-HRD2-1.0) at higher concentrations than in the method blank; the laboratory indicated that a percentage of the acetone in these three samples may be from laboratory contamination. Methylene chloride was detected in 8 samples; the laboratory indicated that its presence may be from laboratory contamination.

One internal standard was outside control limits for its associated VOC analytes in two samples. This resulted in estimated values for the select VOCs associated with this standard.

Surrogates were run in every sample analyzed. Surrogate recoveries were within analyte-specific control limits with the following exception:

- In one VOC sample (GMX-HRD6-1.0), one surrogate recovery and the associated internal standard were outside control limits, which was attributed to dilution of the sample by the laboratory.

Based on the volume of data collected for the site, these internal standard and surrogate recovery issues are not considered to significantly affect the conclusions of the assessment.

Matrix spike samples were also analyzed to evaluate the accuracy of the analytical results. All matrix spike/matrix spike duplicate samples for pesticides, PAHs, TPHmo, and VOCs were within control limits.

### ***Precision***

To evaluate precision, matrix spike/matrix spike duplicate samples, laboratory control samples, and laboratory duplicate samples were analyzed using each analysis method as discussed previously. One laboratory duplicate, MS/MSD sample, laboratory control sample was run for PAH, VOC, and TPHmo analyses. Two MS/MSD samples, and two laboratory control samples were run for pesticides. The relative percent differences (RPDs) for these samples were within analyte-specific control limits, except for the laboratory duplicates. The RPDs for the laboratory duplicates could not be calculated as the analytes were not detected in either of the duplicate analyses.

The analyses used to evaluate precision were within their respective control limits.

### ***Completeness***

Data generated during the project were evaluated for completeness, that is, the amount of data meeting project QA/QC goals. Data generated for this project were considered complete for the purpose of the evaluation conducted.



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laboratory analytical program for the soil samples. The third section presents the results of the field and analytical program. The fourth section compares the detected concentrations to U.S. Environmental Protection Agency (U.S. EPA) Preliminary Remediation Goals (PRGs) for residential land use.

### **FIELD PROGRAM**

Prior to performing the field investigation, Geomatrix completed the following tasks: reviewed the existing Health and Safety Plan (no update required); obtained a boring permit from the Alameda County Public Works Department (Attachment A); and cleared boring locations for underground utilities by notifying appropriate utilities through Underground Service Alert (USA).

On May 10, 2000, Geomatrix supervised the advancement of eight soil borings. As presented in the work plan, a 200-foot grid sampling approach was used to provide an aerial distribution of data across the site. The eight soil borings were advanced at the locations shown in Figure 2. Fast-Tek Engineering Support Services, Inc., a California-licensed drilling firm from Richmond, California, advanced the borings using a Geoprobe® 5400 rig.

The borings were continuously cored to a depth of about 10 feet below ground surface (bgs) using Geoprobe®'s DT21 dual-tube sampling system. The inner sample barrel consists of 1.25-inch-outside-diameter by 4-foot-long polybutyrate tubing. The recovered soil was logged in accordance with the Unified Soil Classification System visual-manual procedure (ASTM D2488-90) under the direction of a Geomatrix geologist registered in the State of California

Soil samples selected for laboratory analyses (approximate depths of 1, 5, and 9 feet bgs) were cut from the polybutyrate sample barrel. Two separate samples were collected at each depth interval (e.g., 1 to 1.5 feet and 1.5 to 2 feet bgs) for separate submittal to the two project laboratories. Samples were packaged for laboratory analyses by covering the ends of each sampling tube with Teflon™ sheets and plastic caps. The caps were secured with silicon tape. The soil samples were labeled, placed in resealable plastic bags, and stored in coolers with ice, pending delivery to an analytical laboratory under Geomatrix chain-of-custody.

Downhole equipment, including outer drive casing and drive rods, was steam cleaned prior to borehole advancement at each location. Soil cuttings were placed in labeled 5-gallon pails pending characterization for disposal by SummerHill Homes. Cleaning water was combined in the 55-gallon drum with the cleaning water from the shallow soil sampling program.

### **ANALYTICAL PROGRAM**

The upper soil samples from the 1- and 5-foot depth intervals (e.g., 1.0 to 1.5 feet) were submitted to Friedman & Bruya, a California-certified analytical laboratory in Seattle, Washington for analysis of:

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- total petroleum hydrocarbons quantified as motor oil (TPHmo), in accordance with U.S. EPA Method 8015 modified, after a silica gel cleanup;
- polycyclic aromatic hydrocarbons (PAHs), in accordance with U.S. EPA Method 8270C SIM (selected ion mode); and
- volatile organic compounds (VOCs), in accordance with U.S. EPA Method 8260.

The lower soil samples from the 1- and 5-foot depth intervals (e.g., 1.5 to 2.0 feet) were submitted to Chromalab, Inc., a California-certified analytical laboratory in Pleasanton, California for analysis of:

- Organochlorine pesticides in accordance with U.S. EPA Method 8081

Samples from the 9-foot depth interval were placed on hold at each laboratory, pending shallow analysis results.

For quality assurance/quality control (QA/QC) purposes, the laboratories analyzed duplicate samples, method blanks, matrix spike/matrix spike duplicate samples, and laboratory control samples.

## **RESULTS OF FIELD PROGRAM**

This section presents the results of the field program. A summary of the soil conditions observed during sampling and a discussion of the analytical results follow.

### **SOIL CLASSIFICATION**

Site stratigraphy consists of a fill unit underlain primarily by lean clay. The fill unit consists of plant mulch and lean clay and was approximately 1 foot thick. The fill material is underlain by lean clay, lean clay with fine sand, and clayey fine sand that typically grades in color from black to light yellowish brown. At location GMX-HRD-3, clayey sand was observed from approximately 3.5 to 9.5 feet bgs. This unit is interpreted to be fill as the sand fraction is fine to coarse, and minor amounts of fine gravel were also observed.

Saturated clayey sand was observed at locations GMX-HRD-3, GMX-HRD-4, GMX-HRD-6, GMX-HRD-7, and GMX-HRD-8 at depths between approximately 6.5 and 7.5 feet bgs. Saturated soil was not observed in the other three borings.

Neither odor, staining, nor elevated PID readings were noted in any of the soil borings.

Soil observed during sampling is generally consistent with soil observed during sampling activities completed on the Canterbury Residential Development,<sup>4</sup> although coarse-grained material (clayey sand) was observed more frequently beneath the HARD park property than in

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<sup>4</sup> Geomatrix Consultants, 2000, Soil Sampling Results, Canterbury Residential Development, Hayward, California, March 30.

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the Canterbury Residential Development. Soil boring logs for the eight borings advanced in the HARD park property are included as Attachment B.

## **ANALYTICAL LABORATORY RESULTS**

### **Soil Sample Results**

Analytical results for TPHmo, pesticides, and PAHs are summarized in Table 1. Laboratory analytical reports from Friedman and Bruya and Chromalab are presented in Attachments C and D, respectively. A review of the Quality Assurance/Quality Control data is presented in Attachment E.

TPHmo was detected in sample GMX-HRD6-1.0 at a concentration of 130 milligrams per kilogram (mg/kg). None of the other soil samples contained detectable concentrations of TPHmo.

Three of the 16 samples contained at least one PAH (Table 1); concentrations ranged from 14 to 82 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). All three of these samples were collected at approximately 1.0 feet bgs. Benzo(a)pyrene was detected in one sample (GMX-HRD7-1.5 at  $82 \mu\text{g}/\text{kg}$ ) above the residential Preliminary Remediation Goals (PRG) established by U.S. EPA Region 9<sup>5</sup> ( $62 \mu\text{g}/\text{kg}$ ; discussed further in the next section); three other PAHs were also detected in this sample.

Methylene chloride was detected in eight samples but was attributed to sample contamination by the laboratory. Five of the 16 samples (GMX-HRD1-1.0, GMX-HRD2-1.0, GMX-HRD3-1.0, GMX-HRD5-1.0, GMX-HRD6-1.0), contained detections of other VOCs. Acetone was detected in all of these samples at concentrations from 56 to  $310 \mu\text{g}/\text{kg}$ . However, acetone was also detected in a laboratory blank indicating that all or a portion of the acetone present may be due to laboratory contamination. Therefore, its detection may not be representative of soil quality at those locations. 2-Butanone was detected in 2 of the 16 samples (GMX-HRD1-1.0 and GMX-HRD6-1.0) at concentrations of 55 and  $65 \mu\text{g}/\text{kg}$ , respectively. p-Isopropyl-toluene was detected in 4 of the 16 samples (GMX-HRD1-1.0, GMX-HRD2-1.0, GMX-HRD5-1.0, GMX-HRD6-1.0) at concentrations from 7 to  $110 \mu\text{g}/\text{kg}$ . Toluene was detected in 2 samples (GMX-HRD1-1.0 and GMX-HRD6-1.0) at concentrations of 810 and  $12 \mu\text{g}/\text{kg}$ , respectively.

4,4-DDE was detected in one of the 16 soil samples (GMX-HRD1-1.5) at a concentration of  $8.1 \mu\text{g}/\text{kg}$ . No other pesticide compounds were detected above reporting limits.

## **DISCUSSION OF RESULTS**

In accordance with the work plan, concentrations of PAHs, VOCs, and pesticides detected at the site were compared with residential PRGs established by U.S. EPA Region 9.<sup>6</sup> Consider-

<sup>5</sup> U.S. EPA, 1999, Region 9 Preliminary Remediation Goals (PRGs), October 1.

<sup>6</sup> U.S. EPA, 1999, Region 9 Preliminary Remediation Goals (PRGs), October 1.

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ing the property will be used as a park, the use of residential PRGs provides a conservative point of comparison, as potential exposure by park users would be less than for residents. Total petroleum hydrocarbon measurements, such as TPH<sub>mo</sub>, represent mixtures of chemicals that, because of their potentially highly variable composition, have no associated health criteria. Therefore, the toxicity of these mixtures is best described by the aggregate toxicity of key individual chemicals in the mixture. As is the practice in California,<sup>7</sup> only petroleum hydrocarbon constituents detected in soil, i.e., PAHs and VOCs, were considered for comparison to PRGs.

PRGs combine current EPA toxicity values with standard exposure factors to estimate concentrations in environmental media (e.g., soil) that are protective of human health, including sensitive subgroups, over a lifetime. For some chemicals, variations in exposure or toxicity assessment required in California have been applied and a "Cal-modified" PRG has been published. The Cal-modified PRGs have been used in this assessment, where available. If chemicals are present at concentrations below the PRGs, then exposure to these chemicals should not result in adverse health effects. If multiple chemicals are present, then the potential for adverse health effects associated with cumulative exposure may need to be evaluated. The presence of chemicals at concentrations exceeding PRGs does not indicate that adverse health effects will occur, but "suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate."<sup>5</sup> The PRGs are listed at the bottom of the Table 1 for detected chemicals.

The comparison to PRGs yielded the following results:

- With the exception of benzo(a)pyrene, concentrations of the other 10 PAHs detected were at least 9 times lower than their respective PRGs. Concentrations of six of these PAHs were more than 100 times lower than their respective PRGs. Benzo(a)pyrene was detected in one sample (GMX-HRD7-1.0 at 82 µg/kg) above the PRG (62 µg/kg) and in another sample (GMX-HRD2-1.0) at 38 µg/kg. Benzo(a)pyrene was not detected in the samples collected at 5 feet bgs at GMX-HRD7 or GMX-HRD2. These results indicate that the benzo(a)pyrene detected above the PRG is limited to shallow soil. Because the distribution of benzo(a)pyrene is discontinuous and benzo(a)pyrene concentrations are not significantly higher than the PRGs, concentrations of PAHs detected in soil do not present a significant source of potential exposure to future users of the Park site.
- Concentrations of VOCs were at least 100 times lower than their respective PRGs in all samples where concentrations were detected.
- The single detection of 4,4-DDE (8.1 µg/kg) in the sample GMX-HRD1-1.5 is over 100 times lower than its respective residential PRG (1700 µg/kg).

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<sup>7</sup> Cal-EPA, 1994, Preliminary Endangerment Assessment Guidance Manual: Department of Toxic Substances control, Sacramento, California.



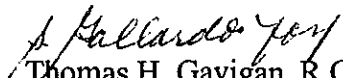
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## CONCLUSIONS

Based on data presented in this report and comparisons of detected soil concentrations to levels considered acceptable by U.S. EPA for residential site use, no further action is recommended.

Geomatrix appreciates this opportunity to provide consulting services to the City of Hayward. If you have any further questions, please contact any of the undersigned.

Sincerely yours,  
GEOMATRIX CONSULTANTS, INC.

  
Thomas H. Gavigan, R.G., C.H.G.  
Project Hydrogeologist

  
Ann M. Holbrow  
Senior Scientist

THG/AMH/pp  
\\sf3\deptdata\Project\6000s\6262\Park(HARD Property)\Park Report.doc

Attachments: Table 1  
Figures 1 and 2  
Attachment A – Permit  
Attachment B – Boring Logs  
Attachment C – Laboratory Analytical Results – Friedman & Bruya  
Attachment D – Laboratory Analytical Results – Chromalab  
Attachment E – Results of Quality Assurance/Quality Control

cc: Susan Hugo – Alameda County Health Care Services  
Denise Tsuji – Department of Toxic Substances Control  
Roger Brewer – RWQCB, San Francisco Bay Region  
Mark Beskind – SummerHill Homes  
Kim Brandt – LFR Levine-Fricke

TABLE 1

SOIL ANALYTICAL RESULTS FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL, PESTICIDES,  
VOLATILE ORGANIC COMPOUNDS, AND POLYCYCLIC AROMATIC HYDROCARBONS<sup>1</sup>

Canterbury Residential Development  
Hayward, California

16 samples

All concentrations are reported in micrograms per kilogram (µg/kg), except for TPHmo which is reported in milligrams per kilogram (mg/kg).

Sample ID	TPHmo EPA Method 8015M	4,4'-DDE EPA Method 8081	Volatile Organic Compounds EPA Method 8260B					Polycyclic Aromatic Hydrocarbons EPA Method 8270C SIM										
			Acetone	2-Butanone (MEK)	Methylene chloride	p-Iso- propyl- toluene	Toluene	Benz(a) anthracene	Benzo(b) fluoran- thene	Benzo(k) fluoran- thene	Benzo (g,h,i) perylene	Benzo(a) pyrene	Chrysene	Dibenzo (a,h) anthracene	Fluoran- thene	Indeno (1,2,3-cd) pyrene	Phenan- threne	Pyrene
GMX-HRD1-1.0	<50 <sup>2</sup>	NA	✓310 <sup>3</sup> /270 <sup>4</sup>	55/<250 <sup>4</sup>	<50/<250 <sup>4</sup>	21 <sup>6</sup> /110 <sup>4</sup>	830/810 <sup>4</sup>	<50	<50	<50	<50	<50	<50	<50	60	<50	<50	<50
GMX-HRD1-1.5	NA	8.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD1-5.0	<50	NA	<50	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD1-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD2-1.0	<50	NA	✓110 <sup>3</sup>	<50	<50	99	<5	29	29	34	42	38	45	14	56	28	26	56
GMX-HRD2-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD2-5.0	<50	NA	<50	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD2-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD3-1.0	<50	NA	✓60 <sup>5</sup>	<50	59 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD3-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD3-5.0	<50	NA	✓50	<50	67 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD3-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD4-1.0	<50	NA	✓50	<50	73 <sup>5</sup>	<5	<5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
GMX-HRD4-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD4-5.0	<50	NA	✓50	<50	70 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD4-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD5-1.0	<50	NA	✓56 <sup>5</sup>	<50	<50	7	<5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
GMX-HRD5-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD5-5.0	<50	NA	<50	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD5-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD6-1.0	130	NA	✓300 <sup>3</sup>	65	<50	26 <sup>6</sup>	12	<50	<50	<50	<50	<50	<50	<50	76	<50	<50	76
GMX-HRD6-1.5	NA	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD6-5.0	<50	NA	<50	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD6-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD7-1.0	<50	NA	✓50	<50	54 <sup>5</sup>	<5	<5	<50	56	<50	63	82	<50	<50	<50	58	<50	<50
GMX-HRD7-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD7-5.0	<50	NA	✓50	<50	80 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD7-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



TABLE 1

SOIL ANALYTICAL RESULTS FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL, PESTICIDES,  
VOLATILE ORGANIC COMPOUNDS, AND POLYCYCLIC AROMATIC HYDROCARBONS<sup>1</sup>

Canterbury Residential Development  
Hayward, California

All concentrations are reported in micrograms per kilogram (µg/kg), except for TPHmo which is reported in milligrams per kilogram (mg/kg).

Sample ID	TPHmo EPA Method 8015M	4,4'-DDE EPA Method 8081	Volatile Organic Compounds EPA Method 8260B					Polycyclic Aromatic Hydrocarbons EPA Method 8270C SIM										
			Acetone	2-Butanone (MEK)	Methylene chloride	p-Iso- propyl- toluene	Toluene	Benz(a) anthracene	Benzo(b) fluoran- thene	Benzo(k) fluoran- thene	Benzo (g,h,i) perylene	Benzo(a) pyrene	Chrysene	Dibenzo (a,h) anthracene	Fluoran- thene	Indeno (1,2,3-cd) pyrene	Phenan- threne	Pyrene
GMX-HRD8-1.0	<50	NA	✓<50	<50	52 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD8-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD8-5.0	<50	NA	✓<50	<50	84 <sup>5</sup>	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD8-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRGs	-- <sup>7</sup>	1700	1,600,000	7,300,000	8900	-- <sup>7</sup>	520,000	620	620	6200	3,700,000 <sup>8</sup>	62	6100	62	2,300,000	620	22,000,000 <sup>8</sup>	2,300,000

Notes:

<sup>1</sup> Only compounds detected are shown in table.

<sup>2</sup> < = Not detected above laboratory reporting limit indicated.

<sup>3</sup> The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

<sup>4</sup> Sample was analyzed a second time after 10-fold dilution to bring toluene concentration within reporting limits. Results presented after " / " were from diluted sample.

<sup>5</sup> The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

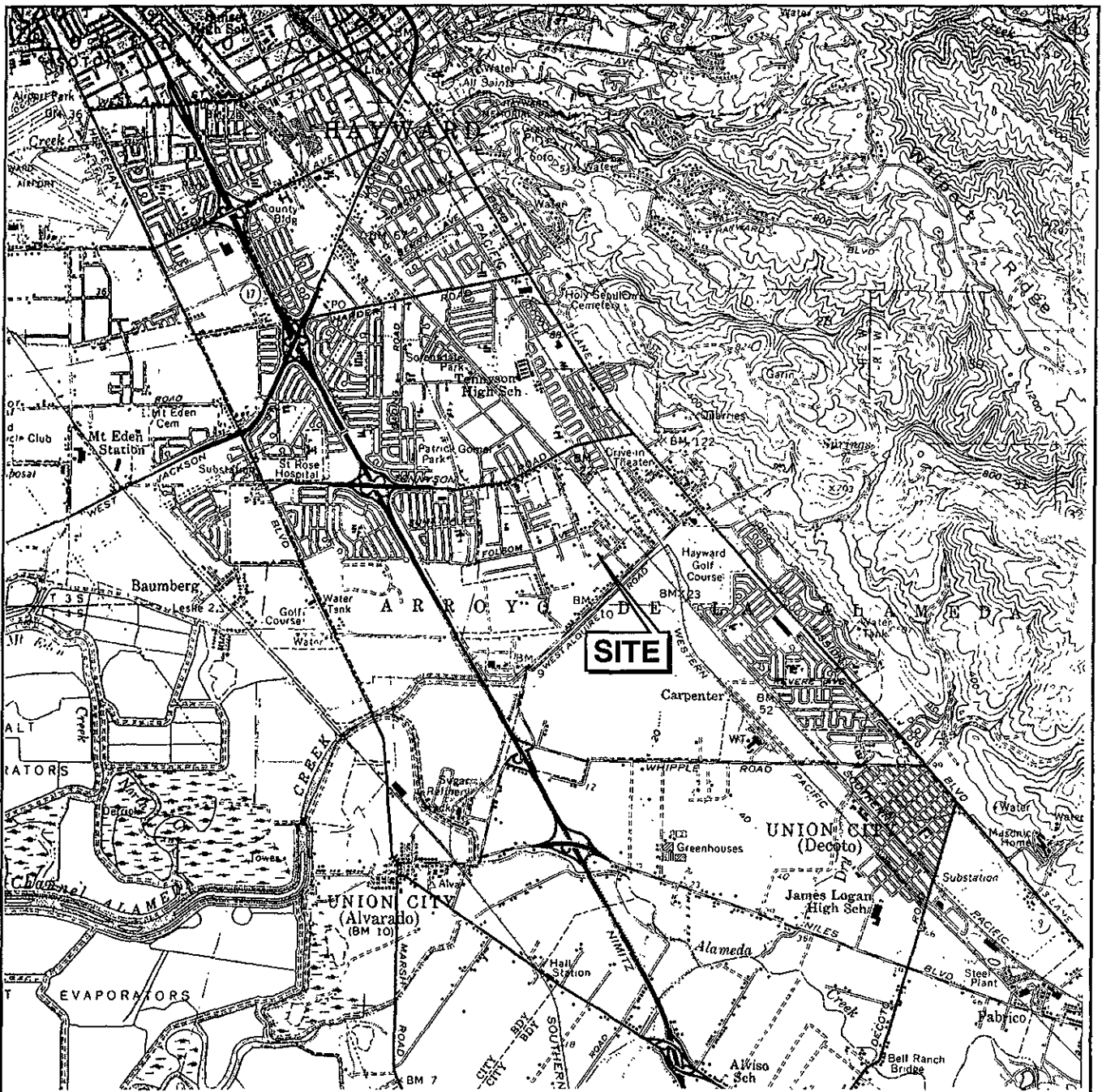
<sup>6</sup> The internal standard associated with the analyte is out of control limits. The reporting limit or reported concentration is an estimate.

<sup>7</sup> PRG not available.

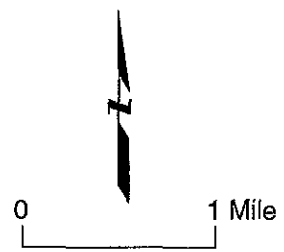
<sup>8</sup> A surrogate PRG was used because a PRG was not available for this compound. The surrogate was selected based on physico-chemical properties:

Acenaphthene for benzo(g,h,i)perylene


Anthracene for phenanthrene



Base map from U.S. Geological Survey; Hayward Quadrangle (California), 15 Minute series (topographic), 1959.

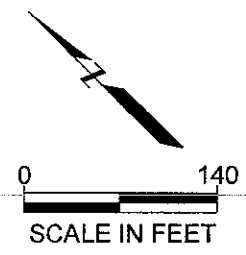
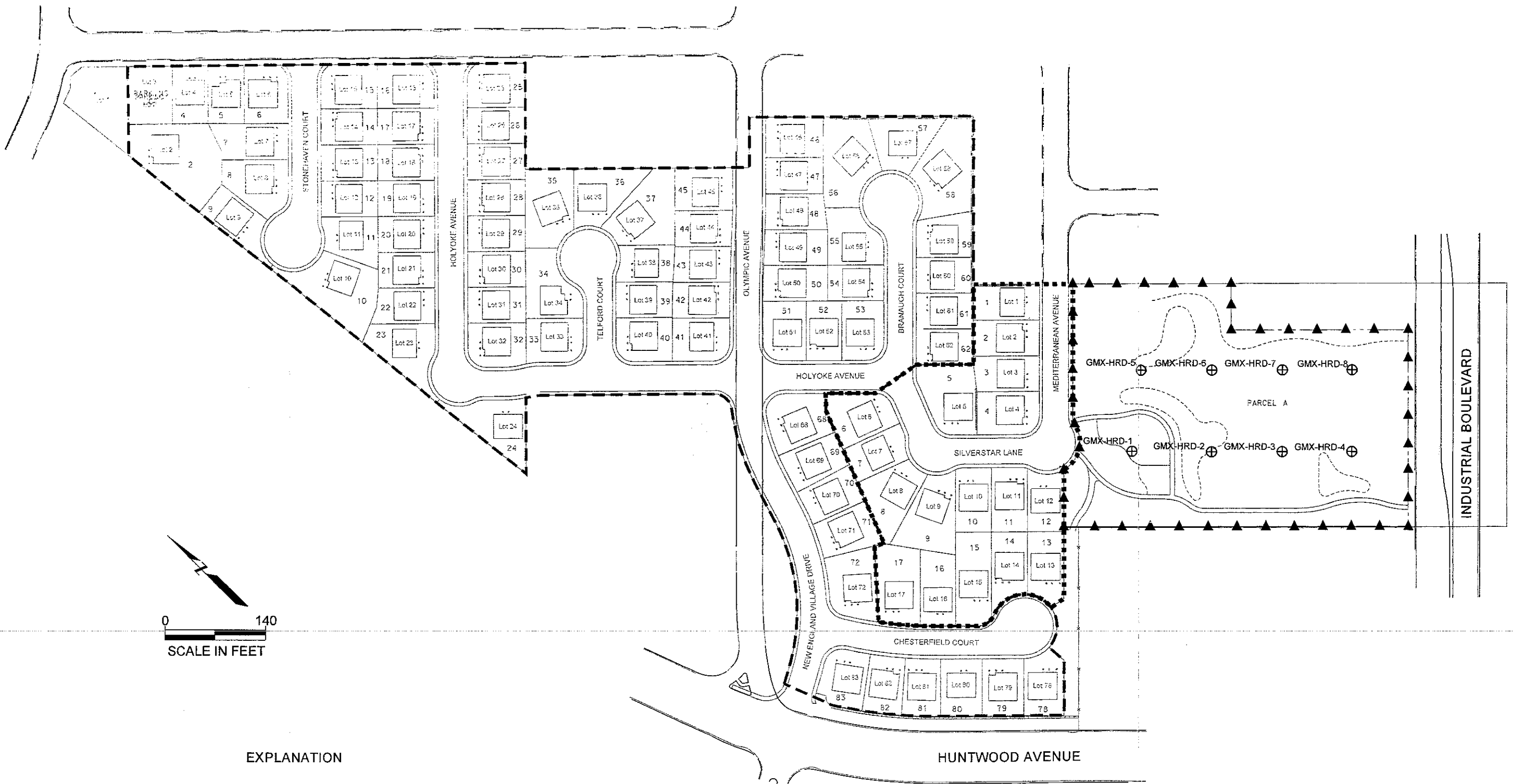


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 <b>GEOMATRIX</b>	<b>SITE VICINITY MAP</b> Canterbury Residential Development Olympic Avenue Hayward, California	Project No. <b>6262.000 7</b>
		Figure <b>1</b>

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 CHECKED: \\SPRINT2\jpl\j500005 geomtrx.ctb

MAP - 4mvp.jun



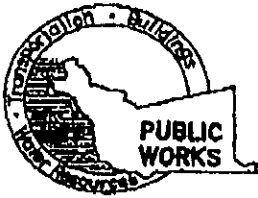
- EXPLANATION**
- ▲ ▲ ▲ ▲ HARD PARK PROPERTY
  - ⊕ BORING LOCATION
  - ..... TRACT 7124 (TRS)
  - TRACT 7069 (TRN)

<b>SITE PLAN WITH BORING LOCATIONS</b> 695 Industrial Parkway (HARD Park Property) Hayward, California		
 <b>GEOMATRIX</b>	Project No. 6262.000 7	Figure <b>2</b>

Attachment A

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Permit



### ALAMEDA COUNTY PUBLIC WORKS AGENCY

#### WATER RESOURCES SECTION

399 ELMHURST ST. HAYWARD CA. 94544-1395  
PHONE (510) 670-5554 MARLON MAGALLANES/FRANK CODD (510) 670-5783  
FAX (510)782-1939

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT  
HAYWARD AREA, RESERVATION DISTRICT PROPERTY  
695 Industrial Parkway  
Hayward, CA

PERMIT NUMBER W00-211  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

#### PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT Name City of Hayward (Mr. Hugh Murphy)  
Address 777 B Street Phone (510) 663-4784  
City Hayward, CA Zip 94541

- A. GENERAL**
  - 1. permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
  - 2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources- Well Completion Report.
  - 3. Permit is void if project not begun within 90 days of approval date

APPLICANT Name Tom Gavigan  
Geomatrix Consultants Fax (510) 663-4741  
Address 2101 Webster St. 12th Floor Phone (510) 663-4100  
City Oakland, CA Zip 94612

- B. WATER SUPPLY WELLS**
  - 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  - 2. Minimum seal depth is 30 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT  
Well Construction  Geotechnical Investigation   
Cathodic Protection  General   
Water Supply  Contamination   
Monitoring  Well Destruction   
Soil borings  (Environmental Sampling)  
**PROPOSED WATER SUPPLY WELL USE**  
New Domestic  Replacement Domestic   
Municipal  Irrigation   
Industrial  Other \_\_\_\_\_

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
  - 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  - 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

DRILLING METHOD:  
Mud Rotary  Air Rotary  Auger   
Cable  Other  (Direct Push)

- D. GEOTECHNICAL**  
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

DRILLER'S LICENSE NO. C 57 589008 (FACT - TER

- E. CATHODIC**  
Fill hole above anode zone with concrete placed by tremie.

WELL PROJECTS  
Drill Hole Diameter \_\_\_\_\_ in. Maximum \_\_\_\_\_ ft.  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
Surface Seal Depth \_\_\_\_\_ ft. Number \_\_\_\_\_

- F. WELL DESTRUCTION**  
See attached.

Environmental  
**GEOTECHNICAL PROJECTS**  
Number of Borings 2 Maximum \_\_\_\_\_ ft.  
Hole Diameter 2 in. Depth 10 ft.

- G. SPECIAL CONDITIONS**

ESTIMATED STARTING DATE 5/10/00  
ESTIMATED COMPLETION DATE 5/10/00

APPROVED Frank Codd DATE 5-8-00

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 7368.

APPLICANT'S SIGNATURE [Signature] DATE 5/5/00

## Attachment B

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### Boring Logs

PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY) Hayward, California		<b>Log of Boring No. GMX-HRD-1</b>	
BORING LOCATION: South row, far west boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST NA COMPL. NA
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation: Not surveyed	
1	GMX- HRD1- 1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
2	GMX- HRD1- 1.5				LEAN CLAY (CL): black (N 2.5/), moist, 95% fines, 5% fine to medium sand, low to medium plasticity, hard	
3					↓ dark gray (2.5Y 4/1), 90% fines, 10% fine to medium sand	
4					↓ light yellowish brown (2.5Y 6/4)	
5	GMX- HRD1- 5.0			0		
6	GMX- HRD1- 5.5				□ pale yellow (5Y 7/3)	
7					SANDY LEAN CLAY (CL): olive gray (5Y 5/2), moist, 70% fines, 30% fine sand, low plasticity, soft	
8					LEAN CLAY light yellowish brown (2.5Y 6/4), moist, 90% fines, 10% fine sand, medium plasticity, firm	
9	GMX- HRD1- 9.0			0		
10	GMX- HRD1- 9.5				Bottom of boring at 10.0 feet	
11						Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
12						
13						
14						
15						



PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY)  
Hayward, California

## Log of Boring No. GMX-HRD-2

BORING LOCATION: South row, middle west boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST NA COMPL. NA
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation. Not surveyed	
0	GMX-HRD2-1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
1	GMX-HRD2-1.5			0	LEAN CLAY (CL): black (N 2.5/), moist, 90% fines, 10% fine sand, trace fine gravel, low to medium plasticity, firm	
2					↓ dark olive gray (5Y 3/2)	
3					LEAN CLAY with SAND (CL): dark olive gray (5Y 3/2), moist, 85% fines, 15% fine sand, low plasticity, hard	
4	GMX-HRD2-5.0			0	□ pale yellow (5Y 7/3)	
5	GMX-HRD2-5.5			0	↓ light yellowish brown (2.5Y 6/4)	
6					LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), moist, 90% fines, 10% fine sand, low to medium plasticity, firm	
7					SANDY LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), 70% fines, 30% fine sand, low plasticity, soft	
8	GMX-HRD2-9.0			0		
9	GMX-HRD2-9.5			0		
10					Bottom of boring at 10.0 feet	Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
11						
12						
13						
14						
15						

OAKBORE (REV 5/00)





PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY)  
Hayward, California

### Log of Boring No. GMX-HRD-3

**BORING LOCATION:** South row, middle east boring  
**DRILLING CONTRACTOR:** Fast-Tek Engineering Support Services  
**DRILLING METHOD:** Direct push  
**DRILLING EQUIPMENT:** Geoprobe 5400  
**SAMPLING METHOD:** Geoprobe DT21 dual tube soil sampler [4' x 1.125']  
**HAMMER WEIGHT:** NA      **DROP:** NA

**ELEVATION AND DATUM:**  
Not surveyed; datum is ground surface  
**DATE STARTED:** 5/10/00      **DATE FINISHED:** 5/10/00  
**TOTAL DEPTH (ft.):** 10.0      **MEASURING POINT:** Ground surface  
**DEPTH TO WATER:** FIRST 7.0      COMPL. ND  
**LOGGED BY:** B. Turner  
**RESPONSIBLE PROFESSIONAL:** Tom Gavigan      **REG. NO.:** RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.  Surface Elevation: Not surveyed	REMARKS
	Sample No.	Sample	Blows/ Foot			
0	GMX-HRD3-1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
1	GMX-HRD3-1.5			0	LEAN CLAY (CL): black (N 2.5/), moist, 90% fines, 10% fine sand, low to medium plasticity, firm [Fill]	
2				0		
3				0		
4	GMX-HRD3-5.0			0	CLAYEY SAND (SC): dark gray (5Y 4/1), moist, 85% fine to medium sand, 15% low plasticity fines, trace fine gravel [Fill]	
5	GMX-HRD3-5.5			0	80% fine to coarse sand, 15% low plasticity fines, 5% fine gravel	
6				0	wet	
7	GMX-HRD3-9.0			0	60% fine to medium sand, 40% low plasticity fines, trace fine gravel	
8	GMX-HRD3-9.5			0	SANDY LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), wet, 70% fines, 30% fine sand, low plasticity, soft	
9				0	Bottom of boring at 10.0 feet	
10						Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
11						
12						
13						
14						
15						



PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY) Hayward, California		<b>Log of Boring No. GMX-HRD-4</b>	
BORING LOCATION: South row, far east boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST 6.5 COMPL. NA
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter	REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation: Not surveyed	
1	GMX-HRD4-1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
2	GMX-HRD4-1.5			0	LEAN CLAY (CL): black (N 2.5/), moist, 90% fines, 10% fine sand, low to medium plasticity, hard	
4					pale yellow (5Y 7/3)	
5	GMX-HRD4-5.0			0	SANDY LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), moist, 70% fines, 30% fine sand, low plasticity, firm	
6	GMX-HRD4-5.5			0		
7					CLAYEY SAND (SC): olive gray (5Y 4/2), wet, 70% fine sand, 30% low plasticity fines	
9	GMX-HRD4-9.0			0		
10	GMX-HRD4-9.5			0		
10					Bottom of boring at 10.0 feet	
11						



PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY) Hayward, California		<b>Log of Boring No. GMX-HRD-5</b>	
BORING LOCATION: North row, far west boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST NA COMPL. NA
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation: Not surveyed	
1	GMX-HRD1-1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
2	GMX-HRD5-1.5			0	LEAN CLAY (CL): dark olive gray (5Y 3/2), moist, 90% fines, 10% fine sand, low to medium plasticity, firm	
3				0	black (N 2.5/), 95% fines, 5% fine sand	
4				0		
5	GMX-HRD5-5.0			0	pale yellow (5Y 7/3)	
6	GMX-HRD5-5.5			0	SANDY LEAN CLAY (CL): olive gray (5Y 5/2), moist, 70% fines, 30% fine sand, low plasticity, soft	
7				0	LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), moist, 90% fines, 10% fine sand, medium plasticity, firm	
8				0		
9	GMX-HRD5-9.0			0		
10	GMX-HRD5-9.5			0		
11					Bottom of boring at 10.0 feet	Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
12						
13						
14						
15						

PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY)  
Hayward, California

**Log of Boring No. GMX-HRD-6**

BORING LOCATION: North row, middle west boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST 7.5 COMPL. ND
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125"]		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA		RESPONSIBLE PROFESSIONAL: Tom Gavigan	
DROP: NA		REG. NO. RG 6782	

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION	REMARKS
	Sample No.	Sample	Blows/ Foot		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	
					Surface Elevation: Not surveyed	
0	GMX-HRD6-1.0			0	PLANT MULCH and LEAN CLAY (CL): [FILL]	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
1	GMX-HRD6-15			0	LEAN CLAY (CL): black (N 2.5/), moist, 95% fines, 5% fine sand, low to medium plasticity, firm	
2					LEAN CLAY with SAND (CL): black (N 2.5/), moist, 75% fines, 25% fine sand, low plasticity, firm	
3					LEAN CLAY (CL): black (N 2.5/), moist, 90% fines, 10% fine sand, low to medium plasticity, firm	
4						
5	GMX-HRD6-5.0			0	light yellowish brown (2.5Y 6/4)	
6	GMX-HRD6-5.5			0	pale yellow (5Y 7/3)	
7					SANDY LEAN CLAY (CL)	
8					CLAYEY SAND (SC): light yellowish brown (2.5Y 6/4), wet, 75% fine to medium sand, 25% low plasticity fines	
9	GMX-HRD6-9.0			0	SANDY LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), wet, 60% fines, 40% fine sand, low plasticity, soft	
10	GMX-HRD6-9.5			0		
10					Bottom of boring at 10.0 feet	Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
11						
12						
13						
14						

PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY)  
Hayward, California

## Log of Boring No. GMX-HRD-7

BORING LOCATION: North row, middle east boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST 7.6
			COMPL. ND
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
	Sample No.	Sample	Blows/ Foot			
0					Surface Elevation: Not surveyed	
1	GMX-HRD7-1.0			0	LEAN CLAY (CL): black (2.5Y 2.5/1), moist, 75% fines, 15% organic material, 10% fine to medium sand, trace fine gravel, low plasticity, firm	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard
2	GMX-HRD7-1.5			0	black (N 2.5/), 95% fines, 5% fine sand	
3				0	dark olive gray (5Y 3/2), 90% fines, 10% fine sand	
4				0	light yellowish brown (2.5Y 6/4)	
5	GMX-HRD7-5.0			0	pale yellow (5Y 7/3)	
6	GMX-HRD7-6.5			0	95% fines, 5% fine sand, medium plasticity, hard	
8	GMX-HRD7-9.0			0	CLAYEY SAND (SC): olive gray (5Y 4/2), wet, 70% fine sand, 30% low plasticity fines	
9	GMX-HRD7-9.5			0		
10					Bottom of boring at 10.0 feet	
11						

PROJECT: 695 INDUSTRIAL PARKWAY (HARD PARK PROPERTY)  
Hayward, California

## Log of Boring No. GMX-HRD-8

BORING LOCATION: North row, far east boring		ELEVATION AND DATUM: Not surveyed; datum is ground surface	
DRILLING CONTRACTOR: Fast-Tek Engineering Support Services		DATE STARTED: 5/10/00	DATE FINISHED: 5/10/00
DRILLING METHOD: Direct push		TOTAL DEPTH (ft.): 10.0	MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 5400		DEPTH TO WATER	FIRST 7.5   COMPL. ND
SAMPLING METHOD: Geoprobe DT21 dual tube soil sampler [4' x 1.125']		LOGGED BY: B. Turner	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL: Tom Gavigan	REG. NO. RG 6782

DEPTH (feet)	SAMPLES			OVM READING (ppm)	DESCRIPTION	REMARKS	
	Sample No.	Sample	Blows/ Foot		NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: Not surveyed		
1	GMX-HRD8-1.0			0	LEAN CLAY (CL): black (2.5Y 2.5/1), moist, 75% fines, 15% organic material, 10% fine to medium sand, low plasticity, firm	OVM = Thermo Environmental Instruments 580B PID calibrated with 100 ppm isobutylene standard	
2	GMX-HRD8-1.5			0	black (N 2.5/), 95% fines, 5% fine sand, hard		
4					pale yellow (5Y 7/3) light yellowish brown (2.5Y 6/4)		
5	GMX-HRD8-5.0			0			
6	GMX-HRD8-5.5			0	SANDY LEAN CLAY (CL): light yellowish brown (2.5Y 6/4), moist, 70% fines, 30% fine sand, low plasticity, firm		
8					CLAYEY SAND (SC): olive gray (5Y 4/2), wet, 70% fine sand, 30% low plasticity fines		
9	GMX-HRD8-9.0						
10	GMX-HRD8-9.5						
10					Bottom of boring at 10.0 feet		Borehole destroyed using Type I-II neat cement grout placed from total depth to one foot below ground surface. From one foot below ground surface to surface, borehole backfilled with soil.
11							
12							
13							
14							

OAKBORE (REV 5/00)



## Attachment C

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# Laboratory Analytical Results –Friedman & Bruya

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Jensen, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

May 26, 2000

Ann Holbrow, Project Manager  
Geomatrix Consultants, Inc.  
2101 Webster Street, 12th Floor  
Oakland, CA 94612

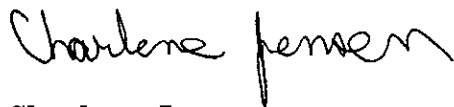
Dear Ms. Holbrow:

Included are the results from the testing of material submitted on May 11, 2000 from your 6262.000.0 project. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Charlene Jensen  
Chemist

Enclosures  
GMC0526R.DOC



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2000 by Friedman & Bruya, Inc. from the Geomatrix Consultants, Inc. 6262.000.0 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Geomatrix Consultants, Inc.</u>
005062-01	GMX-HRD1-1.0
005062-02	GMX-HRD1-5.0
005062-03	GMX-HRD1-9.0
005062-04	GMX-HRD5-1.0
005062-05	GMX-HRD5-5.0
005062-06	GMX-HRD5-9.0
005062-07	GMX-HRD6-1.0
005062-08	GMX-HRD6-5.0
005062-09	GMX-HRD6-9.0
005062-10	GMX-HRD2-1.0
005062-11	GMX-HRD2-5.0
005062-12	GMX-HRD2-9.0
005062-13	GMX-HRD3-1.0
005062-14	GMX-HRD3-5.0
005062-15	GMX-HRD3-9.0
005062-16	GMX-HRD7-1.0
005062-17	GMX-HRD7-5.0
005062-18	GMX-HRD7-9.0
005062-19	GMX-HRD8-1.0
005062-20	GMX-HRD8-5.0
005062-21	GMX-HRD8-8.5
005062-22	GMX-HRD4-1.0
005062-23	GMX-HRD4-5.0
005062-24	GMX-HRD4-9.0

For analysis by method 8260B internal standards were outside of normal acceptance criteria in several samples due to matrix interference. Results and/or reporting limits for affected analytes are reported as estimates. In addition, acetone and methylene chloride were detected in several samples due to laboratory contamination. All other quality control requirements were within acceptable limits.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00

Date Received: 05/11/00

Project: 6262.000.0

Date Extracted: 05/15/00

Date Analyzed: 05/23/00

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING EPA METHOD 8015M**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as  $\mu\text{g/g}$  (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Motor Oil Range</u>	<u>Surrogate</u> (% Recovery)
GMX-HRD1-1.0 005062-01	<50	89
GMX-HRD1-5.0 005062-02	<50	82
GMX-HRD5-1.0 005062-04	<50	86
GMX-HRD5-5.0 005062-05	<50	82
GMX-HRD6-1.0 005062-07	130	84
GMX-HRD6-5.0 005062-08	<50	93
GMX-HRD2-1.0 005062-10	<50	84
GMX-HRD2-5.0 005062-11	<50	86
GMX-HRD3-1.0 005062-13	<50	85
GMX-HRD3-5.0 005062-14	<50	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00  
Date Received: 05/11/00  
Project: 6262.000.0  
Date Extracted: 05/15/00  
Date Analyzed: 05/23/00

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING EPA METHOD 8015M**

**Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as  $\mu\text{g/g}$  (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Motor Oil Range</u>	<u>Surrogate</u> (% Recovery)
GMX-HRD7-1.0 005062-16	<50	77
GMX-HRD7-5.0 005062-17	<50	84
GMX-HRD8-1.0 005062-19	<50	83
GMX-HRD8-5.0 005062-20	<50	82
GMX-HRD4-1.0 005062-22	<50	98
GMX-HRD4-5.0 005062-23	<50	83
Method Blank	<50	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD1-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-01
Date Analyzed:	05/11/00	Data File:	051129.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	115	50	150
1,2-Dichloroethane-d4	120	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	130 I	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	310 fbs	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5 I
Chloroform	<5	Bromobenzene	<5 I
2-Butanone (MEK)	55	1,3,5-Trimethylbenzene	<5 I
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5 I
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5 I
1,1-Dichloropropene	<5	2-Chlorotoluene	<5 I
Carbon Tetrachloride	<5	4-Chlorotoluene	<5 I
Benzene	<5	tert-Butylbenzene	<5 I
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5 I
1,2-Dichloropropane	<5	sec-Butylbenzene	<5 I
Bromodichloromethane	<5	p-Isopropyltoluene	21 I
Dibromomethane	<5	1,3-Dichlorobenzene	<5 I
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5 I
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5 I
Toluene	830 ve	1,2-Dibromo-3-chloropropane	<5 I
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5 I
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5 I
2-Hexanone	<50	Naphthalene	<5 I
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5 I

fbs - The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

I - The internal standard associated with the analyte is out of control limits. The reporting limit or reported concentration is an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD1-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-01 1g
Date Analyzed:	05/12/00	Data File:	051210.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	104	50	150
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	121	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<25	Tetrachloroethene	<25
Chloromethane	<25	Dibromochloromethane	<25
Vinyl chloride	<25	1,2-Dibromoethane (EDB)	<25
Bromomethane	<25	Chlorobenzene	<25
Chloroethane	<25	Ethylbenzene	<25
Trichlorofluoromethane	<25	1,1,1,2-Tetrachloroethane	<25
Acetone	270 fbs	m,p-Xylene	<25
1,1-Dichloroethene	<25	o-Xylene	<25
Methylene chloride	<250	Styrene	<25
1,1-Dichloroethane	<25	Isopropylbenzene	<25
2,2-Dichloropropane	<25	Bromoform	<25
cis-1,2-Dichloroethene	<25	n-Propylbenzene	<25
Chloroform	<25	Bromobenzene	<25
2-Butanone (MEK)	<250	1,3,5-Trimethylbenzene	<25
1,2-Dichloroethane (EDC)	<25	1,1,2,2-Tetrachloroethane	<25
1,1,1-Trichloroethane	<25	1,2,3-Trichloropropane	<25
1,1-Dichloropropene	<25	2-Chlorotoluene	<25
Carbon Tetrachloride	<25	4-Chlorotoluene	<25
Benzene	<25	tert-Butylbenzene	<25
Trichloroethene	<25	1,2,4-Trimethylbenzene	<25
1,2-Dichloropropane	<25	sec-Butylbenzene	<25
Bromodichloromethane	<25	p-Isopropyltoluene	110
Dibromomethane	<25	1,3-Dichlorobenzene	<25
4-Methyl-2-pentanone	<250	1,4-Dichlorobenzene	<25
cis-1,3-Dichloropropene	<25	1,2-Dichlorobenzene	<25
Toluene	810	1,2-Dibromo-3-chloropropane	<25
trans-1,3-Dichloropropene	<25	1,2,4-Trichlorobenzene	<25
1,1,2-Trichloroethane	<25	Hexachlorobutadiene	<25
2-Hexanone	<250	Naphthalene	<25
1,3-Dichloropropane	<25	1,2,3-Trichlorobenzene	<25

fbs - The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

Note: The sample was diluted due the presence of high levels of material. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD1-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-02
Date Analyzed:	05/11/00	Data File:	051130.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	102	50	150
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: GMX-HRD5-1.0	Client: Geomatrix Consultants, Inc.
Date Received: 05/11/00	Project: 6262.000.0
Date Extracted: 05/11/00	Lab ID: 005062-04
Date Analyzed: 05/12/00	Data File: 051131.D
Matrix: Soil	Instrument: 5972 -Ins
Units: ug/kg (ppb)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	101	50	150
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	119	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	56 fb	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	7
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD5-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-05
Date Analyzed:	05/12/00	Data File:	051132.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	102	50	150
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD6-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-07
Date Analyzed:	05/12/00	Data File:	051133.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	108	50	150
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	85	50	150
4-Bromofluorobenzene	214 vo, I	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	300 fbs	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5 I
Chloroform	<5	Bromobenzene	<5 I
2-Butanone (MEK)	65	1,3,5-Trimethylbenzene	<5 I
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5 I
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5 I
1,1-Dichloropropene	<5	2-Chlorotoluene	<5 I
Carbon Tetrachloride	<5	4-Chlorotoluene	<5 I
Benzene	<5	tert-Butylbenzene	<5 I
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5 I
1,2-Dichloropropane	<5	sec-Butylbenzene	<5 I
Bromodichloromethane	<5	p-Isopropyltoluene	26 I
Dibromomethane	<5	1,3-Dichlorobenzene	<5 I
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5 I
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5 I
Toluene	12	1,2-Dibromo-3-chloropropane	<5 I
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5 I
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5 I
2-Hexanone	<50	Naphthalene	<5 I
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5 I

fbs - The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

I - The internal standard associated with the analyte is out of control limits. The reporting limit or reported concentration is an estimate.

vo - The value reported fell outside of normal control limits established for the analyte.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD6-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-08
Date Analyzed:	05/12/00	Data File:	051134.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	105	50	150
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD2-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-10
Date Analyzed:	05/12/00	Data File:	051136.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	106	50	150
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	119	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	110 fbs	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	99
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fbs - The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: GMX-HRD2-5.0	Client: Geomatrix Consultants, Inc.
Date Received: 05/11/00	Project: 6262.000.0
Date Extracted: 05/11/00	Lab ID: 005062-11
Date Analyzed: 05/12/00	Data File: 051137.D
Matrix: Soil	Instrument: 5972 -Ins
Units: ug/kg (ppb)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	104	50	150
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	<50	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD3-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-13
Date Analyzed:	05/12/00	Data File:	051138.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	104	50	150
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	129	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	60 fb	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	59 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD3-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-14
Date Analyzed:	05/12/00	Data File:	051139.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	107	50	150
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	67 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD7-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-16
Date Analyzed:	05/12/00	Data File:	051140.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	104	50	150
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	54 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: GMX-HRD7-5.0	Client: Geomatrix Consultants, Inc.
Date Received: 05/11/00	Project: 6262.000.0
Date Extracted: 05/11/00	Lab ID: 005062-17
Date Analyzed: 05/12/00	Data File: 051141.D
Matrix: Soil	Instrument: 5972 -Ins
Units: ug/kg (ppb)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	105	50	150
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	107	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	80 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD8-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-19
Date Analyzed:	05/12/00	Data File:	051142.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	106	50	150
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	52 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: GMX-HRD8-5.0	Client: Geomatrix Consultants, Inc.
Date Received: 05/11/00	Project: 6262.000.0
Date Extracted: 05/11/00	Lab ID: 005062-20
Date Analyzed: 05/12/00	Data File: 051143.D
Matrix: Soil	Instrument: 5972 -Ins
Units: ug/kg (ppb)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	103	50	150
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	84 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD4-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-22
Date Analyzed:	05/12/00	Data File:	051144.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	105	50	150
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	91	50	150
4-Bromofluorobenzene	126	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	73 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	GMX-HRD4-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	005062-23
Date Analyzed:	05/12/00	Data File:	051145.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	103	50	150
1,2-Dichloroethane-d4	108	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	<50	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	70 fb	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

fb - The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Geomatrix Consultants, Inc.
Date Received:	Not Applicable	Project:	6262.000.0
Date Extracted:	05/11/00	Lab ID:	00-330 mb2
Date Analyzed:	05/11/00	Data File:	051128.D
Matrix:	Soil	Instrument:	5972 -Ins
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	105	50	150
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration ug/kg (ppb)	Compounds:	Concentration ug/kg (ppb)
Dichlorodifluoromethane	<5	Tetrachloroethene	<5
Chloromethane	<5	Dibromochloromethane	<5
Vinyl chloride	<5	1,2-Dibromoethane (EDB)	<5
Bromomethane	<5	Chlorobenzene	<5
Chloroethane	<5	Ethylbenzene	<5
Trichlorofluoromethane	<5	1,1,1,2-Tetrachloroethane	<5
Acetone	68	m,p-Xylene	<5
1,1-Dichloroethene	<5	o-Xylene	<5
Methylene chloride	52	Styrene	<5
1,1-Dichloroethane	<5	Isopropylbenzene	<5
2,2-Dichloropropane	<5	Bromoform	<5
cis-1,2-Dichloroethene	<5	n-Propylbenzene	<5
Chloroform	<5	Bromobenzene	<5
2-Butanone (MEK)	<50	1,3,5-Trimethylbenzene	<5
1,2-Dichloroethane (EDC)	<5	1,1,2,2-Tetrachloroethane	<5
1,1,1-Trichloroethane	<5	1,2,3-Trichloropropane	<5
1,1-Dichloropropene	<5	2-Chlorotoluene	<5
Carbon Tetrachloride	<5	4-Chlorotoluene	<5
Benzene	<5	tert-Butylbenzene	<5
Trichloroethene	<5	1,2,4-Trimethylbenzene	<5
1,2-Dichloropropane	<5	sec-Butylbenzene	<5
Bromodichloromethane	<5	p-Isopropyltoluene	<5
Dibromomethane	<5	1,3-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,4-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dichlorobenzene	<5
Toluene	<5	1,2-Dibromo-3-chloropropane	<5
trans-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<5
1,1,2-Trichloroethane	<5	Hexachlorobutadiene	<5
2-Hexanone	<50	Naphthalene	<5
1,3-Dichloropropane	<5	1,2,3-Trichlorobenzene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD1-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-01 1/10
Date Analyzed:	05/19/00	Data File:	051925.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	96	50	150
Benzo(a)anthracene-d12	108	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	60
Pyrene	<50
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	<50
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	<50
Indeno(1,2,3-cd)pyrene	<50
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	<50

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD1-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-02
Date Analyzed:	05/17/00	Data File:	051640.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	61	50	150
Benzo(a)anthracene-d12	72	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD5-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-04 1/10
Date Analyzed:	05/19/00	Data File:	051923.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	101	50	150
Benzo(a)anthracene-d12	107	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	<50
Pyrene	<50
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	<50
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	<50
Indeno(1,2,3-cd)pyrene	<50
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	<50

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD5-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-05
Date Analyzed:	05/17/00	Data File:	051641.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	64	50	150
Benzo(a)anthracene-d12	75	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benzo(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD6-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-07 1/10
Date Analyzed:	05/20/00	Data File:	051929.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	87	50	150
Benzo(a)anthracene-d12	98	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	76
Pyrene	76
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	<50
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	<50
Indeno(1,2,3-cd)pyrene	<50
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	<50

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD6-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-08 qc
Date Analyzed:	05/17/00	Data File:	051642.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	65	50	150
Benzo(a)anthracene-d12	76	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benzo(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID: GMX-HRD2-1.0  
 Date Received: 05/11/00  
 Date Extracted: 05/15/00  
 Date Analyzed: 05/19/00  
 Matrix: Soil  
 Units: ug/kg (ppb)

Client: Geomatrix Consultants, Inc.  
 Project: 6262.000.0  
 Lab ID: 005062-10  
 Data File: 051927.D  
 Instrument: GCMS#2  
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	69	50	150
Benzo(a)anthracene-d12	83	50	150
Compounds:	Concentration ug/kg (ppb)		
Naphthalene	<5		
Acenaphthylene	<5		
Acenaphthene	<5		
Fluorene	<5		
Phenanthrene	26		
Anthracene	<5		
Fluoranthene	56		
Pyrene	56		
Benz(a)anthracene	29		
Chrysene	45		
Benzo(b)fluoranthene	29		
Benzo(k)fluoranthene	34		
Benzo(a)pyrene	38		
Indeno(1,2,3-cd)pyrene	28		
Dibenzo(a,h)anthracene	14		
Benzo(g,h,i)perylene	42		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD2-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-11
Date Analyzed:	05/17/00	Data File:	051649.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	65	50	150
Benzo(a)anthracene-d12	71	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID: GMX-HRD3-1.0  
 Date Received: 05/11/00  
 Date Extracted: 05/15/00  
 Date Analyzed: 05/19/00  
 Matrix: Soil  
 Units: ug/kg (ppb)

Client: Geomatrix Consultants, Inc.  
 Project: 6262.000.0  
 Lab ID: 005062-13  
 Data File: 051928.D  
 Instrument: GCMS#2  
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	71	50	150
Benzo(a)anthracene-d12	85	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD3-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-14
Date Analyzed:	05/17/00	Data File:	051650.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	61	50	150
Benzo(a)anthracene-d12	71	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID: GMX-HRD7-1.0  
 Date Received: 05/11/00  
 Date Extracted: 05/15/00  
 Date Analyzed: 05/19/00  
 Matrix: Soil  
 Units: ug/kg (ppb)

Client: Geomatrix Consultants, Inc.  
 Project: 6262.000.0  
 Lab ID: 005062-16 1/10  
 Data File: 051924.D  
 Instrument: GCMS#2  
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	104	50	150
Benzo(a)anthracene-d12	103	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	<50
Pyrene	<50
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	56
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	82
Indeno(1,2,3-cd)pyrene	58
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	63

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD7-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-17
Date Analyzed:	05/19/00	Data File:	051922.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	62	50	150
Benzo(a)anthracene-d12	77	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD8-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-19
Date Analyzed:	05/17/00	Data File:	051647.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	73	50	150
Benzo(a)anthracene-d12	76	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD8-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-20
Date Analyzed:	05/17/00	Data File:	051648.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	65	50	150
Benzo(a)anthracene-d12	75	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD4-1.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-22 1/10
Date Analyzed:	05/19/00	Data File:	051926.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	102	50	150
Benzo(a)anthracene-d12	101	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	<50
Pyrene	<50
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	<50
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	<50
Indeno(1,2,3-cd)pyrene	<50
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	<50

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	GMX-HRD4-5.0	Client:	Geomatrix Consultants, Inc.
Date Received:	05/11/00	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	005062-23
Date Analyzed:	05/17/00	Data File:	051646.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	60	50	150
Benzo(a)anthracene-d12	72	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benzo(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	Geomatrix Consultants, Inc.
Date Received:	Not Applicable	Project:	6262.000.0
Date Extracted:	05/15/00	Lab ID:	mb 00-347
Date Analyzed:	05/16/00	Data File:	051639.D
Matrix:	Soil	Instrument:	GCMS#2
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Anthracene-d10	63	50	150
Benzo(a)anthracene-d12	78	50	150

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00

Date Received: 05/11/00

Project: 6262.000.0

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING EPA METHOD 8015M**

Laboratory Code: 005062-08 (Duplicate) Silica gel

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Motor Oil	µg/g (ppm)	<50	<50	nm	0-20

Laboratory Code: 005062-08 (Matrix Spike) Silica gel

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Motor Oil	µg/g (ppm)	500	<50	102	96	60-187	6

Laboratory Code: Laboratory Control Sample Silica gel

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Motor Oil	µg/g (ppm)	500	110	97	67-140	13

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00

Date Received: 05/11/00

Project: 6262.000.0

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260B**

Laboratory Code: 005062-08 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
1,1-Dichloroethene	µg/kg (ppb)	<5	<5	nm	0-20
Benzene	µg/kg (ppb)	<5	<5	nm	0-20
Trichloroethene	µg/kg (ppb)	<5	<5	nm	0-20
Toluene	µg/kg (ppb)	<5	<5	nm	0-20
Chlorobenzene	µg/kg (ppb)	<5	<5	nm	0-20

Laboratory Code: 005062-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	µg/kg (ppb)	50	<5	101	100	50-150	1
Benzene	µg/kg (ppb)	50	<5	119	110	50-150	9
Trichloroethene	µg/kg (ppb)	50	<5	116	106	50-150	9
Toluene	µg/kg (ppb)	50	<5	118	110	50-150	7
Chlorobenzene	µg/kg (ppb)	50	<5	118	106	50-150	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	µg/kg (ppb)	50	83	89	50-150	6
Benzene	µg/kg (ppb)	50	93	96	50-150	4
Trichloroethene	µg/kg (ppb)	50	88	94	50-150	6
Toluene	µg/kg (ppb)	50	87	94	50-150	8
Chlorobenzene	µg/kg (ppb)	50	89	92	50-150	3



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00

Date Received: 05/11/00

Project: 6262.000.0

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR PNA'S BY EPA METHOD 8270C SIM**

Laboratory Code: 005062-08 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD	Acceptance Criteria
Napthalene	µg/kg (ppb)	<5	<5	nm	0-20
Acenaphthylene	µg/kg (ppb)	<5	<5	nm	0-20
Acenaphthene	µg/kg (ppb)	<5	<5	nm	0-20
Fluorene	µg/kg (ppb)	<5	<5	nm	0-20
Phenanthrene	µg/kg (ppb)	<5	<5	nm	0-20
Anthracene	µg/kg (ppb)	<5	<5	nm	0-20
Fluoranthene	µg/kg (ppb)	<5	<5	nm	0-20
Pyrene	µg/kg (ppb)	<5	<5	nm	0-20
Benz(a)anthracene	µg/kg (ppb)	<5	<5	nm	0-20
Chrysene	µg/kg (ppb)	<5	<5	nm	0-20
Benzo(b)fluoranthene	µg/kg (ppb)	<5	<5	nm	0-20
Benzo(k)fluoranthene	µg/kg (ppb)	<5	<5	nm	0-20
Benzo(a)pyrene	µg/kg (ppb)	<5	<5	nm	0-20
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	<5	<5	nm	0-20
Dibenzo(a,h)anthracene	µg/kg (ppb)	<5	<5	nm	0-20
Benzo(g,h,i)perylene	µg/kg (ppb)	<5	<5	nm	0-20

Laboratory Code: 005062-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
Napthalene	µg/kg (ppb)	170	<5	78	82	54-110	4
Acenaphthylene	µg/kg (ppb)	170	<5	81	83	58-114	3
Acenaphthene	µg/kg (ppb)	170	<5	82	85	58-112	4
Fluorene	µg/kg (ppb)	170	<5	80	88	59-113	9
Phenanthrene	µg/kg (ppb)	170	<5	78	82	62-110	5
Anthracene	µg/kg (ppb)	170	<5	74	77	61-111	3
Fluoranthene	µg/kg (ppb)	170	<5	78	82	63-114	5
Pyrene	µg/kg (ppb)	170	<5	78	85	59-110	9
Benz(a)anthracene	µg/kg (ppb)	170	<5	77	77	60-116	0
Chrysene	µg/kg (ppb)	170	<5	79	80	57-118	2
Benzo(b)fluoranthene	µg/kg (ppb)	170	<5	82	90	52-133	9
Benzo(k)fluoranthene	µg/kg (ppb)	170	<5	83	85	57-130	3
Benzo(a)pyrene	µg/kg (ppb)	170	<5	68	72	52-132	5
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	<5	65	69	54-112	6
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	<5	62	67	50-121	8
Benzo(g,h,i)perylene	µg/kg (ppb)	170	<5	62	66	40-114	6

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/26/00

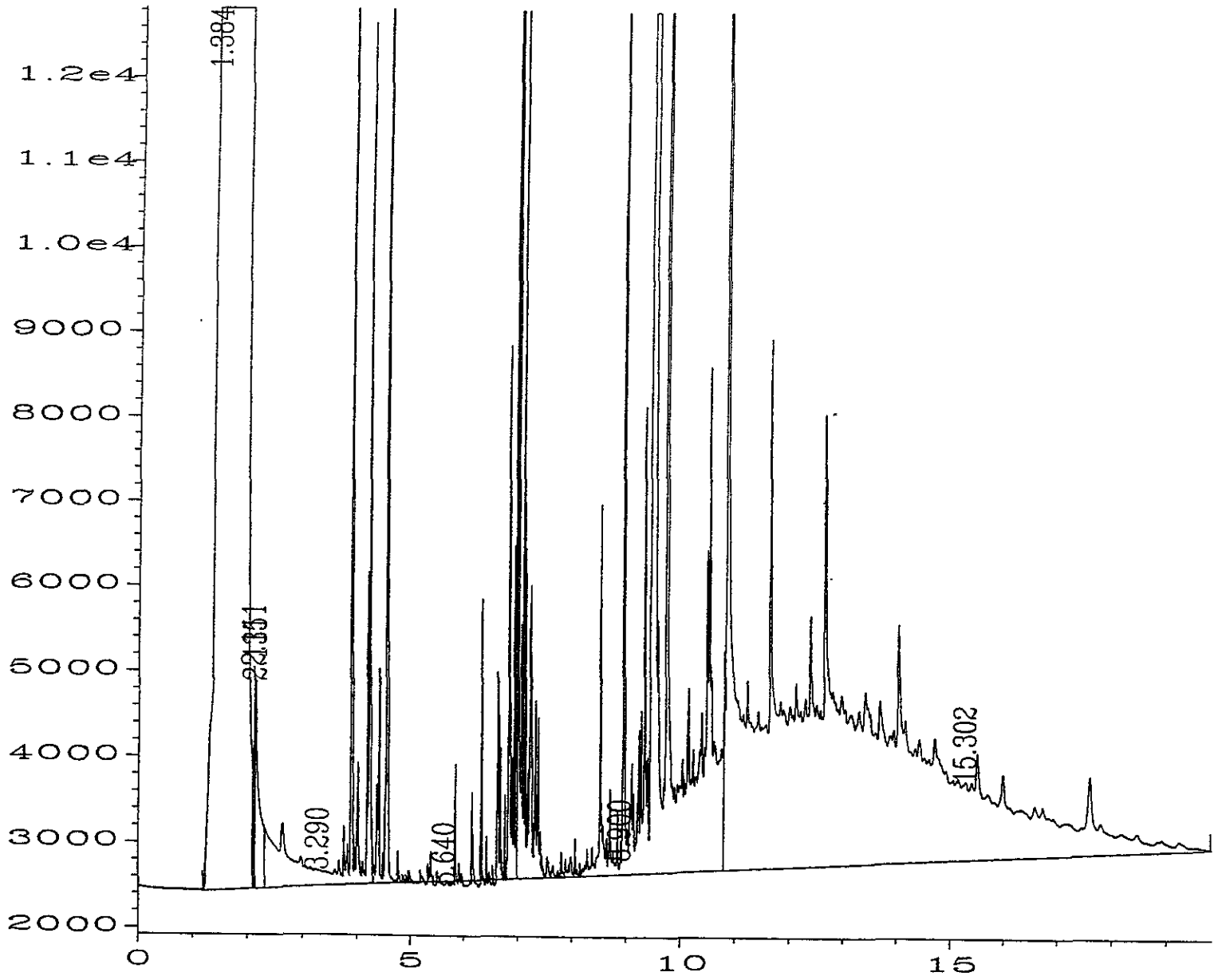
Date Received: 05/11/00

Project: 6262.000.0

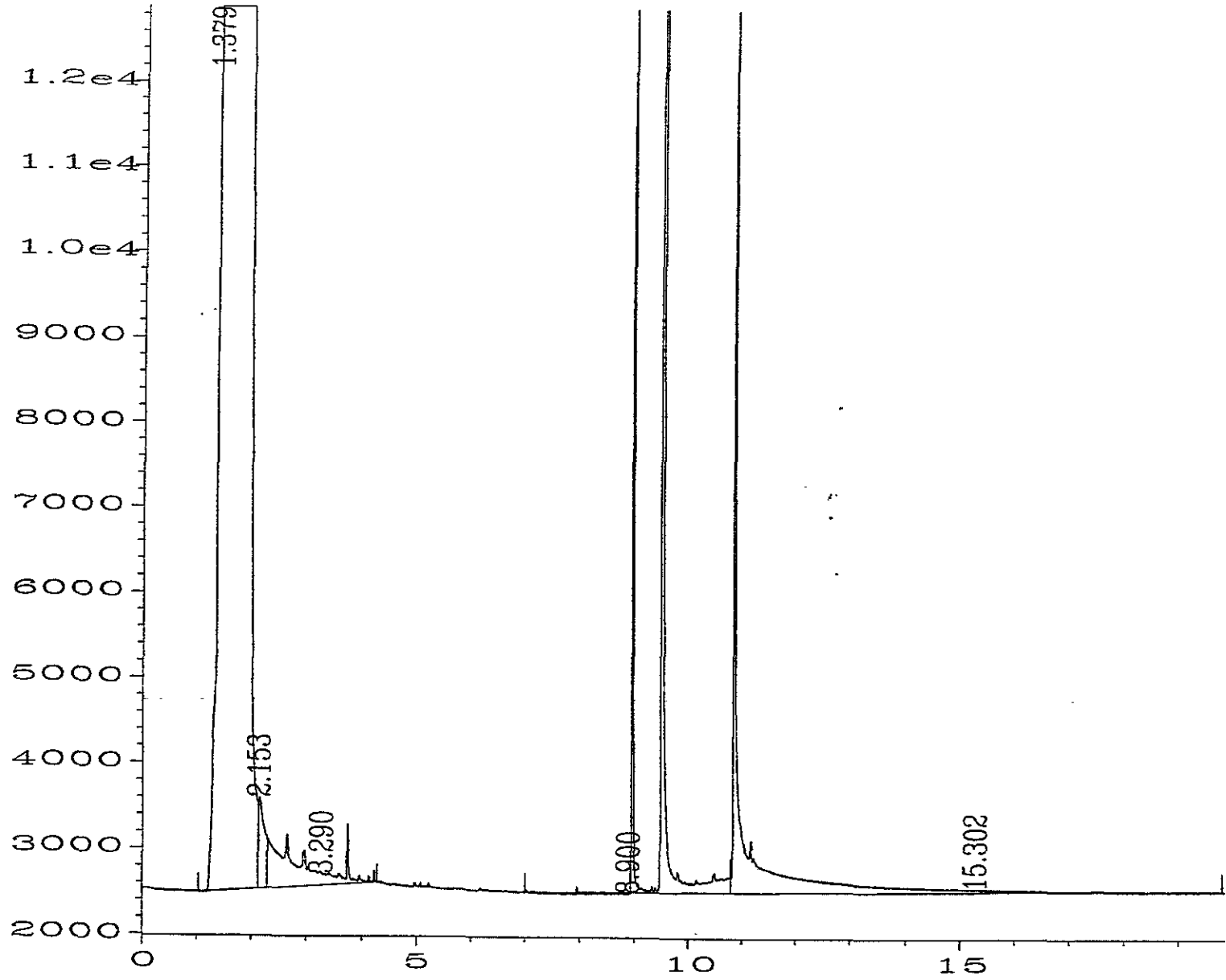
**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR PNA'S BY EPA METHOD 8270C SIM**

Laboratory Code: Laboratory Control Sample

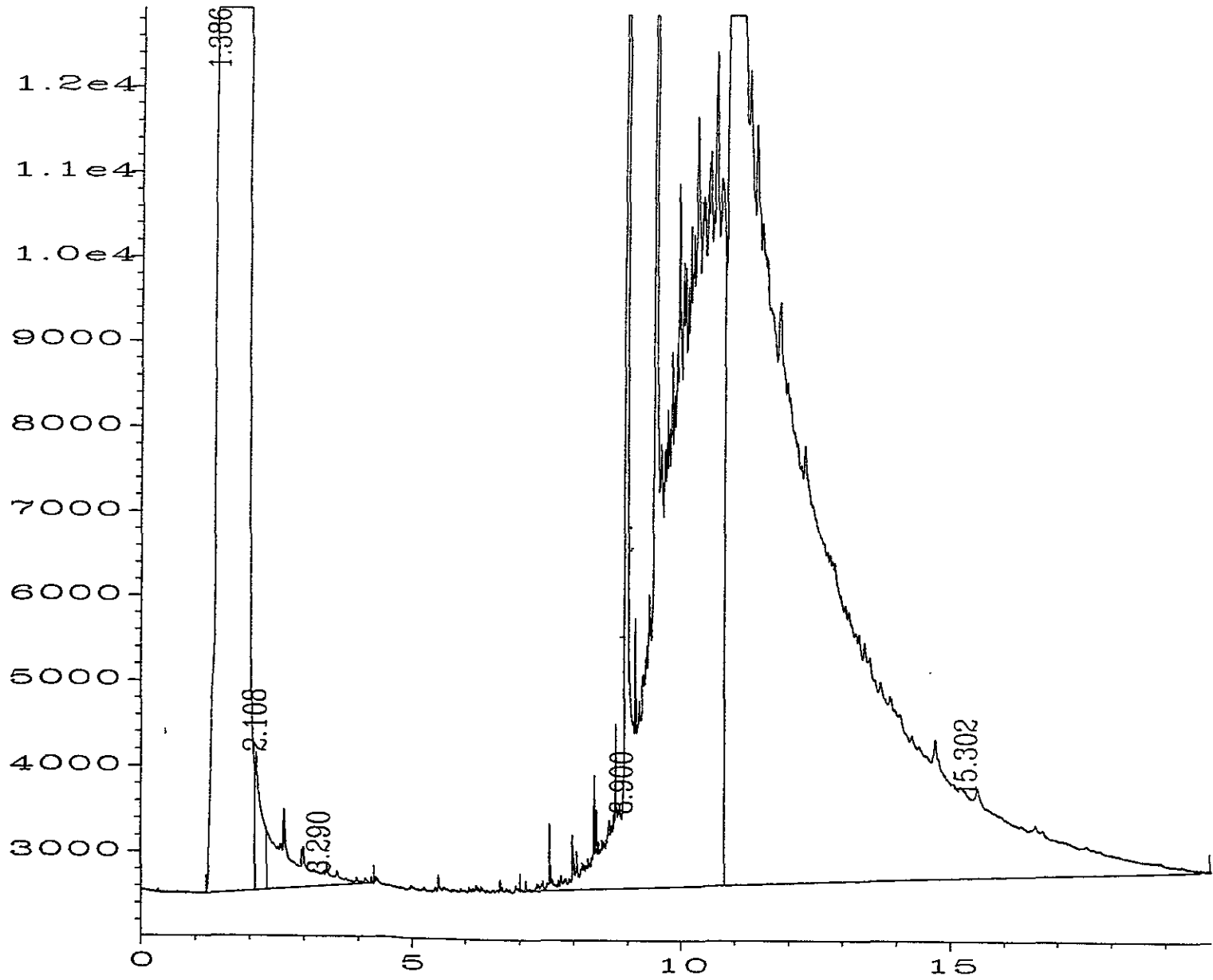
Analyte	Reporting	Spike	% Recovery	% Recovery	Acceptance	RPD
	Units	Level	LCS	LCSD	Criteria	
Napthalene	µg/kg (ppb)	170	82	82	51-124	1
Acenapthylene	µg/kg (ppb)	170	82	83	52-125	0
Acenapthene	µg/kg (ppb)	170	85	86	57-122	2
Fluorene	µg/kg (ppb)	170	83	85	55-126	2
Phenanthrene	µg/kg (ppb)	170	80	81	59-126	2
Anthracene	µg/kg (ppb)	170	73	75	45-134	2
Fluoranthene	µg/kg (ppb)	170	79	81	56-132	3
Pyrene	µg/kg (ppb)	170	79	85	54-125	7
Benz(a)anthracene	µg/kg (ppb)	170	78	85	51-130	9
Chrysene	µg/kg (ppb)	170	79	89	57-125	11
Benzo(b)fluoranthene	µg/kg (ppb)	170	85	84	54-135	1
Benzo(k)fluoranthene	µg/kg (ppb)	170	85	84	52-141	1
Benzo(a)pyrene	µg/kg (ppb)	170	67	69	38-140	3
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	79	80	58-122	2
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	77	81	58-130	5
Benzo(g,h,i)perylene	µg/kg (ppb)	170	77	79	54-124	2



Data File Name : C:\HPCHEM\6\DATA\05-23-00\016F0701.D  
 Operator : MC  
 Instrument : GC #6 GMX - HRD 6-1.D  
 Sample Name : 005062-07 SG  
 Run Time Bar Code :  
 Acquired on : 23 May 00 01:42 PM  
 Report Created on: 23 May 00 02:06 PM  
 Page Number : 1  
 Vial Number : 16  
 Injection Number : 1  
 Sequence Line : 7  
 Instrument Method: TPHD.MTH  
 Analysis Method : TPHD.MTH



Data File Name : C:\HPCHEM\6\DATA\05-23-00\009F0501.D  
 Operator : MC  
 Instrument : GC #6  
 Sample Name : 00-348 MB SG  
 Run Time Bar Code :  
 Acquired on : 23 May 00 10:19 AM  
 Report Created on: 23 May 00 10:43 AM  
 Page Number : 1  
 Vial Number : 9  
 Injection Number : 1  
 Sequence Line : 5  
 Instrument Method: TPHD.MTH  
 Analysis Method : TPHD.MTH



Data File Name : C:\HPCHEM\6\DATA\05-23-00\007F0301.D  
 Operator : MC  
 Instrument : GC #6  
 Sample Name : 500 MO 9-32  
 Run Time Bar Code :  
 Acquired on : 23 May 00 09:03 AM  
 Report Created on: 23 May 00 09:27 AM

Page Number : 1  
 Vial Number : 7  
 Injection Number : 1  
 Sequence Line : 3  
 Instrument Method: TPHD.MTH  
 Analysis Method : TPHD.MTH

005062

5/11/00

F+B

C.J.

A03

# Chain-of-Custody Record

003688

Date: 5/10/00

Page 1 of 2

Project No.: 6262.000.0

## ANALYSES

## REMARKS

Samplers (Signature):  
*Tom Davison*  
*Byron*

EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BTEX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015M (Gasoline)	Method 8015M (Diesel)	Method 8015M (Motor Oil)	Silica Gel Cleanup	Hold	MS/MSD
-----------------------------	----------------------------------	-----------------------------	-----------------	-----------------------------	---------------------------------	-------------------------	-----------------------	--------------------------	--------------------	------	--------

Additional Comments

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BTEX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015M (Gasoline)	Method 8015M (Diesel)	Method 8015M (Motor Oil)	Silica Gel Cleanup	Hold	MS/MSD	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preserved	Cooled	No. of Containers	Remarks
01. 5/10/00	0805	GMX-HR01-1.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
02.		0815 GMX-HR01-5.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
03		0825 GMX-HR01-9.0											X		S	N	N	Y	1	1 1/4" x 6" butyrate tube
04		0805 GMX-HR05-1.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
05		0915 GMX-HR05-5.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
06		0925 GMX-HR05-9.0											X		S	N	N	Y	1	1 1/4" x 6" butyrate tube
07		0935 GMX-HR06-1.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
08		0940 GMX-HR06-5.0				X	X			X	X		X		S	N	N	Y	1	1 1/4" x 12" butyrate tube
09		0950 GMX-HR06-9.0											X		S	N	N	Y	1	1 1/4" x 6" butyrate tube
10		1015 GMX-HR02-1.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
11		1025 GMX-HR02-5.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
12		1035 GMX-HR02-9.0											X		S	N	N	Y	1	1 1/4" x 6" butyrate tube
13		1050 GMX-HR03-1.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
14		1100 GMX-HR03-5.0				X	X			X	X				S	N	N	Y	1	1 1/4" x 6" butyrate tube
15		1110 GMX-HR03-9.0											X		S	N	N	Y	1	1 1/4" x 6" butyrate tube

Laboratory: Friedman + Bruya

Turnaround Time: STANDARD


Results to: Ann Holbrow

Total No. of Containers: 15

Relinquished by (Signature): *Tom Davison*  
 Printed Name: Tom Davison  
 Company: Geomatrix  
 Received by: T.E.L.  
 Printed Name: Tary Elias  
 Company: FBI

Date: 5/10/00  
 Time: 1615  
 Relinquished by (Signature):  
 Printed Name:  
 Company:  
 Received by:  
 Printed Name:  
 Company:

Date: 5/11/00  
 Time: 9.50  
 Relinquished by (Signature):  
 Printed Name:  
 Company:

Method of Shipment: FEDERAL EXPRESS  
 8200 7653 2431  
 Laboratory Comments and Log No.:  
  
**Geomatrix Consultants**  
 2101 Webster Street, 12th Floor - Oakland, CA 94612  
 Phone: 510-663-4100 • Fax: 510-663-4141

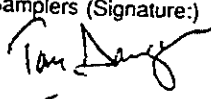
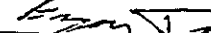
# Chain-of-Custody Record

003698

Date: 5/10/00

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A03

Project No.: 6262.000.0  
 Samplers (Signature):  
  


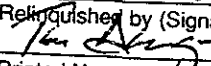
## ANALYSES


## REMARKS

Date	Time	Sample Number	EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BTEX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015M (Gasoline)	Method 8015M (Diesel)	Method 8015M (Motor Oil)	Silica Gel Cleanup	Hold	Soil (S), Water (W) Vapor (V), or Other (O)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments		
																			Additional Comments		
5/10/00	1145	GMX-HR07-1.0				X	X				X	X									
	1155	GMX-HR07-5.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1205	GMX-HR07-9.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1220	GMX-HR08-1.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1230	GMX-HR08-5.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1240	GMX-HR08-8.5				X	X				X	X									1 1/4" x 6" butyrate tube
	1315	GMX-HR04-1.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1325	GMX-HR04-5.0				X	X				X	X									1 1/4" x 6" butyrate tube
	1335	GMX-HR04-9.0				X	X				X	X									1 1/4" x 6" butyrate tube
																					1 1/4" x 6" butyrate tube

16  
17  
18  
19  
20  
21  
22  
23  
24

Laboratory: **Friedman + Bruya** Turnaround Time: **Standard** Results to: **Ann Holbrow** Total No. of Containers: **9**

Relinquished by (Signature): 	Date: 5/10/00	Relinquished by (Signature):	Date:	Relinquished by (Signature):	Date:	Method of Shipment: <b>TRACKING No:</b>
Printed Name: <b>Tom Davy</b>	Time: 1615	Printed Name:	Time:	Printed Name:	Time:	<b>Federal Express 8200 7653 2431</b>
Company: <b>Geomatrix</b>		Company:		Company:		Laboratory Comments and Log. No.:
Received by: <b>T. Elias</b>	Date: 5/11/00	Received by:	Date:	Received by:	Date:	
Printed Name: <b>Tony Elias</b>	Time: 9.50	Printed Name:	Time:	Printed Name:	Time:	
Company: <b>FBI</b>		Company:		Company:		

 **Geomatrix Consultants**  
 2101 Webster Street, 12th Floor • Oakland, CA 94612  
 Phone: 510-663-4100 • Fax: 510-663-4141

Attachment D

---

Laboratory Analytical Results  
–Chromalab



**Geomatrix Consultants**


2101 Webster Street, 12th Floor  
Oakland, CA 94612

Attn.: Ann Holbrow

Attached is our report for your samples received on Wednesday May 10, 2000  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after June 9, 2000  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919. You can also contact me via email.  
My email address is: [asalimpour@chromalab.com](mailto:asalimpour@chromalab.com)

Sincerely,



Afsaneh Salimpour

## Organochlorine Pesticides Analysis

### Geomatrix Consultants

✉ 2101 Webster Street, 12th Floor  
Oakland, CA 94612

Attn: Ann Holbrow

Phone: (510) 663-4100 Fax: (510) 663-4141

Project #: 6262.000.0

Project:

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
GMX-HRD1-1.5	Soil	05/10/2000 08:10	1
GMX-HRD1-5.5	Soil	05/10/2000 08:20	2
GMX-HRD5-1.5	Soil	05/10/2000 09:10	4
GMX-HRD5-5.5	Soil	05/10/2000 09:20	5
GMX-HRD6-1.5	Soil	05/10/2000 09:38	7
GMX-HRD6-5.5	Soil	05/10/2000 09:45	8
GMX-HRD2-1.5	Soil	05/10/2000 10:20	10
GMX-HRD2-5.5	Soil	05/10/2000 10:30	11
GMX-HRD3-1.5	Soil	05/10/2000 10:55	13
GMX-HRD3-5.5	Soil	05/10/2000 11:05	14
GMX-HRD7-1.5	Soil	05/10/2000 11:50	16
GMX-HRD7-5.5	Soil	05/10/2000 12:00	17
GMX-HRD8-1.5	Soil	05/10/2000 12:25	19
GMX-HRD8-5.5	Soil	05/10/2000 12:35	20
GMX-HRD4-1.5	Soil	05/10/2000 13:20	22
GMX-HRD4-5.5	Soil	05/10/2000 13:30	23

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: **Geomatrix Consultants**

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD1-1.5</b>	Lab Sample ID: <b>2000-05-0244-001</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 08:10	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 17:12	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 17:12	
4,4'-DDE	8.1	2.0	ug/Kg	1.00	05/15/2000 17:12	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 17:12	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 17:12	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 17:12	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 17:12	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 17:12	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 17:12	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 17:12	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 17:12	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	58.3	50-125	%	1.00	05/15/2000 17:12	
Decachlorobiphenyl	61.6	46-142	%	1.00	05/15/2000 17:12	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD1-5.5</b>	Lab Sample ID: <b>2000-05-0244-002</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 08:20	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 23:48	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 23:48	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 23:48	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 23:48	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 23:48	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 23:48	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 23:48	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 23:48	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 23:48	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 23:48	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	96.8	50-125	%	1.00	05/15/2000 23:48	
Decachlorobiphenyl	104.4	46-142	%	1.00	05/15/2000 23:48	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD5-1.5</b>	Lab Sample ID: <b>2000-05-0244-004</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 09:10	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 04:12	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 04:12	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 04:12	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 04:12	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 04:12	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 04:12	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 04:12	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 04:12	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 04:12	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 04:12	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	94.8	50-125	%	1.00	05/16/2000 04:12	
Decachlorobiphenyl	111.8	46-142	%	1.00	05/16/2000 04:12	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD5-5.5</b>	Lab Sample ID: <b>2000-05-0244-005</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 09:20	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 00:21	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 00:21	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 00:21	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 00:21	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:21	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 00:21	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 00:21	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 00:21	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 00:21	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 00:21	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	90.5	50-125	%	1.00	05/16/2000 00:21	
Decachlorobiphenyl	96.5	46-142	%	1.00	05/16/2000 00:21	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD6-1.5</b>	Lab Sample ID: <b>2000-05-0244-007</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 09:38	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13
Sample/Analysis Flag sdo,lrn ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Dieldrin	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Endrin aldehyde	ND	100	ug/Kg	10.00	05/15/2000 17:45	
Endrin	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Heptachlor	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Heptachlor epoxide	ND	20	ug/Kg	10.00	05/15/2000 17:45	
4,4'-DDT	ND	100	ug/Kg	10.00	05/15/2000 17:45	
4,4'-DDE	ND	20	ug/Kg	10.00	05/15/2000 17:45	
4,4'-DDD	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Endosulfan I	ND	100	ug/Kg	10.00	05/15/2000 17:45	
Endosulfan II	ND	100	ug/Kg	10.00	05/15/2000 17:45	
alpha-BHC	ND	20	ug/Kg	10.00	05/15/2000 17:45	
beta-BHC	ND	20	ug/Kg	10.00	05/15/2000 17:45	
gamma-BHC (Lindane)	ND	20	ug/Kg	10.00	05/15/2000 17:45	
delta-BHC	ND	20	ug/Kg	10.00	05/15/2000 17:45	
Endosulfan sulfate	ND	100	ug/Kg	10.00	05/15/2000 17:45	
4,4'-Methoxychlor	ND	100	ug/Kg	10.00	05/15/2000 17:45	
Toxaphene	ND	1000	ug/Kg	10.00	05/15/2000 17:45	
alpha-Chlordane	ND	500	ug/Kg	10.00	05/15/2000 17:45	
gamma-Chlordane	ND	500	ug/Kg	10.00	05/15/2000 17:45	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	ND	50-125	ug/Kg	10.00	05/15/2000 17:45	
Decachlorobiphenyl	ND	46-142	ug/Kg	10.00	05/15/2000 17:45	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD6-5.5</b>	Lab Sample ID: <b>2000-05-0244-008</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 09:45	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 18:18	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 18:18	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 18:18	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 18:18	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:18	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 18:18	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 18:18	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 18:18	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 18:18	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 18:18	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	89.8	50-125	%	1.00	05/15/2000 18:18	
Decachlorobiphenyl	92.3	46-142	%	1.00	05/15/2000 18:18	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD2-1.5</b>	Lab Sample ID: <b>2000-05-0244-010</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 10:20	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 18:51	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 18:51	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 18:51	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 18:51	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 18:51	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 18:51	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 18:51	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 18:51	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 18:51	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 18:51	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	55.6	50-125	%	1.00	05/15/2000 18:51	
Decachlorobiphenyl	65.8	46-142	%	1.00	05/15/2000 18:51	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD2-5.5</b>	Lab Sample ID: <b>2000-05-0244-011</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 10:30	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 19:24	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 19:24	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 19:24	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 19:24	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:24	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 19:24	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 19:24	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 19:24	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 19:24	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 19:24	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	69.8	50-125	%	1.00	05/15/2000 19:24	
Decachlorobiphenyl	55.1	46-142	%	1.00	05/15/2000 19:24	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD3-1.5</b>	Lab Sample ID: <b>2000-05-0244-013</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 10:55	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 19:57	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 19:57	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 19:57	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 19:57	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 19:57	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 19:57	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 19:57	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 19:57	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 19:57	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 19:57	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	78.8	50-125	%	1.00	05/15/2000 19:57	
Decachlorobiphenyl	82.9	46-142	%	1.00	05/15/2000 19:57	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD3-5.5</b>	Lab Sample ID: <b>2000-05-0244-014</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 11:05	Extracted: 05/12/2000 08:31
Matrix: Soil	QC-Batch: 2000/05/12-01.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Dieldrin	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/15/2000 20:30	
Endrin	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Heptachlor	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
4,4'-DDT	ND	10	ug/Kg	1.00	05/15/2000 20:30	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Endosulfan I	ND	10	ug/Kg	1.00	05/15/2000 20:30	
Endosulfan II	ND	10	ug/Kg	1.00	05/15/2000 20:30	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
beta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
delta-BHC	ND	2.0	ug/Kg	1.00	05/15/2000 20:30	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/15/2000 20:30	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/15/2000 20:30	
Toxaphene	ND	100	ug/Kg	1.00	05/15/2000 20:30	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 20:30	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/15/2000 20:30	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	56.4	50-125	%	1.00	05/15/2000 20:30	
Decachlorobiphenyl	65.5	46-142	%	1.00	05/15/2000 20:30	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD7-1.5</b>	Lab Sample ID: <b>2000-05-0244-016</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 11:50	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 00:54	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 00:54	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 00:54	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 00:54	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 00:54	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 00:54	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 00:54	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 00:54	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 00:54	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 00:54	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	91.1	50-125	%	1.00	05/16/2000 00:54	
Decachlorobiphenyl	100.7	46-142	%	1.00	05/16/2000 00:54	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD7-5.5</b>	Lab Sample ID: <b>2000-05-0244-017</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 12:00	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 01:27	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 01:27	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 01:27	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 01:27	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 01:27	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 01:27	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 01:27	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 01:27	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 01:27	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 01:27	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	89.9	50-125	%	1.00	05/16/2000 01:27	
Decachlorobiphenyl	99.0	46-142	%	1.00	05/16/2000 01:27	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD8-1.5</b>	Lab Sample ID: <b>2000-05-0244-019</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 12:25	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 02:00	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 02:00	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 02:00	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 02:00	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:00	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 02:00	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 02:00	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 02:00	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 02:00	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 02:00	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	97.9	50-125	%	1.00	05/16/2000 02:00	
Decachlorobiphenyl	109.9	46-142	%	1.00	05/16/2000 02:00	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD8-5.5</b>	Lab Sample ID: <b>2000-05-0244-020</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 12:35	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 02:33	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 02:33	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 02:33	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 02:33	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 02:33	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 02:33	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 02:33	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 02:33	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 02:33	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 02:33	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	96.2	50-125	%	1.00	05/16/2000 02:33	
Decachlorobiphenyl	102.5	46-142	%	1.00	05/16/2000 02:33	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD4-1.5</b>	Lab Sample ID: <b>2000-05-0244-022</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 13:20	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 03:06	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 03:06	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 03:06	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 03:06	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:06	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 03:06	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 03:06	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 03:06	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 03:06	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 03:06	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	92.9	50-125	%	1.00	05/16/2000 03:06	
Decachlorobiphenyl	103.2	46-142	%	1.00	05/16/2000 03:06	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: **Geomatrix Consultants**  
Attn.: Ann Holbrow

Test Method: 8081  
Prep Method: 3550/8081

## Organochlorine Pesticides Analysis

Sample ID: <b>GMX-HRD4-5.5</b>	Lab Sample ID: <b>2000-05-0244-023</b>
Project: 6262.000.0	Received: 05/10/2000 17:45
Sampled: 05/10/2000 13:30	Extracted: 05/15/2000 13:03
Matrix: Soil	QC-Batch: 2000/05/15-03.13

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Dieldrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Endrin aldehyde	ND	10	ug/Kg	1.00	05/16/2000 03:39	
Endrin	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Heptachlor	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Heptachlor epoxide	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
4,4'-DDT	ND	10	ug/Kg	1.00	05/16/2000 03:39	
4,4'-DDE	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
4,4'-DDD	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Endosulfan I	ND	10	ug/Kg	1.00	05/16/2000 03:39	
Endosulfan II	ND	10	ug/Kg	1.00	05/16/2000 03:39	
alpha-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
beta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
delta-BHC	ND	2.0	ug/Kg	1.00	05/16/2000 03:39	
Endosulfan sulfate	ND	10	ug/Kg	1.00	05/16/2000 03:39	
4,4'-Methoxychlor	ND	10	ug/Kg	1.00	05/16/2000 03:39	
Toxaphene	ND	100	ug/Kg	1.00	05/16/2000 03:39	
alpha-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 03:39	
gamma-Chlordane	ND	50	ug/Kg	1.00	05/16/2000 03:39	
<b>Surrogate(s)</b>						
2,4,5,6-Tetrachloro-m-xylene	84.4	50-125	%	1.00	05/16/2000 03:39	
Decachlorobiphenyl	96.3	46-142	%	1.00	05/16/2000 03:39	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Batch QC Report Organochlorine Pesticides Analysis

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 2000/05/12-01.13</b>
MB: 2000/05/12-01.13-001		Date Extracted: 05/12/2000 08:31

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	05/13/2000 01:57	
Dieldrin	ND	2.0	ug/Kg	05/13/2000 01:57	
Endrin aldehyde	ND	10	ug/Kg	05/13/2000 01:57	
Endrin	ND	2.0	ug/Kg	05/13/2000 01:57	
Heptachlor	ND	2.0	ug/Kg	05/13/2000 01:57	
Heptachlor epoxide	ND	2.0	ug/Kg	05/13/2000 01:57	
4,4'-DDT	ND	10	ug/Kg	05/13/2000 01:57	
4,4'-DDE	ND	2.0	ug/Kg	05/13/2000 01:57	
4,4'-DDD	ND	2.0	ug/Kg	05/13/2000 01:57	
Endosulfan I	ND	10	ug/Kg	05/13/2000 01:57	
Endosulfan II	ND	10	ug/Kg	05/13/2000 01:57	
alpha-BHC	ND	2.0	ug/Kg	05/13/2000 01:57	
beta-BHC	ND	2.0	ug/Kg	05/13/2000 01:57	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	05/13/2000 01:57	
delta-BHC	ND	2.0	ug/Kg	05/13/2000 01:57	
Endosulfan sulfate	ND	10	ug/Kg	05/13/2000 01:57	
4,4'-Methoxychlor	ND	10	ug/Kg	05/13/2000 01:57	
Toxaphene	ND	100	ug/Kg	05/13/2000 01:57	
alpha-Chlordane	ND	50	ug/Kg	05/13/2000 01:57	
gamma-Chlordane	ND	50	ug/Kg	05/13/2000 01:57	
<b>Surrogate(s)</b>					
2,4,5,6-Tetrachloro-m-xylene	93.0	50-125	%	05/13/2000 01:57	
Decachlorobiphenyl	107.8	46-142	%	05/13/2000 01:57	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Batch QC Report

Organochlorine Pesticides Analysis

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 2000/05/15-03.13</b>
MB: 2000/05/15-03.13-001		Date Extracted: 05/15/2000 13:03

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Aldrin	ND	2.0	ug/Kg	05/15/2000 21:03	
Dieldrin	ND	2.0	ug/Kg	05/15/2000 21:03	
Endrin aldehyde	ND	10	ug/Kg	05/15/2000 21:03	
Endrin	ND	2.0	ug/Kg	05/15/2000 21:03	
Heptachlor	ND	2.0	ug/Kg	05/15/2000 21:03	
Heptachlor epoxide	ND	2.0	ug/Kg	05/15/2000 21:03	
4,4'-DDT	ND	10	ug/Kg	05/15/2000 21:03	
4,4'-DDE	ND	2.0	ug/Kg	05/15/2000 21:03	
4,4'-DDD	ND	2.0	ug/Kg	05/15/2000 21:03	
Endosulfan I	ND	10	ug/Kg	05/15/2000 21:03	
Endosulfan II	ND	10	ug/Kg	05/15/2000 21:03	
alpha-BHC	ND	2.0	ug/Kg	05/15/2000 21:03	
beta-BHC	ND	2.0	ug/Kg	05/15/2000 21:03	
gamma-BHC (Lindane)	ND	2.0	ug/Kg	05/15/2000 21:03	
delta-BHC	ND	2.0	ug/Kg	05/15/2000 21:03	
Endosulfan sulfate	ND	10	ug/Kg	05/15/2000 21:03	
4,4'-Methoxychlor	ND	10	ug/Kg	05/15/2000 21:03	
Toxaphene	ND	100	ug/Kg	05/15/2000 21:03	
alpha-Chlordane	ND	50	ug/Kg	05/15/2000 21:03	
gamma-Chlordane	ND	50	ug/Kg	05/15/2000 21:03	
<b>Surrogate(s)</b>					
2,4,5,6-Tetrachloro-m-xylene	96.4	50-125	%	05/15/2000 21:03	
Decachlorobiphenyl	104.2	46-142	%	05/15/2000 21:03	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants  
Attn: Ann Holbrow

Test Method: 8081  
Prep Method: 3550/8081

## Batch QC Report

### Organochlorine Pesticides Analysis

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 2000/05/12-01.13
LCS: 2000/05/12-01.13-003	Extracted: 05/12/2000 08:31	Analyzed 05/13/2000 02:30
LCSD: 2000/05/12-01.13-004	Extracted: 05/12/2000 08:31	Analyzed 05/13/2000 03:03

Compound	Conc. [ ug/Kg ]		Exp.Conc. [ ug/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Aldrin	14.0	14.2	16.7	16.7	83.8	85.0	1.4	37-136	25		
Dieldrin	14.3	14.7	16.7	16.7	85.6	88.0	2.8	58-135	35		
Endrin	14.7	14.9	16.7	16.7	88.0	89.2	1.4	58-134	35		
Heptachlor	14.4	14.8	16.7	16.7	86.2	88.6	2.7	40-136	20		
4,4'-DDT	15.5	16.1	16.7	16.7	92.8	96.4	3.8	55-132	35		
gamma-BHC (Lindane)	14.6	14.8	16.7	16.7	87.4	88.6	1.4	37-137	35		
<b>Surrogate(s)</b>											
2,4,5,6-Tetrachloro-m-xyl	43.2	43.3	50	50	86.4	86.6		50-125			
Decachlorobiphenyl	49.1	52.2	50	50	98.2	104.4		46-142			

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Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn: Ann Holbrow

Prep Method: 3550/8081

## Batch QC Report

### Organochlorine Pesticides Analysis

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 2000/05/15-03.13
LCS: 2000/05/15-03.13-003	Extracted: 05/15/2000 13:03	Analyzed 05/15/2000 21:36
LCSD: 2000/05/15-03.13-004	Extracted: 05/15/2000 13:03	Analyzed 05/15/2000 22:09

Compound	Conc. [ ug/Kg ]		Exp.Conc. [ ug/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		[%]	Recovery	RPD	LCS
Aldrin	14.2	14.4	16.7	16.7	85.0	86.2	1.4	37-136	25		
Dieldrin	14.3	14.5	16.7	16.7	85.6	86.8	1.4	58-135	35		
Endrin	14.9	15.1	16.7	16.7	89.2	90.4	1.3	58-134	35		
Heptachlor	14.5	15.1	16.7	16.7	86.8	90.4	4.1	40-136	20		
4,4'-DDT	14.9	15.2	16.7	16.7	89.2	91.0	2.0	55-132	35		
gamma-BHC (Lindane)	15.2	15.5	16.7	16.7	91.0	92.8	2.0	37-137	35		
<b>Surrogate(s)</b>											
2,4,5,6-Tetrachloro-m-xyI	49.0	49.7	50	50	98.0	99.4		50-125			
Decachlorobiphenyl	53.0	54.0	50	50	106.0	108.0		46-142			

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: Geomatrix Consultants

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Batch QC Report

### Organochlorine Pesticides Analysis

Matrix Spike ( MS / MSD )

Soil

QC Batch # 2000/05/12-01.13

Sample ID: GMX-HRD6-5.5

Lab Sample ID: 2000-05-0244-008

MS: 2000/05/12-01.13-005 Extracted: 05/12/2000 08:31 Analyzed: 05/15/2000 16:06 Dilution: 1.0

MSD: 2000/05/12-01.13-006 Extracted: 05/12/2000 08:31 Analyzed: 05/15/2000 16:39 Dilution: 1.0

Compound	Conc. [ ug/Kg ]			Exp.Conc. [ ug/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Aldrin	13.5	13.1	ND	16.6	16.5	81.3	79.4	2.4	37-136	25		
Dieldrin	13.4	12.8	ND	16.6	16.5	80.7	77.6	3.9	58-135	35		
Endrin	13.6	13.0	ND	16.6	16.5	81.9	78.8	3.9	58-134	35		
Heptachlor	13.7	13.3	ND	16.6	16.5	82.5	80.6	2.3	40-136	20		
4,4'-DDT	14.2	13.6	ND	16.6	16.5	85.5	82.4	3.7	55-132	35		
gamma-BHC (Lindane)	14.5	14.1	ND	16.6	16.5	87.3	85.5	2.1	37-137	35		
<b>Surrogate(s)</b>												
2,4,5,6-Tetrachloro-m-xy	39.9	39.1		50	50	79.8	78.2		50-125			
Decachlorobiphenyl	49.2	46.6		50	50	98.4	93.2		46-142			

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0244

To: **Geomatrix Consultants**

Test Method: 8081

Attn.: Ann Holbrow

Prep Method: 3550/8081

## Batch QC Report

### Organochlorine Pesticides Analysis

**Matrix Spike ( MS / MSD )**

**Soil**

**QC Batch # 2000/05/15-03.13**

Sample ID: **GMX-HRD1-5.5**

Lab Sample ID: 2000-05-0244-002

MS: 2000/05/15-03.13-005 Extracted: 05/15/2000 13:03 Analyzed: 05/15/2000 22:42 Dilution: 1.0

MSD: 2000/05/15-03.13-006 Extracted: 05/15/2000 13:03 Analyzed: 05/15/2000 23:15 Dilution: 1.0

Compound	Conc. [ ug/Kg ]			Exp. Conc. [ ug/Kg ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Aldrin	14.9	14.1	ND	16.6	16.6	89.8	84.9	5.6	37-136	25		
Dieldrin	14.8	14.2	ND	16.6	16.6	89.2	85.5	4.2	58-135	35		
Endrin	15.4	14.7	ND	16.6	16.6	92.8	88.6	4.6	58-134	35		
Heptachlor	15.2	14.5	ND	16.6	16.6	91.6	87.3	4.8	40-136	20		
4,4'-DDT	15.5	14.9	ND	16.6	16.6	93.4	89.8	3.9	55-132	35		
gamma-BHC (Lindane)	15.8	15.1	ND	16.6	16.6	95.2	91.0	4.5	37-137	35		
<b>Surrogate(s)</b>												
2,4,5,6-Tetrachloro-m-xy	49.1	44.7		50	50	98.2	89.4		50-125			
Decachlorobiphenyl	54.5	52.5		50	50	109.0	105.0		46-142			

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To: Geomatrix Consultants

Attn: Ann Holbrow

Test Method: 8081

Prep Method: 3550/8081

## Legend & Notes

### Organochlorine Pesticides Analysis

#### Analysis Flags

ln

Reporting limits raised due to high level of non-target analyte materials.

sdo

Surrogate(s) diluted out

2000-05-0244


52076

Chain-of-Custody Record			003697													Date: 5/10/00		Page 1 of 2			
Project No.: 6262.CFD.0			ANALYSES													REMARKS					
Samplers (Signature): <i>Tom [Signature]</i> <i>Egon [Signature]</i>			EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015M (Gasoline)	Method 8015M (Diesel)	Method 8015M (Motor Oil)	Silica Gel Cleanup	PESTICIDES METHOD 8081	Hold	MS/MSD	Soll (S), Water (W) Vapor (V), or Other (O)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
Date	Time	Sample Number																			
5/10/00	0810	GMX-HRD1-1.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0820	GMX-HRD1-5.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0830	GMX-HRD1-9.5												X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0910	GMX-HRD5-1.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0920	GMX-HRD5-5.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0930	GMX-HRD5-9.5												X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0938	GMX-HRD6-1.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0945	GMX-HRD6-5.5											X		X	S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	0955	GMX-HRD6-9.5												X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1020	GMX-HRD2-1.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1030	GMX-HRD2-5.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1040	GMX-HRD2-9.5												X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1055	GMX-HRD3-1.5											X			S	N	N	Y	1	1 1/4" x 6" Polybutyrate Tube
	1105	GMX-HRD3-5.5											X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
↓	1115	GMX-HRD3-9.5												X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube


Laboratory: <i>Chromalab</i>	Turnaround Time: <i>Standard</i>	Results to: <i>Ann Holbrow</i>	Total No. of Containers: <i>15</i>
Relinquished by (Signature): <i>Tom [Signature]</i>	Date: <i>5/10/00</i>	Relinquished by (Signature):	Date:
Printed Name: <i>Tom Davidson</i>	Time: <i>1600</i>	Printed Name:	Time:
Company: <i>Geomatrix</i>		Company:	
Received by:	Date:	Received by: <i>Deuse Harrington</i>	Date: <i>5/10/00</i>
Printed Name:	Time:	Printed Name: <i>D. Harrington</i>	Time: <i>1745</i>
Company:		Company: <i>Chromalab</i>	

Method of Shipment: <i>Lab Courier Pickup</i>
Laboratory Comments and Log No.: <i>Cooler rec'd sealed &amp; in good condition - DS14 2.7°C</i>
 <b>Geomatrix Consultants</b>
2101 Webster Street, 12th Floor • Oakland, CA 94612 Phone: 510-663-4100 • Fax: 510-663-4141

2000-05-0294

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Chain-of-Custody Record			003699										Date: 5/10/00			Page 2 of 2				
Project No.: 6262.000.0			ANALYSES										REMARKS							
Samplers (Signature): <i>Tom Cavanagh</i> <i>Erin Finn</i>			EPA Method 8021 (Full Scan)	EPA Method 8021 (Hal. VOCs only)	EPA Method 8021 (BETX only)	EPA Method 8260	EPA Method 8270 (Full Scan)	EPA Method 8270 SIM (PAHS only)	Method 8015M (Gasoline)	Method 8015M (Diesel)	Method 8015M (Motor Oil)	Silica Gel Cleanup	Perchlorates METHODS 8081	Hold	Soil (S), Water (W) Vapor (V), or Other (O)	Filtered	Preserved	Cooled	No. of Containers	Additional Comments
Date	Time	Sample Number																		
5/10/00	1150	GMX-HR07-1.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1200	GMX-HR07-5.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1210	GMX-HR07-9.5											X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1225	GMX-HR08-1.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1235	GMX-HR08-5.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1245	GMX-HR08-9.0											X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1320	GMX-HR04-1.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
	1330	GMX-HR04-5.5										X			S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
↓	1340	GMX-HR04-9.5											X		S	N	N	Y	1	1 1/4" x 6" polybutyrate tube
Laboratory: Chromalab			Turnaround Time: Standard			Results to: Ann Holbrow			Total No. of Containers: 9											
Relinquished by (Signature): <i>Tom Cavanagh</i>			Relinquished by (Signature):			Date: 5/10/00			Date: 5/10/00								Method of Shipment: Lab Courier			
Printed Name: Tom Cavanagh			Printed Name:			Time: 1600			Time:			Laboratory Comments and Log No.:								
Company: Geomatrix			Company:			Company:			Company:			 2101 Webster Street, 12th Floor • Oakland, CA 94612 Phone: 510-663-4100 • Fax: 510-663-4141								
Received by:			Received by:			Date: 5/10/00			Date: 5/10/00											
Printed Name:			Printed Name:			Time: 1745			Time: 1745											
Company:			Company:			Company:			Company: Chromalab											

Attachment E

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Results of Quality Assurance/Quality Control

## ATTACHMENT E

### RESULTS OF QUALITY ASSURANCE/QUALITY CONTROL H.A.R.D. PARK PROPERTY

Hayward, California

The parameters used to evaluate data quality are as follows:

- **Accuracy:** The agreement of a measurement with an accepted reference or true value. Accuracy was assessed using the laboratory method blanks, laboratory control samples, and matrix spike samples. Laboratory method blanks test for false positive results. For laboratory control samples, the laboratory adds a known quantity of a chemical to deionized water, which is then analyzed. For matrix spike samples, a known quantity of a chemical is added to a site-specific sample designated on the chain-of-custody. In addition, the laboratory adds surrogates (chemicals with similar characteristics that are unlikely to be detected in environmental media) to each sample to test the accuracy of the measurements for these surrogate compounds. The accuracy goal for each analyte is specified by the laboratory on the laboratory data sheets (Attachments C and D).
- **Precision:** A measurement of the degree of agreement of replicate data, which is quantitatively assessed, based on the relative percent difference or standard deviation. Precision was assessed using matrix spike/matrix spike duplicate samples, laboratory control/duplicate samples, and site-specific duplicate samples selected by the laboratory. The precision goal for the relative percent difference for these samples was set at 20%.
- **Completeness:** The amount of valid data obtained from a prescribed measurement system throughout the project, as compared with that expected and required to meet the project goals.

Documentation of calculations for accuracy (percent recovery) and precision (relative percent difference) are presented in the laboratory data sheets for the appropriate QA/QC sample (Attachments C and D).

#### *Accuracy*

Two method blanks were run for organochlorine pesticides; one method blank was analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons in the motor oil range (TPHmo), and polycyclic aromatic hydrocarbons (PAHs). For method blank samples, with two exceptions, all analyte concentrations were below method reporting limits, indicating that the laboratory results represented the contents of the sample. The exceptions consisted of detections of acetone (68 µg/kg) and methylene chloride (52 µg/kg) (EPA Method 8260,