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June 30, 1998

Walsh Pacific Construction EBMUD Adeline Maintenance Facility 2130-A Adeline Street Oakland, CA 94607 Attn.: Mr. Eugene Hays

> Subject: Transmittal of AMC Phase II Construction Materials Management Final Report for EBMUD Adeline Maintenance Center, Oakland, CA

Dear Mr. Hays:

Geo Plexus, Incorporated is pleased to provide the attached AMC Phase II Construction Materials Management Final Report for the East Bay Municipal Utility District Adeline Maintenance Center, located in Oakland, California.

The attached report summarizes the remedial excavation objectives and threshold criteria and provides documentation (sampling data and analytical test data) for the Phase II construction soil excavation and construction dewatering activities and documents the transportation and off-site disposal of the contaminated soil.

The field observations and analytical test data support our conclusion that the remedial objectives as set forth in the Materials Management Plan (MMP) and in Addendum No. 2 to the MMP were accomplished. Additional investigation or remedial action is not warranted.

It has been a pleasure to be of service to you on this project. Questions or comments regarding the attached report should be addressed to our office.

Respectfully submitted,

Geo Plexus, Incorporated

Kimberly F. Leeds,

President

cc: C95041

Cathrene Diane Glick ZEG 1538, HG 32 ENGINEERING Director, Geologic and Environmental Services OF CALIFORN



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FINAL REPORT AMC PHASE II CONSTRUCTION MATERIALS MANAGEMENT REPORT EAST BAY MUNICIPAL UTILITY DISTRICT ADELINE MAINTENANCE CENTER 1200 21st STREET OAKLAND, CALIFORNIA

prepared for:

Walsh Pacific Construction
EBMUD Adeline Maintenance Facility
2130-A Adeline Street
Oakland, California

and

Special Projects Division
Engineering Department
East Bay Municipal Utility District
375 Eleventh Street
Oakland, California

June 30, 1998

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TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 Background	1
1.2 Previous Investigative Action	2
1.3 Supplemental Investigations	3
2.0 THRESHOLD CRITERIA	4
3.0 REMEDIAL ACTION METHODOLOGIES	6
3.1 Excavation Protocols	7
3.2 Excavation Soil Characterization	7
3.3.1 Former Gasoline Station Excavation	7
3.3.2 Former Auto Shop Excavation	8
3.3 Excavation Water Disposal	11
4.0 EXCAVATED SOIL TRANSPORT AND DISPOSAL	11
5.0 CONCLUSIONS	11
6.0 LIMITATIONS	12
7.0 REFERENCES	13
APPENDIX A - Analytical Testing Laboratory Certification APPENDIX B - Phase II Test Pit Analytical Test Data APPENDIX C - Phase II Excavation Analytical Test Data	

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FIGURES

Figure 1	AMC Location and Phasing Plan
Figure 2	Phase II Site Plan
Figure 3	Gasoline Station Tank and Excavation Plan
Figure 4	Preliminary Site Assessment Boring Plan
Figure 5	Phase II Supplemental Investigation Boring Plan
Figure 6	Phase II Test Pit Plan
Figure 7	Phase II Excavation Plan
Figure 8	Phase II Gasoline Station Area Soil Sample Plan
Figure 9	Phase II Automotive Shop Area Soil Sample Plan

ACRONYMS

AMC	Adeline Maintenance Center
ASTM	American Society for Testing and Materials
BTEX	Volatile Aromatic Compounds
DILA	(Benzene, Toluene, Ethyl benzene and Xylene)
DHS	State of California Department of Health Services
DTSC	State of California Department of Toxic Substance Control
EBMUD	East Bay Municipal Utility District
EPA	U.S. Environmental Protection Agency
FID	Flame Ionizing Detector
HVOC	Halogenated Volatile Organic Compounds
LUST	Leaking Underground Storage Tank
MMP	Materials Management Plan
OVA	Organic Vapor Analyzer
OVM	Organic Vapor Meter
PID	Photoionization Detector
RBCA	Risk-Based Corrective Action
RBSL	Risk-Based Screening Levels
RCRA	Resource Conservation and Reclamation Act
RWQCB	State of California Regional Water Quality Control Board
STLC	Soluble Threshold Limit Concentration
TPH gas	Total Petroleum Hydrocarbons as gasoline
TPH diesel	Total Petroleum Hydrocarbons as diesel
TTLC	Total Threshold Limit Concentrations
UST	Underground Storage Tank
WPC	Walsh Pacific Construction
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compounds

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1.0 INTRODUCTION

East Bay Municipal Utility District (EBMUD) is constructing a new Adeline Maintenance Center (AMC) at the site of the existing AMC. The AMC site comprises four city blocks, as shown in Figure 1. Walsh Pacific Construction (WPC) has been retained by EBMUD as the design/build contractor for the AMC project which includes demolition of several existing structures, the construction of 5 new buildings, and remodeling of 2 buildings. The construction project is being completed in 3-phases as indicated on Figure 2.

This report addresses the remedial soil excavation activities associated with Phase II of the construction sequence for the planned Shops Building (see Figure 2). Alameda County Health Department is the lead regulatory agency providing oversight of environmental investigations and remedial activities conducted at the site.

1.1 BACKGROUND

Previous environmental investigations of the AMC site have identified localized areas of soil contamination, primarily from the past operation of underground storage tanks. The following reports have been issued to Alameda County Department of Environmental Health to date:

Geo Plexus, Inc., 1995, "Preliminary Site Assessment Report for Adeline Maintenance Facility", prepared for East Bay Municipal Utility District.

Geo Plexus, Inc., January 18, 1996, "Materials Management Plan for Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., January 22, 1996, "Addendum No. 1 Material Management Plan for Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., February 2, 1996, "Response to Alameda County Review Comments on the Material Management Plan for Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., February 2, 1996, "Submittal of Analytical Test Data from Phase 1 Additional Test Pits, EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., May 29, 1996, "AMC Phase 1- Construction Materials Management Final Report for East Bay Municipal Utility District Adeline Maintenance Center, Oakland, CA" prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., September 12, 1996, "Addendum No. 2 Material Management Plan for EBMUD Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Inc., January 22, 1997, "Subsurface Investigation Report and Response to Alameda County Review Comments on Addendum No. 2 to the Material Management Plan for EBMUD Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

The Materials Management Plan (MMP) for the EBMUD AMC, reference (12), was prepared by Geo Plexus, Inc. to present the general history of the project site, present an evaluation of human and environmental risks associated with the known soil contaminates, present threshold criteria for the soil and ground water, and present phase-specific guidelines for remediation of soil and ground water containing contaminants above the threshold criteria to be implemented during completion of the earthwork associated with the AMC construction.

Addendum No. 1 to the Materials Management Plan, reference (13), was issued to address Alameda County comments on the MMP and to address the planned additional test pit investigation for the Phase 1 construction site and to address the remedial excavation activities for the AMC Phase 1 site. The Phase 1 Construction Materials Management Final Report, reference (17), documented the remedial excavation activities and soil disposal for Phase 1 construction.

Addendum No. 2 to the Materials Management Plan, reference (18), was issued to address the planned additional investigation for the Phase II construction site and to address the remedial excavation activities for the AMC Phase II site.

1.2 PREVIOUS INVESTIGATIVE ACTION

Six underground storage tanks (see Figure 3) were excavated and removed from the property in November, 1994. The native soil material exposed in the sidewalls of the excavation exhibited strong petroleum odors, soil discoloration/staining (gray-green color) and free-product was observed to be leaching from these soils. The excavation for the 4,000 gallon and adjacent concrete encased tanks was extended laterally to the north, east and south to abate the impacted soil (see Figure 3).

The excavation was extended vertically to a depth of 13- to 16-feet below ground surface. Perched water was observed seeping from various locations along the side walls of the excavation and along the sand bedding for the various utility lines (storm sewer, sanitary sewer, water, phone lines, etc.) encountered within the limits of the excavation. Residual, near surface soil contamination remains in-place around the perimeter of the excavation, particularly beneath West Grand Avenue and beneath the former service station building

Subsequent to the tank removal and soil excavation activities, a limited preliminary site assessment was performed, reference (11), which included advancing eighteen exploration borings across the property at the locations indicated on Figure 4. The borings were located to investigate potential areas of subsurface contamination from EBMUD facilities and operations, as well as from previous site uses (as documented by aerial photographs and site records) which included residential housing and commercial office/warehouse structures.

In addition to the former underground storage tanks, Oil and Grease Compounds were detected at concentrations of 13,000-18,000 ppm and TPH diesel was detected at concentrations of 2,200 ppm in the soil samples obtained adjacent to a hydraulic lift inside the Automotive Service Building. Low concentrations of TPH gas and Volatile Organic Compounds were also detected.

Specifics of these investigation activities were presented in the MMP and Addendums No. 1 and No. 2.

1.3 SUPPLEMENTAL INVESTIGATIONS

In October, 1996, Geo Plexus, Inc personnel observed the advancement of 15 additional soil borings across the Phase II and Phase III construction areas to obtain soil samples to further evaluate the petroleum impacted soils and to obtain soil samples for pre-characterization for disposal of the excavated soil. Figure 5 indicates the locations of the additional borings (identified as WB-1 through WB-15). The investigation report, reference (19), also provided responses to Agency comments on Addendum No. 2 to the MMP.

At the request of Walsh Pacific Construction, five (5) additional test pits were advanced within the Phase II construction area on May 6, 1997 to pre-characterize these soils for off-site disposal. The test pits were advanced at locations of planned construction related excavations (i.e, elevator pit, dip tank, etc.) and at locations of previously identified areas of remedial excavation (i.e., gasoline station, auto shop, etc.). Figure 6 indicates the locations of these test pits

Soil samples from the test pits were obtained utilizing a backhoe and were collected by advancing a pre-cleaned 2 inch I.D. stainless steel liner into the undisturbed soil contained in the backhoe bucket. The soil samples were immediately sealed in the liners using teflon tape and plastic caps and properly labeled including: the date, time, sample location, and project number. The samples were immediately placed in a cooler maintained at 3-5°C for transport to the laboratory under chain-of-custody documentation. These soil samples were submitted to and tested by McCampbell Analytical, a State of California, Department of Health Services certified testing laboratory.

The State certification documents for McCampbell Analytical are included in Appendix A. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board Recommendations for Initial Evaluation and Investigation of Underground Tanks and Alameda County Department of Environmental Health guidelines.

Since the objectives of these test pits were for disposal characterization, the soil samples were composited by the laboratory and tested for:

Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015
Total Petroleum Hydrocarbons as diesel by Method GCFID 3550/8015
Volatile Aromatics (BTEX and MTBE) by EPA Method 8020
Oil & Grease by EPA Method 5520
Volatile Halocarbons by EPA Method 8010
TCLP Benzene by Method GCFID 5030/8015
CAM 5 Metals by EPA Methods 6000/7000 Series
STLC for Lead and Zinc by EPA Methods 6000/7000 Series

The results of these limited sampling activities were presented in two Geo Plexus Letter Reports dated May 22, 1997, references (21) and (22). The chain-of-custody forms and analytical test data are included in Appendix B.

The composite test sample obtained from the Dip Tank Test Pit, the Auto Shop Test Pit, and Test Pit-2 samples (see Appendix B) contained concentrations of lead at 9.5 ppm. The composite test sample obtained from the Gas Station Test Pit and Test Pit-1 samples contained concentrations of lead at 170 ppm. Based on the analytical testing of the soil samples from the area, the data suggests that the observed high concentration of lead from the gasoline station area was an isolated occurrence and not representative of the area.

2.0 EXCAVATION THRESHOLD CRITERIA

Table 1 presents the updated threshold criteria for soil at the AMC for petroleum hydrocarbon contaminants, VOC's, and PNA's based on the protection of ground water resources from compounds leaching from the soil as established in Addendum No. 2 to the MMP.

TABLE 1

PETROLEUM AND VOC THRESHOLD VALUES FOR SOIL

Constituent	Threshold Values for Within Building Footprint	RBSL Threshold Values for Outside Building Footprint
TPH gas	100 ppm	unlimited
TPH diesel	1,000 ppm	unlimited
Oil & Grease	1,000 ppm	unlimited
Benzene	0.3 ppm	1.67 ppm*
Toluene	0.3 ppm	360 ppm
Ethylbenzene	l ppm	130 ppm
Xylenes	1 ppm	Res
Napthalene	I ppm	64 ppm
Benzo(a)pyrene	l ppm	Res
1,4 Dichlorobenzene	310 ppm	310 ppm
1,1 Dichloroethane	92 ppm	92 ppm
1,2 Dichloroethane	2.5 pm	2.5 pm
Fluoranthene	Res	Res
Phenanthrene	Res	Res
Pyrene	Res	Res
Tetrachloroethane	8,800 ppm	8,800 ppm
1,1,1-Trichloroethane	330 ppm	330 ppm
1,1,2-Trichloroethane	0.42 ppm	0.42 ppm
Trichloroethene 2.4 ppm 2.4 ppm		2.4 ppm

RBSL - Risk Based Screening Level from RBCA Tier 1 Evaluation.

^{*} Value of 5.82 ppm reduced by 29 percent in accordance with RWQCB guidelines. Res - selected risk level is not exceeded for pure compound present at any concentration.

Based on the established threshold criteria, EBMUD and Alameda County agreed that soil within the proposed footprints of the planned structures would be excavated to concentrations below the Tri-Regional Guidelines and soil outside the proposed footprints of the planned structures would be excavated to concentrations below the ASTM-RBCA Tier-1 RBSL's. As there are no Tri-Regional Guidelines for VOC's and PNA's, and the calculated RBSL's for soil leaching to ground water are more conservative than calculated RBSL's for soil volatilization indoors, the RBSL's for soil leaching to ground water for these compounds were applied to all areas of the AMC Phase-2 and Phase-3 construction sites.

Threshold Criteria for heavy metal compounds were as stipulated in the California Code of Regulations Title 22 as Total Threshold Limit Concentrations (TTLC) as described in the MMP. TTLC values for the LUFT-5 Metals (for waste oil evaluation) are presented in Table 2.

TABLE 2
HEAVY METAL THRESHOLD VALUES FOR SOIL

Metals of Concern	Threshold Values TTLC	
Cadmium	100 ppm	
Chromium	2,500 ppm	
Lead	1,000 ppm	
Nickel	2,000 ppm	
Zinc	5,000 ppm	

3.0 REMEDIAL ACTION METHODOLOGIES

Based on the established threshold values, the petroleum contaminated soils at the Phase II site requiring removal included the former gasoline service station area and the former automotive service building (see Figure 7). The excavation activities were accomplished by Bay Cities Paving and Grading under contract with WPC under direct oversight by Geo Plexus, Incorporated personnel.

3.1 EXCAVATION PROTOCOLS

The soil removal was accomplished with an excavator and were observed and logged under the direct oversight of a Certified Engineering Geologist from Geo Plexus. The work was scheduled and coordinated with, and observed by, Ms. Julliet Shin with Alameda County Department of Environmental Health.

The soils exposed in the sidewalls and base of the excavations were screened in the field through the use of an Photovac 200 Organic Vapor Meter (OVM) as the excavation proceeded.

3.2 EXCAVATION SOIL CHARACTERIZATION

Soil samples were obtained from the sidewalls and from the base of the excavations as the excavations proceeded to determine the limits of the excavations based on the established threshold criteria and to document and classify the soil materials.

Soil samples were collected from the sidewalls and base of the excavation for analytical testing. The soil samples were obtained by advancing a pre-cleaned 2 inch I.D. brass liner into the undisturbed soil. The soil samples were immediately sealed in the liners using aluminum foil or teflon tape and plastic caps and properly labeled including: the date, time, sample location, and project number. The samples were then placed in a cooler maintained at 3-5°C for transport to the laboratory under chain-of-custody documentation.

The soil samples were submitted to and tested by McCampbell Analytical. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board Recommendations for Initial Evaluation and Investigation of Underground Tanks and Alameda County Department of Environmental Health guidelines. The testing included:

Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015; Total Petroleum Hydrocarbons as diesel by Method GCFID 3550/8015; Oil & Grease by EPA Method 5520 Volatile Aromatics (BTEX) by EPA Method 8020; Volatile Halocarbons by EPA Method 8010; PNA's by EPA Method 8270; and LUFT 5 Metals by EPA 6000/7000 Series.

3.2.1 Former Gasoline Station Excavation

The excavation for the former gasoline station site was initiated immediately north of the previously excavated area and adjacent to West Grand Avenue. The excavation proceeded to the north and west based on field indicators and analytical test data to abate any impacted soil which was exceeded the threshold limits. The excavation extended to the south to encounter the former gravel backfill and ranged from approximately 8- to 9-feet deep.

Figure 8 illustrates the locations of the soil samples obtained throughout the excavation process Approximately 1,300 yards of soil were removed and stockpiled on-site for additional characterization for off-site disposal (discussed in Section 4.0). No additional tanks or sumps were encountered during this activity. The chain-of-custody forms and analytical testing data are included in Appendix C.

Table 3 summarizes the concentrations of TPH gas, TPH diesel, and Benzene detected in the soil samples with reference to the applicable threshold criteria. Where the concentrations of these compounds exceeded the threshold criteria, additional soil was excavated and the area resampled.

3.2.2 Former Auto Shop Excavation

The locations of three (3) former hydraulic lifts were excavated to remove the lift cylinders and to obtain verification soil samples. Two of the lifts were contained within concrete encasements while the third consisted of a direct buried ram cylinder and reservoir tank. Approximately 200 yards of soil were removed and stockpiled on-site for additional characterization for off-site disposal (discussed in Section 4.0). Figure 9 illustrates the locations of the soil samples obtained throughout the excavation process. The chain-of-custody forms and analytical testing data are included in Appendix C.

Table 4 summarizes the concentrations of TPH gas, TPH diesel, Oil & Grease, and Benzene detected in the soil samples with reference to the applicable threshold criteria. Where the concentrations of these compounds exceeded the threshold criteria, additional soil was excavated and the area re-sampled.

SUMMARY OF GASOLINE STATION ANALYTICAL TEST DATA CONFIRMATION SOIL SAMPLES GASOLINE, DIESEL AND BENZENE

Sample	TPH gas	TPH diesel	Benzene	Result/ Action
20X1-S1	N.D.	1.8	N.D.	Below Ext. Bldg. Threshold
20X1-S2	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold
20X1-S3	1.1	N.D.	N.D.	Below Ext. Bldg. Threshold
20X1-S4	2.0	3.2	N.D.	Below Ext. Bldg. Threshold
20X1-S5	3.0	3.0	N.D.	Below Ext. Bldg. Threshold
20X1-S6	N.D.	1.4	N.D.	Below Ext. Bldg. Threshold
20X1-S7	N.D.	2.6	N.D.	Below Ext. Bldg. Threshold
20X1-S8	2.7	3.8	0.40	Below Ext. Bldg. Threshold
20X1-S9	3.1	N.D.	1.1	Below Ext. Bldg. Threshold
20X1-S10	N.D.	4.0	N.D.	Below Ext. Bldg. Threshold
20X1-S11	11	7.9	0.055	Below Int. Bldg. Threshold
2OX1-S12	67	27	4.1	Exceeded Int. Bldg. Threshold Area Excavated and Retested
2OX1-S12A	73	44	4.6	Exceeded Int. Bldg. Threshold Area Excavated and Retested
2OX1-S12B	27		0.13	Below Int. Bldg. Threshold
2OX1-S13	4.2	9.7	0.010	Below Ext. Bldg. Threshold
2OX1-S14	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold
20X1-S15	4.5	3.8	0.069	Below Ext. Bldg. Threshold
20X1-S16	6.5	N.D.	0.26	Below Ext. Bldg Threshold
20X1-S17	12	5.3	0.29	Below Ext. Bldg Threshold
2OX1-S18	N.D.	1.2	N.D.	Below Ext. Bldg. Threshold
20X1-S19	1.2	1.5	0.006	Below Ext. Bldg Threshold
2OX1-S20	2.6	1,500	N.D.	Exceeded Ext. Bldg. Threshold Area Excavated and Retested
20X1-S20A	27	42	N.D.	Below Ext. Bldg Threshold

Notes: Concentrations reported as Parts Per Million (mg/kg).

N.D. indicates that concentrations below detection limit.

TABLE 4 SUMMARY OF AUTO SHOP ANALYTICAL TEST DATA CONFIRMATION SOIL SAMPLES GASOLINE, DIESEL, OIL & GREASE AND BENZENE

Sample	TPH gas	TPH diesel	Oil & Grease	Benzene	Result/ Action
HOX1-S1					Area Excavated and Retested
HOX1-S2	N.D.	3.3	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S3	N.D.	1.8	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S4	N.D.	3.7	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S5	N.D.	4.7	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S6	N.D.	1.8	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S7	N.D.	3.5	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S8	N.D.	5.6	N.D.	0.040	Below Ext. Bldg. Threshold
HOX1-S9	N.D.	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S10	N.D.	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold
HOX1-S11	N.D.	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold
2HOX1-S1	67	N.D.	N.D.	4.1	Below Ext. Bldg. Threshold
2HOX1-S2	27	N.D.	N.D.	0.13	Below Ext. Bldg. Threshold
2HOX1-S3	4.2	N.D.	N.D.	0.010	Below Ext. Bldg. Threshold
2HOX1-S4	N.D.	N.D.	N.D.	N.D.	Below Ext. Bldg. Threshold

Notes: Sample 2HOX-S1 not analyzed due to obvious presence of petroleum compounds Concentrations reported as Parts Per Million (mg/kg).

N.D. indicates that concentrations below detection limit.

In addition, the samples from the hydraulic lift excavations did not contain detectable concentrations of Volatile Halocarbon Compounds or PNA's. The concentrations of Heavy Metals in these samples did not exceed general background concentrations and do not represent an environmental health risk.

The excavation activities were terminated upon reaching the objective threshold criteria as verified by analytical testing of the soil samples.

Additional soil screening was reportedly performed by WPC personnel for the remainder of the construction related excavation activities for the Shops Building (i.e., pile caps, footings, etc.). Based on their reported observations, additional soil contamination above the threshold criteria was not encountered.

3.3 EXCAVATION WATER DISPOSAL

Water seepage (perched water) was observed from various locations along the side walls of the excavations and along the sand bedding for the various utility lines (storm sewer, sanitary sewer, water, electric lines, etc.) encountered within the excavations. The water observed in these shallow areas was not classified as ground water for characterization purposes.

Water seeping into the excavation was pumped from the excavation to a 20,000 gallon Baker tank and was treated by an activated carbon filter system (consisting of two Cameron-Yakima WSU-55 canisters) prior to discharged to the sanitary sewer under permit conditions from East Bay Municipal Utility District.

4.0 EXCAVATED SOIL TRANSPORT AND DISPOSAL

The soil material generated during the excavation activities was stockpiled on-site and characterized for disposal.

Approximately 2,500 tons of soil were transported as non-hazardous waste and disposed of at BFI Vasco Road Landfill in Livermore, California.

In addition, approximately 900 tons of soil containing elevated levels of Lead (above STLC) were manifested and transported as hazardous waste by ECDC and disposed of at ECDC Environmental Landfill in East Carbon, Utah.

5.0 CONCLUSIONS

Based on Geo Plexus personnel observations, the results of the analytical testing, and the reported WPC observations, the objectives of the soil removal from within the footprint and outside of the footprint of the Stores Building were accomplished to concentrations below the threshold limit criteria.

It is our opinion that the project site does not represent an environmental risk to the local or regional ground water conditions and that additional investigation, analysis, or remediation is not warranted. It is recommended that this section of the AMC site be considered for closure without further action.

6.0 LIMITATIONS

We have only observed a small portion of the pertinent soil conditions present at the site. Subsurface conditions across the site have been extrapolated from information obtained from review of existing documents, field investigations, excavation observations, and analytical test data. The conclusions made herein are based on the assumption that soil conditions deviate appreciably from those described in the reports and observed in the field.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the information prepared/provided by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

Geo Piexus, Incorporated

REFERENCES

(1) American Society for Testing and Materials (ASTM), 1994, "Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites", ES 38-94, July, 1994.
(2), 1995, "Risk-Based Corrective Action Applied at Petroleum Release Sites", E 1739-95, November, 1995.
(3) California Code of Regulations, Title 22, Social Security, Division 4, Environmental Health (current version).
(4) California Regional Water Quality Control Board, San Francisco Bay Region, 1990, "Tri-Regional Board Staff Regulations for Preliminary Evaluation and Investigation of Underground Tank Sites", August 10, 1990.
(5), 1990, Guidance Document for the Development of Health-Based Remedial Clean- Up Levels for the South Bay Multi-Site Cooperative Superfund Program, prepared by Clement Associates Inc.
(6) California Water Resource Control Board, Leaking Underground Fuel Tank Task Force, 1989, "Leaking Underground Fuel Tank Manual: Guidance for Site Assessment, Cleanup, and Underground Storage Tank Closure", revised October, 1989.
(7) General Environmental Management Services (GEMS), 1994, "Interim Remedial Action Summary Report for EBMUD Facility located at 1200 21st Street, Oakland, CA".
(8) United States Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health (NIOSH), 1990, "NIOSH Pocket Guide to Chemical Hazards".
(9) United States, Environmental Protection Agency, 1982, "Test Methods for Evaluating Solid Waste, SW-846, Second Edition", 1982.
(10) United States, Resource Conservation and Recovery Act (RCRA), Pub. L. No. 94-580, 90 Stat. 2795 (1976), codified as 42 U.S.C. 6901 et seq.; as amended.
(11) Geo Plexus, Inc., 1995, "Preliminary Site Assessment Report for Adeline Maintenance Facility", prepared for East Bay Municipal Utility District.
(12), January 18, 1996, "Materials Management Plan for Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

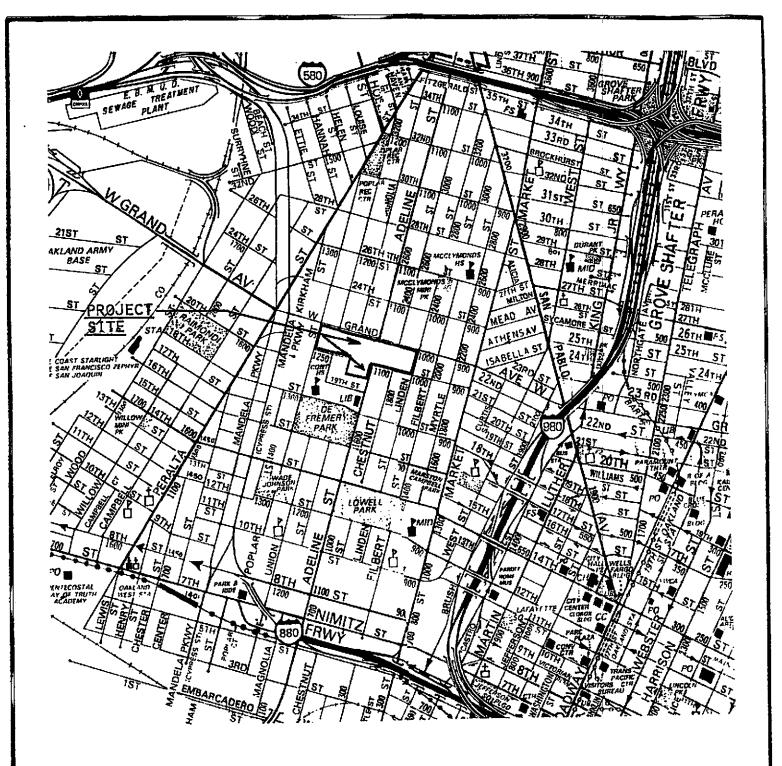
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(14), January 30, 1996, "Interim Submittal of Analytical Test Data from Phase 1 Additional Test Pits, EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
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(18), September 12, 1996, "Addendum No. 2 Material Management Plan for EBMUD Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
(19), January 22, 1997, "Subsurface Investigation Report and Response to Alameda County Review Comments on Addendum no. 2 to the Material Management Plan for EBMUD Adeline Maintenance Facility", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
(20), May 20, 1997, "Summary Letter for Soil Excavation and Disposal at EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
(21), May 22, 1997, "Submittal of Analytical Test Data from Phase II Test Pits for Disposal Characterization, EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
(22), May 22, 1997, "Submittal of Additional Analytical Test Data from Phase II Test Pits for Disposal Characterization, EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.
(23), June 20, 1997, "Results of Analytical Testing of Stockpiled Soil from EBMUD Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay Municipal Utility District.

Geo Plexus, Incorporated
1900 Wyatt Drive, Suite 1, Santa Clara, California 95054 Phone 408/987-0210 Fax 408/988-0815

AMC Phase II - Construction Materials Management Final Report
EBMUD Adeline Maintenance Center, Oakland, CA

June 30, 1998 Page 15

(24), June 26, 1997, "Summary Letter for Soil Excavation and Disposal at EB	
Adeline Maintenance Center", prepared for Walsh Pacific Construction and East Bay M	unicipal
Utility District	

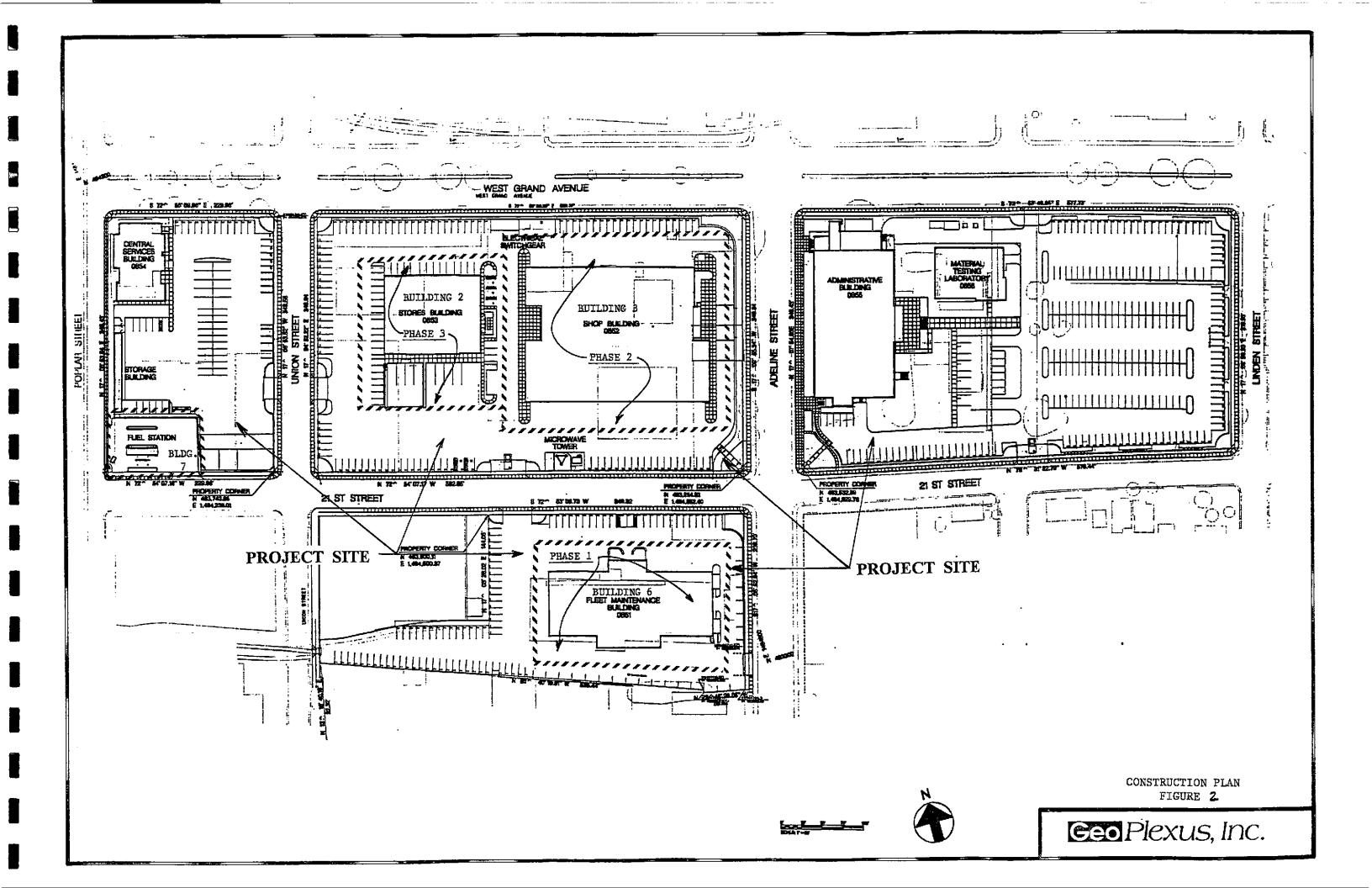


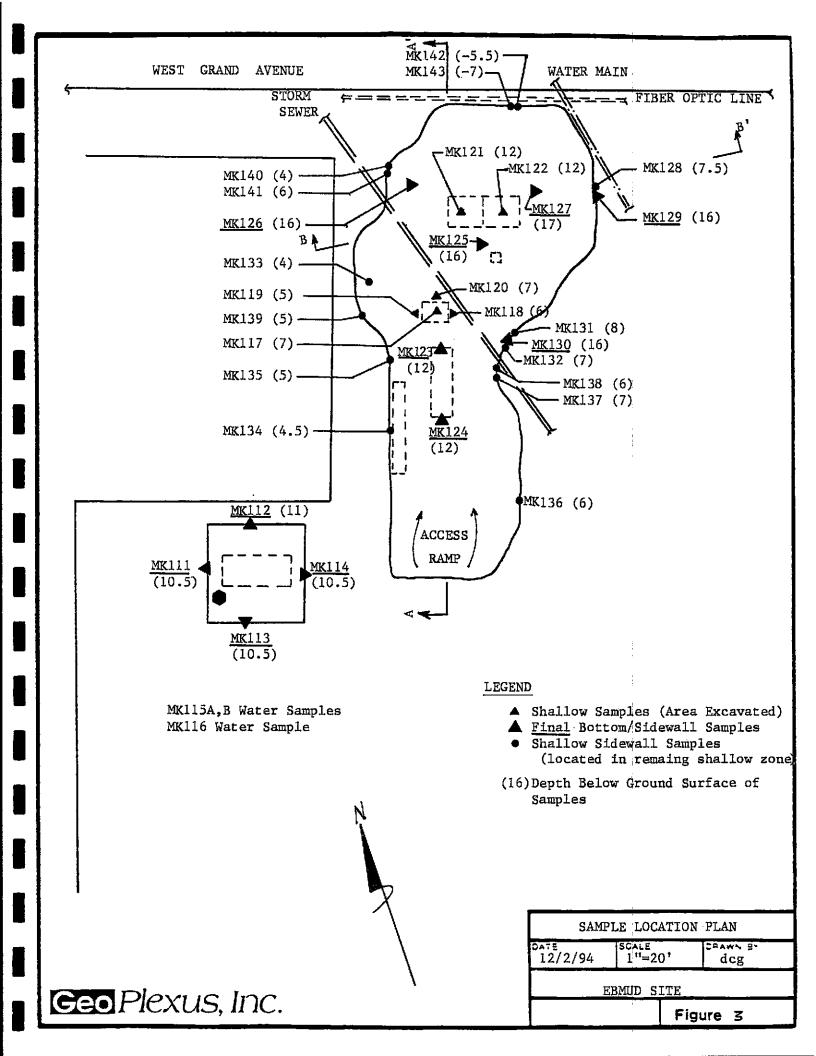
Source: Thomas Brothers Maps

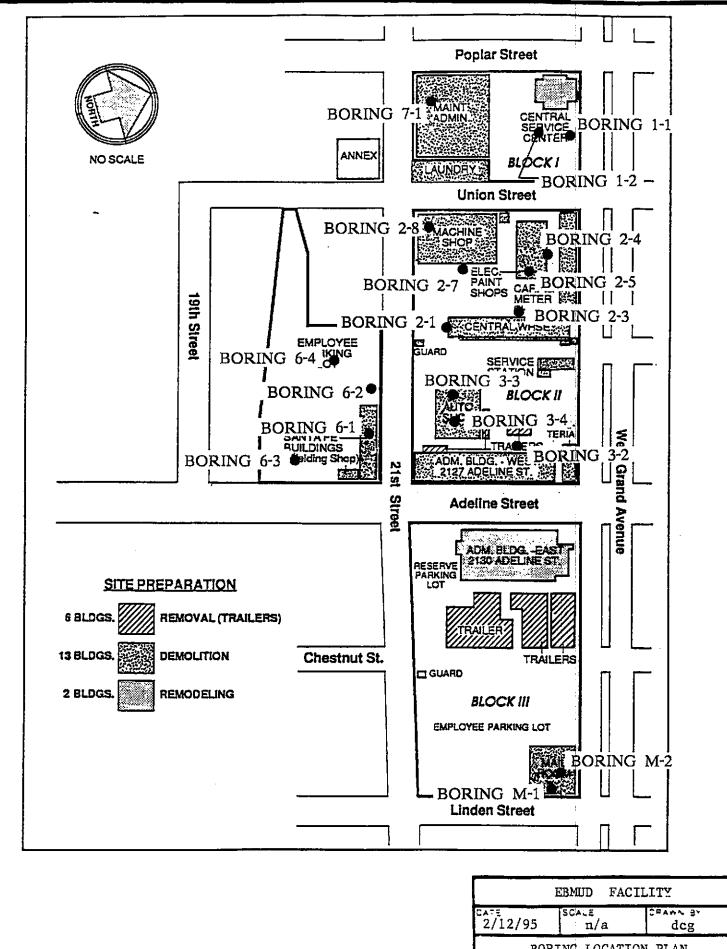
EAST BAY MUD FACILITY

PATE 19/94 SCALE | Care 1 Care 1

Geo Plexus,	Inc.
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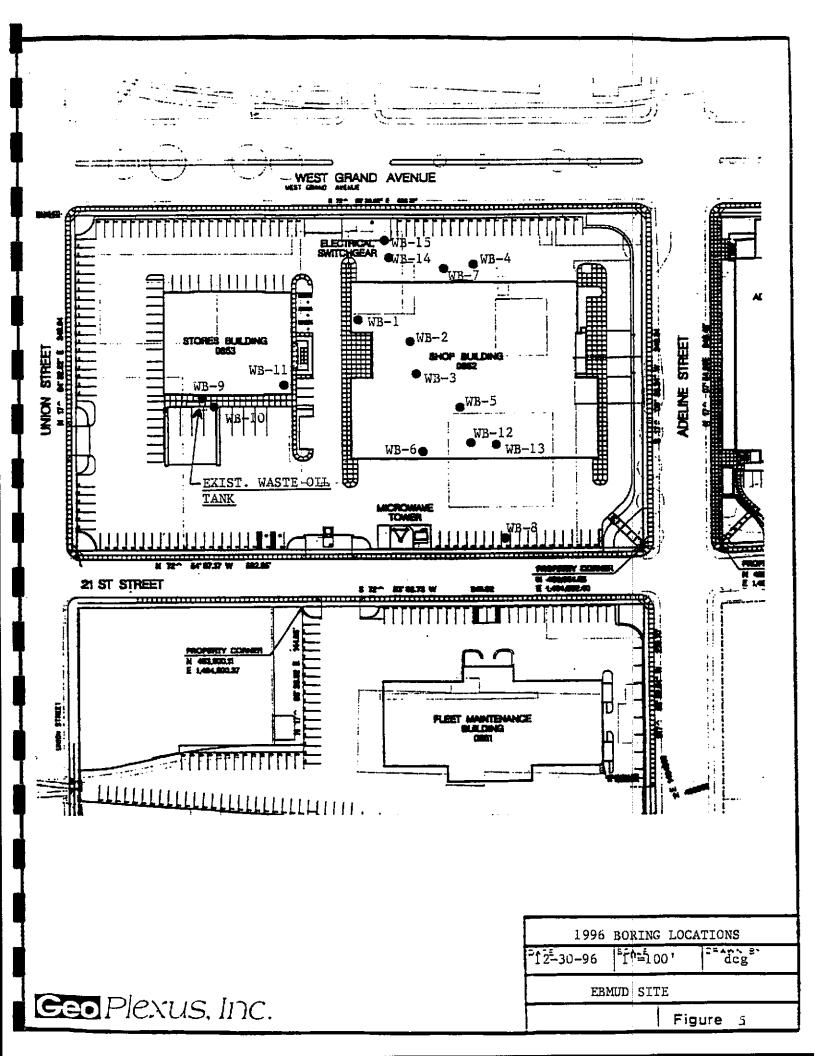






Geo Plexus, Inc.

BORING LOCATION PLAN **Figure**



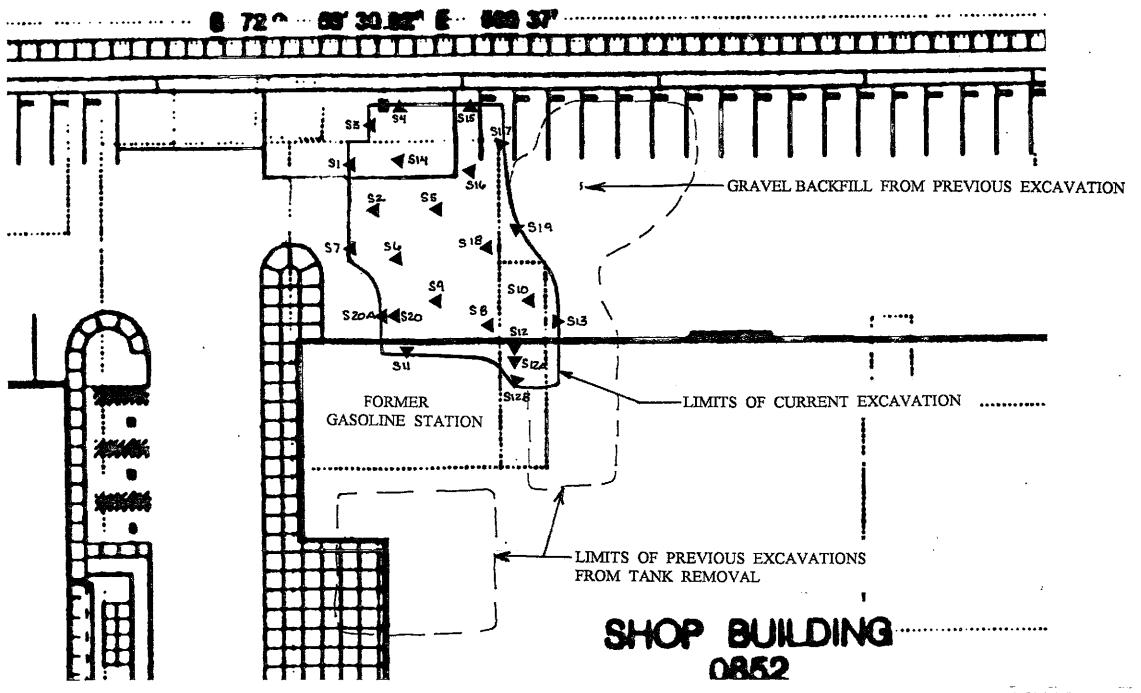
WEST GRAND AVENUE ELECTRICAL SWITCH GEAR GASOLINE STATION TEST PIT TEST PIT NO. 1 STORES BUILDING DIP TANK TEST PI SHOP BUILDING ELEVATOR PIT TEST PIT NOINS **AUTO SHOP TEST PIT** MICROWAVE TOWER N 463,554.23 E 1,484,852.40 21 ST STREET 63° 06.73 W PROPERTY CORNER FLEET MAINTENANCE BLILDING 0851 TEST PIT LOCATION PLAN 2/16/98 EBMUD ADELINE CENTER Geo Plexus, Inc. **Figure**

WEST GRAND AVENUE ····· 8 72^ 55'30.92" E 586 37 ELECTRICAL SWITCHGEAR -FORMER GASOLINE STATION PREVIOUS EXCAVATIONS FROM TANK REMOVAL STORES BUILDING 0853 STREET SHOP BUILDING 0852 -AREAS OF PLANNED EXCAVATIONS ADELINE N TELLITICALITY **FORMER** AUTOMOTIVE SHOP MICROWAVE TOWER FORMER HYDRAULIC LIFTS N 72^ 54' 07.17 W 582.85 PROPERTY CORNER

PHASE II EXCAVATION PLAN FIGURE 7

Geo Plexus, Inc.

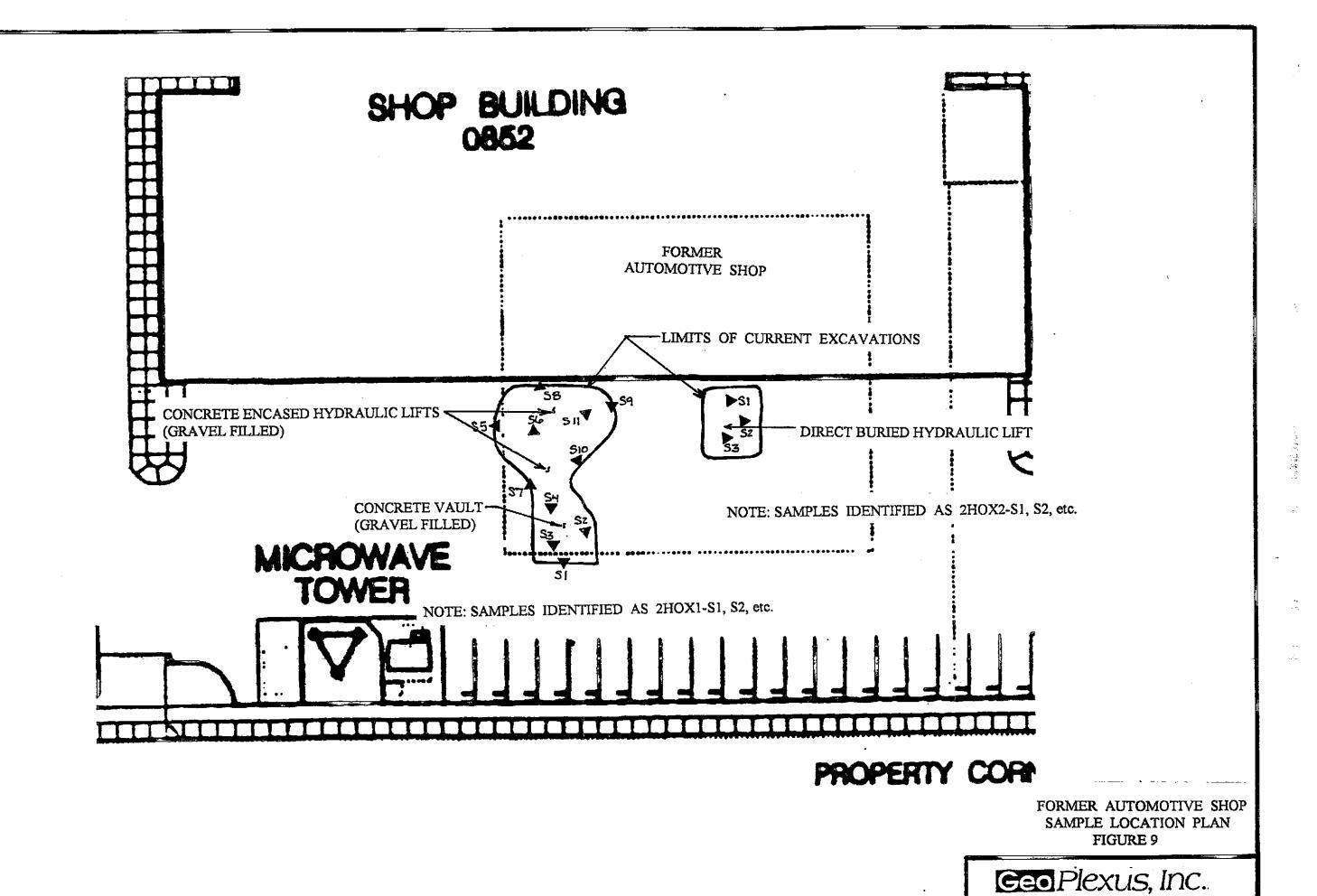
WEST GRAND AVENUE WEST GRAND AVENUE



FORMER GASOLINE STATION SAMPLE LOCATION PLAN FIGURE 8

NOTE: SAMPLES IDENTIFIED AS 20X1-S1, S2, etc.

Geo Plexus, Inc.



APPENDIX A

McCAMPBELL ANALYTICAL DHS CERTIFICATION DOCUMENTS

Certificate No.: 1644

DEPARTMENT OF HEALTH SERVICES

2151 BERKELEY WAY BERKELEY, CA 94704-1011 (510)540-2800

April 29, 1996



Edward Hamilton McCampbell Analytical, Inc. 110 2nd. Avenue, South, #D7 Pacheco, CA 94533

Dear Mr. Hamilton:

This is to advise you that the laboratory named above has been certified as an environmental testing laboratory pursuant to the provisions of the California Environmental Laboratory Improvement Act of 1988 (Health and Safety Code, Division 1, Part 2, Chapter 7.5, commencing with Section 1010).

The fields of testing for which this laboratory has been certified under this Act are indicated in the enclosed "List of Approved Fields of Testing and Analytes." Certification shall remain in effect until October 31, 1997 unless revoked. This certificate is subject to an annual fee as prescribed by Section 1017(a), Health and Safety Code, on the anniversary date of the certificate.

Please note that your laboratory is required to notify the Environmental Laboratory Accreditation Program of any major changes in the laboratory such as the transfer of ownership, change of laboratory director, change in location, or structural alterations which may affect adversely the quality of analyses (Section 1014(b), California Health & Safety Code).

Please note that the new regulations pertaining to environmental laboratories were adopted on December 5, 1994 and may be found in the California Code of Regulations, Title 22, Division 4, Chapter 19, Sections 64801 through 64827.

Your continued cooperation is essential in order to establish a reputation for the high quality of the data produced by environmental laboratories certified by the State of California.

If you have additional questions, please contact Nelson Lan at (510) 540-2800.

Sincerely,

George C. Kulasingam, Ph.D., Manager

George C. Kulugn

Environmental Laboratory Accreditation Program

Enclosure

ENVIRONMENTAL LABORATORY ACCREDITATION/REGISTRATION List of Approved Fields of Testing and Analytes

McCampbell Analytical, Inc. 110 2nd Avenue South, #D7 Pacheco, CA

TELEPHONE No: (510) 798-1620 CALIFORNIA COUNTY: Contra Costa

CERTIFICATE NUMBER: 1644 EXPIRATION DATE: 10/31/97

Microbiology of Drinking Water and Wastewater (-----) Fecal Coliforms/E. Coli in Drinking Water by MTF 1.2 1.3 Total Coliforms in Drinking Water by Membrane Filter Technics 1.4 1.5 Total Coliforms in Drinking Water by Clark's Presence/Absence 1.6 1.7 Fecal Coliforms/E. Coli in Drinking Water by Clark's Presence/Absence Heterotrophic Plate Count 1.8 1.9 Total Coliforms in Wastewater by Multiple Tube Fermentation -----Fecal Coliforms in Wastewater by MTF ------1.10 1.11 Total Coliforms in Wastewater by Membrane filter Technics Fecal Coliforms in Wastewater by Membrane Filter Technics 1.12 Fecal Streptococci or Enterococci by Multiple Tube Technics -----1.13 Fecal Streptococci or Enterococci by Membrane Filter Technics 1.14 2 Inorganic Chemistry and Physical Properties of Drinking Water excluding Toxic Chemical Elements (-----) Alkalinity ----- N 2.1 2.12 Sulfate ----- N Calcium ------2.2 2.13 Total Filterable Residue Chloride ----- N 2.3 and Conductivity ------ Corrosivity ------ N 2.4 2.14 Iron (Colorimetric Methods Only) ----- N Fluoride 2.5 2.15 Manganese (Colorimetric Methods Only) - N Hardness ----- N 2.6 2.16 Phosphate, ortho ----- N Magnesium ------ K 2.7 Silica (Colorimetric Methods Only) ---- N 2.17 2.8 MBAS ----- N 2.18 Cyanide ----- k Witrate ----- N 2.9 Nitrite ----- N 2.10 Sodium ----- N 2.11 Analysis of Toxic Chemical Elements in Drinking Water (-----) 3 Arsenic ----- N 3.1 Silver ----- N 3.11 Barium ----- N 3.2 3.12 Cadmium ----- N Aluminum ------ N 3.3 3.13 Chromium, total ----- N 3.4 3.14 Copper ----- N EPA Method 200.7 ------ N 3.5 3.15 3.6 3.16 EPA Method 200.8 (Unregulated Elements Lead ----- N 3.7 and Lead Only) ----- N Antimony ---- N Manganese ----- N 3.8 3.17 Beryllium ----- Nickel ----- N Mercury ----- N 3.9 3.18 Selenium ------ N 3.10 3.19 Thatlium ----- N 3.20 4 Organic Chemistry of Drinking Water (measurement by GC/MS combination) (-----) EPA Method 501.3 ------4.1 EPA Method 524.2 ------ N 4.2 4.3 EPA Method 513 4.4 5 Organic Chemistry of Drinking Water (excluding measurements by GC/MS combination) (-----) 5.1 EPA Method 501.1 ----- N EPA Method 548 ----- N 5.16 EPA Method 501.2 ----- N EPA Hethod 549 ----- N 5.2 5.17 EPA Method 502.1 ----- N 5.3 EPA Method 550 ----- N 5.18 EPA Method 502.2 EPA Method 550.1 ----- N 5.4 5.19 EPA Method 551 ----- N
EPA Method 552 ---- N 5.5 EPA Method 503.1 ----- N 5.20 EPA Method 504 ----- N 5.6 5.21 EPA Method 505 5.7 EPA Method 506 ------ N 5.8 EPA Method 507 ----- N 5.9 EPA Method 508 5.10 EPA Method 508A ----- N 5.11 EPA Method 510.1 ----- N 5.12 EPA Method 515.1 ----- N 5.13 EPA Method 531.1 ----- N EPA Method 547 ----- N 5.15

CERTIFICATE NUMBER: 1644 EXPIRATION DATE: 10/31/97

Radiochemistry (-----) 6.1 Gross Alpha and Beta Radiation ---- N 6.11 Gross Alpha by Co-precipitation ----- N Radium 228 ----- N Radioactive lodine ---- N 6.2 Total Radium ----- N 6.12 Radium 226 ----- N 6.3 6.13 Uranium ----- N 6.4 Gross Alpha & Beta in Hazardous Wastes -- N 6.14 Radon 222 ----- N 6.5 6.15 Alpha Emitting Radium Isotopes Radioactive Cesium ----- N 6.5 in Haz. Wastes ----- N lodine 131 ----- N 6.7 Radium 228 in Hazardous Wastes ----- N 6.16 Radioactive Strontium ----- N 6.8 Tritium ----- W 6.9 6.10 Gamma and Photon Emitters ----- N Shellfish Sanitation (-----) 7.1 7.2 Domoic Acid ------7.3 8 Acuatic Toxicity Bioassays (-----) 8.1 Hazardous Waste Aquatic Toxicity Bioassay (Title 22, CCR, 66261.24(a)(6)) ------ N Wastewater Testing According to Kopperdahl (1976) using Freshwater Fish. 8.2 8.3 Wastewater Testing According to EPA/600/4-85/013 using Freshwater and/or Marine Organisms ----- N 8.4 Wastewater Testing by EPA Method 1000.0 ------ N Wastewater Testing by EPA Method 1002.0 ----- N 8.5 Wastewater Testing by EPA Method 1003.0 8.6 Wastewater Testing by EPA Method 1006 8.7 Wastewater Testing by EPA Method 1007 8.8 Wastewater Testing by EPA Method 1009 ----- N 8.9 8.10 Wastewater Testing According to Anderson, et. al. (1990) using Giant Kelp (Macrocystis pyrifera) -- N Wastewater Testing According to Anderson, et. al. (1990) using Red Abalone (Haliotus rufescens) --- N 8.11 8.12 Wastewater Testing According to Dinnel and Stober (1987) using Purple Sea Urchin (<u>Strongvlocentrotus purpuratus</u>) ------ N 8.13 Wastewater Testing According to Dinnel and Stober (1987) using Red Sea Urchin (Strongylocentrotus franciscanus) 8.14 Wastewater Testing According to Dinnel and Stober (1987) using Sand Dollar 8.15 Wastewater Testing According to procedure E 724-89 (ASTM, 1989) using Pacific Dyster (Crassostrem gigas) 8.16 Wastewater Testing According to procedure E 724-89 (ASTM, 1989) using California Bay Mussel (Mytilus edulis) -----8.17 Wastewater Testing According to Standard Methods (APNA, 1989) using an alga Wastewater Testing According to EPA/600/4-90/027 using Freshwater and/or Marine Organisms ------ N 8.18 9 Physical Properties Testing of Hazardous Waste (06-24-92) 9.1 9.2 9.3 9.4 Inorganic Chemistry and Toxic Chemical Elements of Hazardous Waste 10 Antimony Cobalt 7200(05-21-93) ------ Y 7201(------) ------ N 7040(----- N 7041(----- N 10.2 10.8 7210(05-21-93) ------ Y 7211(-----) N 7060(05-21-93) ----- Y 7061(07-26-94) ----- Y Barium 10.9 Lead 7420(05-21-93) ------ Y 7421(05-21-93) ------ Y 7080(----- N 7081(----- N Beryllium 10.10 Mercury 7470(07-26-94) ----- Y 7471(07-26-94) ----- Y 7090(05-21-93) ----- Y 7091(05-21-93) ----- Y 10.5 Cadmium 10.11 Molybdenum 7130(05-21-93) ----- Y 7480(----- N 7131(----- N 7481(------) 10.6 Chromium, total 10.12 7520(05-21-93) ----- Y 7190(-----) ------ N 7191(------ N

EXPIRATION DATE: 10/31/97 10.13 Selenium 7740(05-21-93) ----- Y 10.19 Cyanide 7741(07-26-94) ----- Y 9010(06-24-92) ------ Y 10.14 Silver 10.20 Fluoride 300.0(------) ---------- N 340.1(------) N 7760(05-21-93) ----- Y 7761(D5-21-93) ----- Y 340.2(-----) Thallium 340.3(------) 7840(05-21-93) ----- Y 7841(05-21-93) ----- Y 10.21 Sulfide 9030(----- N 7910(----- N 10.22 Total Organic Lead (05-21-93) ----- Y 7911(----- N 10.23 EPA Method 6010(07-26-94) ------Y 10.17 Zinc 10.24 EPA Method 6020(-----) 7950(05-21-93) ----- Y 7951(----- N Chromium (VI) 7195(-----) ----- N 7196(06-24-92) ------ Y 7197(----- N 7198(----- N 11 Extraction Tests of Hazardous Waste (06-24-92) California Waste Extraction Test (WET) (Title 22, CCR, 66261.100, Appendix II) 11.1 11.2 11.3 Toxicity Characteristic Leaching Procedure (TCLP) Inorganics Only N 11.4 Toxicity Characteristic Leaching Procedure (TCLP) Extractables Only 11.5 Toxicity Characteristic Leaching Procedure (TCLP) Volatiles Only 11.6 Organic Chemistry of Hazardous Waste (measurement by GC/MS combination) 12 12.1 EPA Method 8250(-----) 12.2 12.3 12.4 12.5 12.6 Organic Chemistry of Hazardous Waste (excluding measurements by GC/MS combination) 13 EPA Method 8010(02-10-93) ----- Y 13.13 EPA Method 8310(----- N 13.1 13.14 EPA Method 632 (----- N EPA Method 8015(08-04-95) ----- Y 13.2 EPA Method 8020(10-07-91) ----- Y 13.15 Total Petroleum Hydrocarbons 13.3 (LUFT Manual) (10-07-91)-----Y
13.16 EPA Method 8011(----- N EPA Method 8030(----- N 13.4 EPA Method 8040(----- N 13.5 13.17 EPA Method 8021(------) N
13.18 EPA Method 8070(------) N
13.19 EPA Method 8110(------- N
13.20 EPA Method 8141(------- N
13.21 EPA Method 8141(------- N EPA Method 8060(----- N 13.6 EPA Method 8080(08-04-95) ----- Y 13.7 EPA Method 8090(----- N 13.8 EPA Method 8100(----- N 13.9 13.21 EPA Method 8330(------) 13.10 EPA Method 8120(----- N EPA Method 8140(----- N 13.12 EPA Method 8150(----- N 14 Bulk Asbestos Analysis (-----) 1% or Greater Asbestos Concentrations (Title 22, ECR, 66261.24(a)(2)(A)) -------14.1 Substances Regulated Under the California Safe Drinking Water and Toxic Enforcement Act 15 (Proposition 65) and Not Included in Other listed Groups. Wastewater Inorganic Chemistry, Nutrients and Demand (10-07-91) 16 Acidity ----- N 16.13 Cyanide amenable to Chlorination ----- N 16.1 16.14 Fluoride ----- N 16.15 Hardness ---- N Alkalinity ----- N 16.2 Ammonia ----- N 16.3 16.16 Kjeldahl Nitrogen ---- N 16.17 Magnesium --- Y Biochemical Oxygen Demand ----- N 16.4 Boron ----- Y 16.5 Bromide ----- N 16.6 Calcium 16.7 16.20 Oil and Grease -----Y CBOD ------ N 16.8 16.21 Organic Carbon ----- N Chemical Oxygen Demand ----- N 16.9 16.22 Oxygen, Dissolved ----- N 16.10 Chloride ----- N 16.11 Chlorine Residual, total ----- N 16.12 Cyanide ----- N

CERTIFICATE NUMBER: 1644

CERTIFICATE NUMBER: 1644 EXPIRATION DATE: 10/31/97 16.23 pH ------ y Surfactants (MBAS) ----- N Tannin and Lignin ----- N Phenois ----- N 16.24 16.40 Phosphate, ortho- ----- N Turbidity ------16.25 16.41 Phosphorus, total ----- N 16.26 Iron (Colorimetric Only) ------ N 16.42 Potassium ----- Y 16.27 16.43 Manganese (Colorimetric Only) ----- N 16.28 Residue, Total 16.44 Total Recoverable Residue, Filterable (TDS) ----- Y 16.29 Petroleum Hydrocarbons ---- Y 16.30 Residue, Nonfilterable (TSS) ----- Y Total Organic Halides ----- N 16.45 Residue, Settleable (SS) ----- N 16.31 Residue. Volatile ------ N 16.32 Silica ----- Y 16.33 Sodium ------ Y 16.34 Specific Conductance ----- Y 16.35 16.36 Sulfate ----- N Sulfide (includes total & soluble) - N 16.37 16.38 Sulfite ----- N 17 Toxic Chemical Elements in Wastewater (05-21-93) Aluminum ----- y 17.1 17.18 Nickel ----- y Antimony ------ N Osmium 17.2 17.19 17.3 Palladium ----- W 17.20 Barium Platinum ----- N 17.4 17.21 Beryllium ------ Y 17.5 Rhodium ------17.22 Cadmium ----- Y 17.6 Ruthenium ------17.23 Chromium (VI) Selenium ----- Y 17.7 17.24 Chromium, total Silver 17.8 17.25 Cobalt ----- Y Strontium ------17.9 17.26 Copper 17.10 Thatlium ----- y 17.27 Gold ----- N Tin ------ N 17.11 17.28 17.12 Titanium ----- N 17.29 Iron 17.13 17.30 Vanadium ------ N Lead ----- Y 17.14 Zinc ------ y 17.31 17.15 Manganese ------ N EPA Method 200.7 ------ Y 17.32 17,16 Mercury ------ Y EPA Nethod 200.8 ----- N 17.33 Molybdenum ------ N 17.17 17.34 Asbestos ------17.35 18 Organic Chemistry of Wastewater (measurements by GC/MS combination (08-04-95) EPA Method 624 -----18.1 EPA Method 625 -------18.2 EPA Method 1613 ------18.3 EPA Method 1625 18.4 EPA Method 613 18.5 19 Organic Chemistry of Wastewater (excluding measurements by GC/MS combination) (06-24-92) EPA Method 681 ----- Y 19.1 19.8 EPA Method 608 ----- Y EPA Method 602 ----- Y 19.2 19.9 EPA Method 609 -----EPA Method 603 ----- N 19.3 19.10 EPA Method 610 ----- N EPA Method 604 ----- N 19.4 19.11 EPA Method 611 ----- N EPA Method 605 ----- N 19.5 19.12 EPA Method 632 ----- N 19.6 EPA Method 606 ----- N 19.13 EPA Method 619 ----- N EPA Method 607 ----- N 19.7 20 Inorganic Chemistry and Toxic Chemical Elements of Pesticide Residues in Food (----) 20.1 Processed Foods by One of the Following Methods Atomic Absorption Spectrophotometry Inductively Coupled Plasma Atomic Emission Spectrophotometry Inductively Coupled Plasma/Mass Spectrometry Colorimetry 20.2 Raw Commodities by One of the Following Methods Atomic Absorption Spectrophotometry Inductively Coupled Plasma Atomic Emission Spectrophotometry Inductively Coupled Plasma/Mass Spectrometry 20.3 Dairy Products by One of the Following Methods Atomic Absorption Spectrophotometry ------y

Inductively Coupled Plasma Atomic Emission Spectrophotometry

Inductively Coupled Plasma/Mass Spectrometry

Colorimetry

CERTIFICATE NUMBER: 1644 EXPIRATION DATE: 10/31/97

20.4	Feed Products by One of the Following Methods Atomic Absorption Spectrophotometry Inductively Coupled Plasma Atomic Emission Spectrophotometry Inductively Coupled Plasma/Mass Spectrometry Colorimetry		- 1
21	Organic Chemistry of Pesticide Residues in Food (measurements by GC/MS) ()		
21.1 21.2	Gas Chromatographic/Mass Spectrometric Methods in Processed Foods		. į
21.3	Gas Chromatographic/Mass Spectrometric Methods in Dairy Products		.)
21.4	Gas Chromatographic/Mass Spectrometric Methods in Feed Products		•)
22	Organic Chemistry of Pesticide Residues in Food (Excluding Measurement by GC/MS Combina	ition)	
22.1	Halogenated Compounds in Processed Foods by One of the Following Methods Gas Chromatography		
	High Pressure Liquid Chromatography		N
22.2	Liquid Chromatography/Mass Spectrometry		N
22.2	Organophosphorous Compounds in Processed Foods by One of the Following Methods Gas Chromatography		M
	High Pressure Liquid Chromatography		Ы
	Liquid Chromatography/Mass Spectrometry		N
22.3	Carbamates in Processed Foods by One of the Following Methods Gas Chromatography		
	High Pressure Liquid Chromatography		
	Liquid Chromatography/Mass Spectrometry		
22.4	Halogenated Compounds in Raw Commodities by One of the Following Methods		
	Gas Chromatography		N
	High Pressure Liquid Chromatography		N
20 -	Liquid Chromatography/Mass Spectrometry		N
22.5	Organophosphorous Compounds in Raw Commodities by One of the Following Methods Gas Chromatography		
	High Pressure Liquid Chromatography		N
	Liquid Chromatography/Mass Spectrometry		N
22.6	Carbamates in Raw Commodities by One of the Following Methods		
	Gas Chromatography		N
	High Pressure Liquid Chromatography		N
~~ ~	Liquid Chromatography/Mass Spectrometry		N
22.7	Halogenated Compounds in Dairy Products by One of the Following Methods Gas Chromatography		
	High Pressure Liquid Chromatography		N
	Liquid Chromatography/Mass Spectrometry		N
22.8	Organophosphorous Compounds in Dairy Products by One of the Following Methods		П
	Gas Chromatography		N
	High Pressure Liquid Chromatography		
	Liquid Chromatography/Mass Spectrometry		N
22.9	Carbamates in Dairy Products by One of the Following Methods		
	Gas Chromatography		N
	Liquid Chromatography/Mass Spectrometry		N
22,10	Halogenated Compounds in Feed Products by One of the Following Methods		N
	Gas Chromatography		ы
	High Pressure Liquid Chromatography		N
	Liquid Chromatography/Mass Spectrometry		N
22.11	Organophosphorous Compounds in Feed Products by One of the Following Methods		
	Gas Chromatography		N
	High Pressure Liquid Chromatography		N
22.12	Carbamates in Feed Products by One of the Following Methods		N
14	Gas Chrometography		ы
	High Pressure Liquid Chromatography		N
	Liquid Chromatography/Mass Spectrometry	+	N

APPENDIX B

PHASE II TEST PIT ANALYTICAL TEST DATA Geo Plexus, Inc.

1900 Wyatt Drive, Suite 1, Santa Clara, California 95054

C H A I N - O F - C U S T O D Y

Phone 408/987-0210 Fax 408/988-0815

Geor	exu	<u>S, II I</u>	<u> </u>		CHAIN	- O F	- C U 8	T	0 D 85	ү 94 А	6P.317		8/987-0210 Fax 408/988	
PROJECT NUMBER	,	PROJECT HA	NHE GBII	nv)	/ WALSH WT. CENTER			MIRC	pe of					
Send Report Atte	ntion of:			ort Du		Number	Туре	X		7			Condition	
DAVID	Alica	Ĺ	/	1	/ / /	of	of	137	200	12/2			of	Initial
Sample Number	Date	Time	Comp	Grab	Station Location	Cntnrs	Containers	17/19/	HC11	8			Samples	
5P-51	5/4/97	BIL		/	SLEVATOR PIT	ICA	6" BIMES TURKS						76133	•!
EP-52		800		- / i	Glevenon PIT -71)		/		1			76134	<u>;</u>
PITI-51		83 8		/	5W CORNER 7 913577 -31			_		1			76135	!
PIT1 52		83B		/	SWCOMME OF								76136	
GRSSTAL-		BHZ		/	3E convent 913 SIA - 31				1	\ \			76137	: !
DIPTNK		858		/	DID TANK			/	1	1			76138	1
DIPTHK 52		904		/	DIP TANK				1	1			76139) ·
PITZ -51		915		/	PIT-5UC -31			/	1				76140	
PIT Z - 5Z		918		1	PIT - SVC -71			/	1	1			76141	·
ANTUSHP		925	 	/	NE CONNER OF ANTOSHOP -3	,		/	1	1			76142	·
ANTO SHA	 \	930			NE CONNER OF	17	V	/	1	1 V			76143	,
1														
Religiouished by:	es solar wes	9999	(N)	ude	Bina 5-	G-77	Remarks:	74	/ /	19	UZ	DN	5H	
Relinquished by:	(Signature)	Date/Time	Recei	ved by	: (Signature) Dat	te/Time							MENS (THE)	
Kelinquished by:	(Signature)	Date/Time	Recei	ved by	: (Signature) Dat	e/Time		COND	ITION_		PRESERVA APPROPRI CONTAINE	ATE /		

Geo Plexus, Inc.	Client Project ID:# C95041; EBMUD/Walsh	Date Sampled: 05/06/97
1900 Wyatt Drive, Suite 1		Date Received: 05/06/97
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 05/06/97
	Client P.O:	Date Analyzed: 05/06/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWOCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylben- zene	Ху	lenes	% Rec. Surrogate
76133	EP-S1	S	3.9,j	ND	0.016	0.016	0.010	0.	025	102
76134	EP-S2	S	21,b,j	ND	0.010	0.045	0.061	O	.10	96
76135	Pit 1-S1	s	47,b,j	ND	0.026	ND	0.25		1.3	105
76136	Pit 1-S2	S	14,b,j	ND	0.030	0.007	0.017	0.	054	101
76137	Gas Sta1-S1	S	2900,j	6.2	16	8.5	7.5		13	101
76138	DIPTNK-S1	S	ND	ND	ND	ND	ND	1	ΝĎ	101
76139	DIPTNK-S2	S	ND	ND	ND	ND	ND	1	VD	100
76140	Pit 2-S1	s	ND	ND	ND	ND	ND	1	4D	101
76141	Pit 2-S2	S	2.1,j	ND	ND	ND	ND	0.	.007	104
76142	Auto Shp-S1	S	ND	ND	ND	ND	ND	1	ND_	100
76143	Auto Shp-S2	S	ND	ND	ND	ND	ND	1	ND	101
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
	ng Limit unless ise stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5		0.5	
means	not detected e reporting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0	.005	

^{*} water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/L

[#] cluttered chromatogram; sample peak coelutes with surrogate peak

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Geo Plexus, I		lient Proje	ct ID:# C95041; EBMUD/Walsh	Date Sampled:	
_				Date Received:	
Santa Clara,	CA 95054	lient Conta	nct: David Glick	Date Extracted:	05/06/97
	C	lient P.O:		Date Analyzed:	05/06/97
EPA methods m			C23) Extractable Hydrocarbons a rnia RWQCB (SF Bay Region) method G		ID(3510)
Lab ID	Client ID	Matrix	TPH(d) ⁺		% Recovery Surrogate
76133	EP-S1	S	, ND		95
76134	EP-S2	s	31,g		103
76135	Pit 1-S1	S	3.3,d	444	95
76136	Pit 1-S2	S	6.1,d		100
76137	Gas Sta1-S1	s	7000,d		102
76138	DIPTNK-S1	S	ND		. 96
76139	DIPTNK-S2	S	2.4,b		102
76140	Pit 2-S1	S	9.1,g		102
76141	Pit 2-S2	S	1.3,b	4.012	103
76142	Auto Shp-S1	S	ND		103
76143	Auto Shp-S2	S	ND		103
Reporting	Limit unless other-	w	50 ug/L		
tected above	ND means not de- e the reporting limit	S	1.0 mg/kg	·	

^{*} water samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP and STLC extracts in mg/L

[&]quot; cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant;; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

ieo Plexus, Inc	1	Client Project	ID:# C95041; EBMUD/Walsh	Date Sampled:	05/06/97
900 Wyatt Driv	ve, Suite 1			Date Received:	05/06/97
anta Clara, CA	95054	Client Contact	: David Glick	Date Extracted:	05/06/97
		Client P.O:		Date Analyzed:	05/06/97
PA methods 413.1			Grease (with Silica Gel Clean- 20 D/E&F or 503 D&E for solids and 5.		for liquids
Lab ID	Client ID	Matrix	Oil & Grease*		
76133	EP-S1	S	ND		
76134	EP-S2	S	160		
76135	Pit 1-S1	S	ND		
76136	Pit 1-S2	S	ND		
76137	Gas Sta1-S1	S	2500		
76138	DIPTNK-S1	S	ND		
76139	DIPTNK-S2	S	ND		
76140	Pit 2-S1	S	380		
76141	Pit 2-S2	S	ND		
76142	Auto Shp-SI	s	ND		
76143	Auto Shp-S2	S	ND	Anna Maria	
Reporting Li	mit unless other-	- W	5 mg/L		
	D means not de- he reporting limi		50 mg/kg	·	
-	-	-	and sludge samples in mg/kg		c 1 0/ 11

110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Geo Plexus, Inc.	Client Project ID:#	C95041; EBMUD/Walsl	Date Sampled:	05/06/97
1900 Wyatt Drive, Suite 1			Date Received:	05/06/97
Santa Clara, CA 95054	Client Contact: Day	rid Glick	Date Extracted	05/06/97
	Client P.O:		Date Analyzed:	05/06/97
· · · · · · · · · · · · · · · · · · ·	Volați	le Halocarbons		
EPA method 601 or 8010	76107	76147	i	
Lab ID	76137	76143		<u> </u>
Client ID	Gas Sta1-SI	Auto Shp-S2		
Matrix	S	S	*	
Compound	277	Concentrat	ion	
Bromodichloromethane	ND< 30	ND		
Bromoform ^(b)	ND< 30	ND		
Bromomethane (c)	ND< 30	ND ND	<u>. </u>	
Carbon Tetrachloride ^(c)	ND< 30	ND		
Chlorobenzene	ND< 30	ND		
Chloroethane	ND< 30	ND ND		
2-Chloroethyl Viny l Ether (d)	ND< 30	ND		
Chloroform (e)	ND< 30	ND		
Chloromethane	ND< 30	ND		
Dibromochloromethane	ND< 30	ND		
1,2-Dichlorobenzene	ND< 30	ND		
1,3-Dichlorobenzene	ND< 30	ND		
1,4-Dichlorobenzene	ND< 30	ND		
Dichlorodifluoromethane	ND< 30	ND		
1,1-Dichloroethane	ND< 30	ND		
1,2-Dichloroethane	ND< 30	ND		
1,1-Dichloroethene	ND< 30	ND		
cis 1,2-Dichloroethene	ND< 30	ND		
trans 1,2-Dichloroethene	ND< 30	ND		
1,2-Dichloropropane	ND< 30	ND		
cis 1,3-Dichloropropene	ND< 30	ND		
trans 1,3-Dichloropropene	ND< 30	ND		
Methylene Chloride ^(f)	ND< 30	ND		
1,1,2,2-Tetrachloroethane	ND< 30	ND		
Tetrachloroethene	ND< 30	ND		
1,1,1-Trichloroethane	ND< 30	ND		
1,1,2-Trichloroethane	ND< 30	ND ND		
Trichloroethene	ND< 30	ND ND		ļ
		ND ND		
Trichlorofluoromethane	ND< 30			
Vinyl Chloride ^(g)	ND< 30	ND 103		
% Recovery Surrogate	108	103		
Comments * water and vapor samples are report	1			

^{*} water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (i) liquid sample that contains greater than ~ 5 vol. % sediment; (j) sample diluted due to high organic content.

DHS Certification No. 1644

QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/05/97-05/06/97 Matrix: Soil

	Concent	ration	(mg/kg)		% Reco	very	
Analyte	Sample (#74888) 	MS	MSD	Amount Spiked	 MS 	MSD	RPD
TPH (gas) Benzene	0.000	2.180 0.218	2.233	2.03	107	110	2.4
Toluene Ethylbenzene	0.000	0.224 0.212	0.216 0.212	0.2	112 106	108 106	3.6
Xylenes	0.000	0.628	0.624	0.6	105	104	0.6
TPH (diesel)	 0 	305	308	 300 	102	103	0.7
TRPH (oil and grease)	0.0	25.9	26.8	26	 100 	103	3.4

% Rec. = (MS - Sample) / amount spiked x 100

RPD = $(MS - MSD) / (MS + MSD) \times 2 \times 100$

QC REPORT FOR EPA 8010/8020/EDB

Date: 05/06/97

Matrix: Soil

	Conce	entrati	on (ug/k	g)	% Reco	very	
Analyte	Sample			Amount			RPD
	(#74888) 	MS	MSD	Spiked	MS 	MSD	
				100	94	98	4.2
1,1-DCE	0	94	98	100	!	T -	
Trichloroethene	0	81	86	100	81	86	6.0
EDB	N/A	N/A	N/A	N/A	A\M	N/A	N/A
Chlorobenzene	0	84	86	100	84	86	2.4
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobz (PID)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
					l		

% Rec. = (MS - Sample) / amount spiked x 100

RPD = $(MS - MSD) / (MS + MSD) \times 2 \times 100$

1900 Wyatt Drive, Suite 1, Santa Clara, 📞

Geo P	lexu	S, INC		CHAIN	- O F	- C U S	T O D Y 8594A6	P.317 Phone 403	8/987-0210 Fax 408/98b
PROJECT NUMBER	·/	PROJECT HAM	E MA	LUPISH IUT. CENTER			Type of Analysis		Condition
Send Report Att	ention of:		Report D	Je Verbal Due	Number of	Type of Containers	1 (3) EX H d 55,20 30/20	2 (8) 2 May	of Initial
Sample Number	Date	Ţime	Comp Grab	Station Location	Cntnrs		\$ 350	205 COMO	76122
EP-51	5/4/97	BIL	/	Sleveron Pir	COR	6" BINTES TURES	1/1/1	(842)	76133
EP-52	1	BID	/	Sleveron PIT			111		76134 76135
PIT1-51		938	/	3N CORNER 7 9435M - 31			1111	XX	76136
PIT1 52		83B	/	3W CORNER 07.				XXX	
GASSTAL -		842	/	SE connent			1111	XX	76137
DIPTAK		858	/	DIP THINK			111	Ø #2	76138
DIPTHK 52	-	904	/	DIP TANK			111		76139
PIT 2 - 51		915		DIT-516 -31				Q * 2 T	76140
PIT Z - 62		918		PIT- SVC -71			///		76141
ANTOSHP		925	 -	NEC MER 9 AND SHOP 3			///	(A) # D	76142
AV10 5H P		930		NE CONNER OF ANDESTED	7	V	////		76143
52				1000					
Reliaduished b	y;xsysylatul	3 997	(N ud	· Ruca 5	ate/Time - 6-97	Remarks:	24 40	UZ DI	
Relinquished (b	v:(Signature	pate/Time			ate/Time	- ICE/T	-	PRESERVATIVE	723 METALS (PRIMIT)
Kelinquished b	y:(Signatur	pate/lim	e Received	by: (Signature) D	ate/Time	G00E	CONDITION	APPROPRIATE CONTAINERS	

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Geo Plexu	s, Inc.	Client Project	ID:# C95041; EBMUD/Walsh	Date Sampled:	05/06/97
1900 Wyat	t Drive, Suite 1			Date Received:	05/06/97
Santa Clar	a, CA 95054	Client Contac	t: David Glick	Date Extracted:	05/13-05/14/97
		Client P.O:		Date Analyzed:	05/14/97
EPA method	ls 5030, modified 8015, an	d 8020 or 602: Ca	Benzene lifornia RWQCB (SF Bay Region) meth	od GCFID(5030)	
Lab ID	Client ID	Matrix	Benzene		% Rec. Surrogate
76135	Pit 1-S1	ZHETCLP	ND		115#
76136	Pit 1-S2	ZHETCLP	ND		103
76137	Gas Sta1-S1	ZHETCLP	0.15		99
					,
-					
				:	
<u></u>				****	
Reportin	g Limit unless oth-	ZHETCLP	0.0005		
erwise stated; ND means not detected above the reporting limit		S	0.005		

^{*} water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/L

[#] cluttered chromatogram; sample peak coelutes with surrogate peak

⁺ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant (aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

Geo Plexus, Inc	Geo Plexus, Inc. 1900 Wyatt Drive, Suite 1	Clier	nt Project ID:	# C95041;	EBMUD/Wa	alsh	Dat	e Sample	d: (5/06/	97
1900 Wyatt Dri	ve, Suite 1						Dat	e Receive	d:	05/06	/97
Santa Clara, CA	A 95054	Clier	nt Contact: D	avid Glick			Dat	e Extracte	ed:	05/19)/97
		Clier	nt P.O:				Dat	e Analyze	d:	05/20	/97
EPA analytical met	hods 6010/200.7	, 239.2+]	LUFT Meta	nls*						
Lab ID	Client ID		Extraction	Cadmium	Chromium	Lea	d	Nickel	7	inc	% Rec. Surrogate
76135,36,37	Co mp.# 1	S	TTLC	ND	33	17	0	74		400	102
76133,38,40,42	Comp.# 2	s	TTLC	ND	52	9.:	5	40		44	104
						-					
Reporting Limit u		S	TTLC	0.5 mg/kg	0.5	3.	0	2.0		1.0	
above the rep		w	TTLC	0.005 mg/L	0.005	0.0	05	0.05		0.05	
			STLC,TCLP	0.01 mg/L	0.05	0.3	2	0.05		0.05	1

^{*} soil samples and sludge are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

^{*} Lead is analysed using EPA method 6010 (ICP) for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

Geo Plexus, Inc.		Client Pro	ject ID:# C9504	1; EBMUD/Walsh	Date Sampled: 0	5/06/97
1900 Wyatt Driv	e, Suite 1				Date Received:	05/06/97
Santa Clara, CA	95054	Client Co	ntact: David Gli	ck	Date Extracted:	05/20-05/22/97
	.	Client P.C):		Date Analyzed:	05/22/97
EPA analytical meth	nods 6010/200.7, 239	9.2 ⁺	Lead &	Zinc [*]		
Lab ID	Client ID	Matrix	Extraction	Lead*	Zinc*	% Recovery Surrogate
76135,36,37	Comp # 1	S	STLC	8.6	14	NA
					· · · · · · · · · ·	
		:				
-						
Reporting Limit	Reporting Limit unless otherwise stated; ND means not detected above		TTLC	3.0 mg/kg	1.0 mg/kg	
	not detected above rting limit	W	TTLC	0.005 mg/L	0.05 mg/L	
			STLC,TCLP	0.2 mg/L	0.05 mg/L	

^{*} soil and sludge samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

Lead is analysed using EPA method 6010 (ICP) for soils, sludges, STLC & TCLP extracts and method 239.2 (A Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title

^{*} surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due matrix interference

i) liquid sample that contains greater than - 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/14/97

Matrix: ZHETCLP

	Concent	ration	(mg/L)		% Reco	very	
Analyte	 Sample	MS	MSD	Amount Spiked 	MS	MSD	RPD
TPH (gas) Benzene	0.0	96.2 8.4	96.3	100.0	96.2 84.0	96.3 85.0	0.1
Toluene	0.0	8.4	8.6	10.0	84.0	86.0	2.4
Ethyl Benzene Xylenes	0.0	8.5 25.6	8.5 25.4	10.0 30.0	85.0 85.3 	85.0 84.7	0.0
TPH (diesel)	 N/A	N/A	N/A	 N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	 N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

QC REPORT FOR METALS

Date: 05/20/97 Matrix: Soil

Extraction: TTLC

	Concentr	ation			% Reco	very	
Analyte	(mg	;/kg,mg/I	رت)	Amount	_		RPD
	Sample	MS	MSD	Spiked	MS	M\$D	
–	 	·					
Arsenic	0.0	4.7	4.9	5.0	95	99	4.2
Selenium	0.0	4.2	4.1	5.0	85	83	2.2
Molybdenum	0.0	4.9	5.1	5.0	98	101	3.0
Silver	0.0	0.5	0.5	0.5	99	97	1.5
Thallium	0.0	4.7	4.7	5.0	94	93	0.3
Barium	0.0	4.2	4.1	5.0	84	82	2.4
Nickel	0.0	4.9	5.0	5.0	97	99	2.0
Chromium	0.0	5.1	5.2	5.0	101	104	2.6
Vanadium,	0.0	4.6	4.7	5.0	92	94	2.1
Beryllium	0.0	5.1	5.1	5.0	102	102	0.0
Zinc	j 0.0	5.1	5.2	5.0	102	104	1.7
Copper	j 0.0	4.3	4.3	5.0	87	85	1.8
Antimony	0.0	4.6	4.7	5.0	91	93	2.2
Lead	0.0	4.8	5.1	5.0	97	101	4.2
Cadmium	0.0	4.9	4.9	5.0	98	99	0.6
Cobalt	0.0	4.7	4.8	5.0	95	96	1.1
Mercury	0.000	0.260	0.260	0.25	104	104	0.0
				t	l		

% Rec. = (MS - Sample) / amount spiked x 100

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

APPENDIX C

PHASE II EXCAVATION ANALYTICAL TEST DATA

HAIN-OF-CUSTODY

1900 Wyatt Drive, Suite I, Santa Clara, California 95054
Phone 408/987-0210 Fax 408/988-0815

PROJECT NUMBER	11		EBM			Photoc		\$20078 1 144		10	pe of	Ana	ysis	iti				福			216)	
Send Report Atte	LIU	of:		1	port Du	The state of the s	Number of	Type		STEX /MI	20.7	30-450	į.				社会	種がす		776 7774	uit =	tial
Sample Number	Dat		Time	Comp	Greb	Station Location	Cotors	Contain	ers	1 Sud	TOHA	250			7		が正規	等人	在	1/2/2	100	
20×1-31	4/11	47	930		1	NW SIDELUMIN	lea:	U"BOA	が	~	~		1		350	09	15. The	施額				
20×1-32			930		1	SXC- BOTTOM -BI		学 。	0.	V	1	i			Ì.	**	推	難		1,00		
2041-63			940		1	NW SIDEWAII	11/3		Ť	V	~	1	3							1/1/4	112	7
2041-54			945		1	NOTTH SIDNWA'S		17.14		V	7	1				5	4	483		1/2	4 1	
20×1-55			952		1	BUTTO IL SAMPLE	. 3	1576	'n.	v	~		ħ,	£ V				湖南		773	k#	
20×1-54			1000		1	Zxc. Bostom -7		7		V	V	2		18 27		1	焚	100		<i>###</i>	alt.	
20×1 -57			1050		/	5W SIDSWAIL		No.		v	1		7.	4				+15.			₩ :)	
2041-58			1060		1	5xc. AUTTOM -91	100			V	1	9.7	4	1		6 (c)	¥		100 11	1/1/. 	14	
20×1 -59		AV.	1053		1	Exc Bottom			4	~	1	57	17	i a	-	1	N.S.				H)	1 4
20×1 -5 10	17.50	0	1125		1	SHC BOTTOM			1	'n	1			187		0.00				Ś	01	
ZUX1 - 611			1130		1	6 WALL -7.5'	30	in le	Ĥ	V	1			8 1					gt i			
20×1 -512		,	1138		1	5 WALL -5'	4	↓	ij.	1	4			3								
settinquished by	7/	V	明79	M	150		6 199	Remark	5:2	24 +	low	m	D	U31	L							
ker show shed tox	4		1420	Ou	mu n	rulenic 16/11	e yı	N	_	_	/	61	-								,	
Relinquished by:	(Signa	ture)	Date/Time	Rece	I ved/ by	: (Signature) Date	e/Time	-					1									Ť.

Geo Plexus, Inc.

8807X6P321

CHAIN-OF-CUSTODY

PROJECT NAME WALSH PACIFIC Type of Analysis PROJECT WUMBER 095041 EBMUD AMC Condition & Send Report Attention of: Report Due Verbal Due **Humber** Type DAVID GLICK Initial of Samples Containers Grab Station Location Time Сопр Sample Number Date SESIDEWALL L"Bons 20×1-513! 1147 -81 TUGE Rei Inquished by Signature) Pare/ ing Received by: (Signature) Date/Time 6/11 225pm Jenny Milenic
Received by: (Signature) Date/Time Relinquished by: (Signature) Date/Time

110 Second Avenue South, #D7, Pacheco, CA 94553 Telephone: 510-798-1620 Fax: 510-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

Geo Plexus, Inc.	Client Project ID: #C95041; Walsh	Date Sampled: 06/11/97
1900 Wyatt Drive, Suite 1	Pacific EBMUD AMC	Date Received: 06/11/97
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/11/97
	Client P.O:	Date Analyzed: 06/11-06/12/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
77406	20X1-S1	S	ND	ND	ND	ND	ND	ND	99
77407	20X1-S2	S	ND	ND	ND	ND	ND	ND	95
77408	20X1-S3	S	1.1 , j	ND	ND	ND	ND	0.012	96
77409	20X1-S4	S	2.0,j	ND	ND	ND	ND	0.017	96
77410	20X1-S5	S	3.0,j	ND	ND	0.006	ND	0.008	100
77411	20X1-S6	S	ND	ND	ND	0.006	ND	0.011	96
77412	20X1-S7	S	ND	ND	ND	ND	ND	ND	95
77413	20X1-S8	s	2.7,c,a	ND	0.040	0.018	0.013	0.084	103
77414	20X1-S9	S	3.1,c,a	ND	1.1	0.14	0.031	0.081	100
77415	20X1-S10	S	ND	ND	ND	ND	ND	ND	98
77416	20X1-S11	S	11,c,a	ND<0.2	0.055	0.033	0.019	0.12	111*
77417	20X1-S12	s	67,j	ND<0.7	4.1	0.21	0.33	0.44	108#
77418	20X1-S13	S	4.2,j	ND	0.010	0.009	ND	0.033	105
								<u></u>	1
otherw	ng Limit unless ise stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	t detected above porting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak

^{*}The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone: 510-798-1620 Fax: 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Geo Plexus, Inc.	Client Project ID: #C95041; Walsh	Date Sampled: 06/11/97
1900 Wyatt Drive, Suite 1	Pacific EBMUD AMC	Date Received: 06/11/97
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/11/97
	Client P.O:	Date Analyzed: 06/11-06/12/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

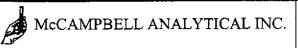
EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
77406	20X1-S1	S	1.8,g	98
77407	20X1-S2	S	ND	102
77408	20X1-S3	s	ND	105
77409	20X1-S4	s	3.2,b/g	106
77410	20X1-S5	S	3.0,b/g	103
77411	20X1-S6	S	1.4,g	100
77412	20X1-S7	S	2.6,g	100
77413	20X1-S8	S	3.8,b/g	109
77414	20X1-S9	S	ND	102
77415	20X1-S10	S	4.0,g	103
77416	20X1-S11	S	7.9,d,g	102
77417	20X1-S12	s	27,d	105
77418	20X1-S13	S	9.7,d,g	106
	imit unless otherwise	w	50 ug/L	
	ans not detected above eporting limit	S	1.0 mg/kg	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

[&]quot;cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or surrogate has been diminished by dilution of original extract.

[&]quot;The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.



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Geo Plexus, l	inc.	Clian	t Project ID: #C95041; Walsh	Date Sampled: 06/	11/97				
1900 Wyatt I			ic EBMUD AMC	Date Received: 06/	11/97				
Santa Clara,		Clien	t Contact: David Glick	Date Extracted: 06	11/97				
·		Clien	t P.O:	Date Analyzed: 06	11/97				
	Pet	roleum C	Dil & Grease (with Silica Gel Clea	n-up) *					
EPA methods 41			ds 5520 D/E&F or 503 D&E for solids and		r liqui d s				
Lab ID	Client ID	Matrix	Oil &	Grease*					
77408	20X1-S3	S		ND					
77409	20X1-S4	S	·	ND					
Reporting Lin	nit unless otherwise	W	5	mg/L					
stated; ND means not detected above the reporting limit S 50 mg/kg									
mg/L			is in mg/wipe, soil and sludge samples in mg		/ SPLP extracts in				

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/10/97-06/11/97 Matrix: Soil

Analyte	Concent: Sample	ration	(mg/kg)	 Amount	% Reco	very	RPD
	(#74306)	MS	MSD	Spiked	MS	MSD	
TPH (gas)	0.000	2.046	2.058	2.03	101	101	0.6
Benzene	0.000	0.164	0.170	0.2	82	85	3.6
Toluene	0.000	0.186	0.192	0.2	93	96	3.2
Ethylbenzene	0.000	0.190	0.194	0.2	95	97	2.1
Xylenes	j 0.000 I	0.566	0.580	0.6	94	97	2.4
TPH (diesel)	0	350	342	300	117	114	2.3
TRPH (oil and grease)	0.0	30.2	32.8	30	101	109	8.3

% Rec. = (MS - Sample) / amount spiked x 100

RPD = $\{MS - MSD\}$ / $(MS + MSD) \times 2 \times 100$

GeoPlexus, Inc. CHAIN-OF-CUBTODY

1900 Wyatt Drive, Suite 1, Santa Clara, California 95054 Phone 408/987-0210 Fax 408/988-0815

PROJECT NUMBER	2		ME WA		PACIFIC AMC			7136		f An	lysi	6	E.			77/1/2
Send Report Att	ention of:	ω,		port Du		Number	Туре	EX/		136	į	Ì	Ē		Cell	111/2/510
DAVID GE	,	H CAMACI	rru	, ,	, ,	of	of	CJOTEK	9-	5500 KENSE	13/	1.8	2			7///Non
Sample Number	Date	Time	Comp	Grab	Station Location	Cntnrs	Containers	77	1/0/1	55	质	3	1,			1/1/1/3/2
20X1-514	414/97	0836		j	B. G. B.S.	150	C"BRASS TUBE	V	V						41	7/1/0/3(8)
2011-515	4/1/97	0840		1	NORTH SIDE WALL			V	V						P	7/7/25/
20x1-516	16/	0850		1	BUTTERY BUTTERY			V	V						ก	U1/:!!00
	61 /	0960		i	G7'			V	V						0	14/456 4/4/56
2011-515	777	0905		t	BUTTER			V	V						57	7/02/5m
2021-519	1/1/17	0970		l	ERSTSINEWALL			V	V						74	1/7/25
HOX1-51	1011	1000		1	SOUTH SOPE			1	1	L	1	V	~		SHOLD	
HOX1-52	14/.1	1025		1	CE SHOW			1	1	1	V	L	ا ـــا		Ç.	7///60
HOX1-53	100	1030		1	BECQUATION OFFI			V	V	~	v	V	-		2J	of anythresidestina actual
H6K1-54	1/1/97	1033		1	BOTTOM BOTTOM			V	V	V	V	~	V		œ.	
20X1-20	9/1/97	1215		1	WEST STREWALL		1.00	V	1	1					59	
HOX1-55	91497	1243		f	DEG TOBLL		12	V	l	V	100	V	W		b	
Relinquished by	(Signature)	2/1/39	a	mul	unic MAI 6/1	e/Time 2 4:15	Remarks:	24	14	CL	Ku	154	Í			
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Geo Plexus, Inc.	Client Project ID: #C95041; Walsh	Date Sampled: 06/12/97
1900 Wyatt Drive, Suite 1	Pacific EBMUD AMC	Date Received: 06/12/97
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/12/97
	Client P.O:	Date Analyzed: 06/12-06/13/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	мтве	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
77449	20X1-S14	s	ND	ND	ND	0.006	ND	ND	99
77450	20X1-S15	S	4.5,c,a	ND 0.069 0.021 0.010		0.010	0.025	107	
77451	20X1-S16	S	6.5 _{.j}	ND	0.26	0.032	0.012	0.047	97
77452	20X1-S17	S	12,c,b	ND	0.29	0.041	0.023	0.15	101
77453	2OX1-S18	S	ND	ND	ND	ND	ND	ND	98
77454	20X1-S19	S	1.2,j	ND	0.006	0.007	NĎ	0.021	101
77456	HOX1-S2	S	ND	ND	ND	ND	ND	ND	99
77457	HOX1-S3	S	ND	ND	ND	ND	ND	ND	104
77458	HOX1-S4	S	ND	ND	ND	ND	NĎ	ND	95
77459	20X1-20	S	2.6,g	ND	ND	ND	ND	0.014	104
77460	HOX1-S5	S	ND	0.61	ND	ND	ND	0.019	102
77461	HOX1-S6	S	ND	ND	ND	ND	ND	ND	105
77462	HOX1-S7	S	ND	ND	ND	ND	ND	ND	102
77463	HOX1-S8	s	ND	1.2	0_040	0.084	ND	0.017	103
	ng Limit unless use stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	t detected above porting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

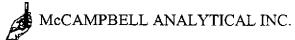
^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern

[&]quot; cluttered chromatogram; sample peak coclutes with surrogate peak

CHAIN-OF-CUSTODY 1900 Wyatt Drive, Suite 1, Santa Clara, California 95054
Phone 408/987-0210 Fax 408/988-0815

PROJECT NUMBER		PROJECT NA			PACIFIC			T)	ре с	200	etys	is	2				7/1.14	'n	
Send Report Att	ention H:		l Re	port Du		Humber	Type of	KITEL/NIT	'A'	grette:	Q	\$15	Smerne				0000 1000		
Sample Number	Date	Time	Comp	Grab	Station Location	Cntnrs	Containers	17/19	哲	1700	30,08	PN A'S	15				1144		
HUX1-56	9/2/27	1250		1	BUTTOM NUKTHUNEST®10	ICA	U'BMASS TUBE	V	/	V	V	V	1		81		ni/a	15	
11021 1	1/12/97	1303		/	O 8	4		V	V	1	1				r.		/////(j	6	
	1/17/97	1310			N. 5108 2134			V	V	U	V				13		////6	<i>ii</i> / .	
HOK1-59	1497	1317		/	BOTTOM NORTHEASTERN			V	L	1	L	1	1		UA	STITUTE OF	nyee		
Hax1-310	1/1/97	1323		/	BOTTOMELL			ι	1	//	٧,	/	11		S	200	////46		
HOKI -511	6/12/87	1345		/	30570ME11'			/	/	/	1	/			4		11/1/4	0	
	9/14/97	1410		/	MONTH @ 11			V	1	1	-	1			เก				
2H0×1-52	4/2/97	1420		1	CHTM @11'			ν	V	V	V	V	4		-				
ZH01-53	4/12/97	1425		1	BOTTEN SOUTH & 11'			V	L	1	1	1	1		S				
20×1-54	Uraho	1431		1	N. GDE @10:	5	↓	V	V	1		~	1		10				
							1	л°.	-					FVATIVE!	AS OZO	MEIA	IS UTIEN		
								ND S					APPRO CONTA	OPRIATE I	-		potential.		
Relinquished by:	(Signature)	00/5/2019 10/3	91	nile	nic MAI 6	te/Time 12 4:15	Remarks:	24	11	60.	L	Re	154						
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Relinquished by:	(Signature)	Date/Time	Rece	ived by:	(Signature) Da	te/Time	MARC	ep.	1 7	512	EC7	"	TV JU	eten C	41 1007	010	ישיכ -	7375	/00



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Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/12/97
	Client P.O:	Date Analyzed: 06/12-06/13/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	$TPH(g)^{^{+}}$	MTBE	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
77464	HOX1-S9	S	ND	ND	ND	ND	ND	ND	99
77465	HOX1-S10	S	ND	ND	ND	ND	ND	ND	100
77466	HOX1-S11	S	ND	ND	ND	ND	ND	ND	100
77467	2HOX1-S1	S	ND	ND	ND	ND	ND	ND	99
77468	2HOX1-S2	S	ND	ND	ND	ND	ND	ND	100
77469	2HOX1-S3	S	ND	ND	ND	ND	ND	ND	100
77470	2HOX1-S4	S	ND	ND	ND	ND	ND	ND	99
		ļ							
	ng Limit unless ise stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means no	t detected above porting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant; are significant; are significant; are significant; are significant; are significant; b) heavier gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak



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	Client P.O:	Date Analyzed: 06/12-06/13/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)⁺	% Recovery Surrogate
77449	20X1-S14	S	ND	103
77450	20X1-S15	S	3.8,g	103
77451	20X1-S16	S	ND	104
77452	20X1-S17	S	5.3,d,g	106
77453	2OX1-S18	S	1.2,g	108
77454	2OX1-S19	S	1.5,g	104
77456	HOX1-S2	s	3.3,g	103
77457	HOX1-S3	s	1.8,g	100
77458	HOX1-S4	S	3.7,g	101
77459	2OX1-20	s	11,g,b	104
77460	HOX1-S5	S	4.7,g	102
77461	HOX1-S6	S	1.8,g	102
77462	HOX1-S7	S	3.5,g	103
77463	HOX1-S8	S	5.6,g	107
	imit unless otherwise	w	50 ug/L	
	stated; ND means not detected above the reporting limit		1.0 mg/kg	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

^{*} cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.



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Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/12/97
	Client P.O:	Date Analyzed: 06/12-06/13/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

FPA methods modified 8015, and 3550 or 3510; California RWOCR (SE Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
77464	HOX1-\$9	S	ND	101
77465	HOX1-S10	S	ND	103
77466	HOX1-S11	S	1.8 _s g	105
77467	2HOX1-S1	S	ND	103
77468	2HOX1-S2	s	ND	103
77469	2HOX1-S3	S	ND	105
77470	2HOX1-S4	S	ND	105
		·		
Reporting Limit unless otherwise		W	50 ug/L	
stated; ND me: the re	ans not detected above porting limit	S	1.0 mg/kg	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

^{*} cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.



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Geo Plexus, Inc. 1900 Wyatt Drive, Suite 1	CULL A DESCRIPTION OF THE WAR AND A STATE OF	Date Sampled: 06/12/97								
	Client Project ID: #C95041; Walsh Pacific EBMUD AMC	Date Received: 06/12/97								
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/12/97								
	Client P.O:	Date Analyzed: 06/12/97								

Petroleum Oil & Grease (with Silica Gel Clean-up) *

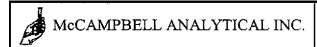
EPA methods 413.1, 9070 or 9071; Standard Methods 5520 D/E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	Oil & Grease*
77456	HOX1-S2	s	ND
77457	HOX1-S3	s	ND
77458	HOX1-S4	S	ND
77459	2OX1-20	S	1500
77460	HOX1-S5	S	ND
77461	HOX1-S6	S	ND
77462	HOX1-S7	S	ND
77463	HOX1-S8	S	ND
77464	HOX1-S9	S	ND
77465	HOX1-S10	S	ND
77466	HOX1-S11	S	ND
77467	2HOX1-S1	S	ND
77468	2HOX1-S2	S	ND
77469	2HOX1-S3	S	ND
Reporting Lir	nit unless otherwise	W	5 mg/L
stated; ND mea	stated; ND means not detected above the reporting limit		50 mg/kg

^{*} water samples are reported in mg/L, wipe samples in mg/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in mg/L

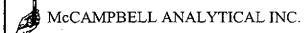
_____Edward Hamilton, Lab Director

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5vol. % sediment.



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Geo Plexus, Inc.		Q1;	D ' . TD #005047 TV 11	Date Sampled: 06/	12/97
1900 Wyatt D			Project ID: #C95041; Walsh c EBMUD AMC	Date Received: 06	/12/97
Santa Clara, CA 95054		Client	Contact: David Glick	Date Extracted: 06	/12/97
		Client	P.O:	Date Analyzed: 06	/12/97
EPA methods 41			il & Grease (with Silica Gel Cleads 5520 D/E&F or 503 D&E for solids and		r liquids
Lab ID					
77470	2HOX1-S4	S	·	ND	
					- - -
					<u> </u>
					<u></u>
	nit unless otherwise as not detected above	w	5	mg/L	
the rep	orting limit	S	50	mg/kg	
* water samples mg/L	are reported in mg/L,	wipe samples	in mg/wipe, soil and sludge samples in mg	kg, and all TCLP / STLC	/ SPLP extracts in
h) lighter than w	rater immiscible sheen	is present; i)	liquid sample that contains greater than ~5	vol. % sediment.	
DHS Certif	fication No. 1644		E	dward Hamilton, Lab	Director



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Geo Plexus, Inc.	Client Designt II	D. #C05041. Walsh	Date Sampled:	Date Sampled: 06/12/97 Date Received: 06/12/97		
1900 Wyatt Drive, Suite 1	Pacific EBMUD	D: #C95041; Walsh D AMC	Date Received:			
Santa Clara, CA 95054	Client Contact:	David Glick	Date Extracted	: 06/12/97		
	Client P.O:		Date Analyzed	: 06/12/97		
EPA method 601 or 8010	Volati	le Halocarbons	<u>-</u>			
Lab ID	77456	77457	77458	77460		
Client ID	HOX1-S2	HOX1-S3	HOX1-S4	HOX1-S5		
Matrix	S	S	S	S		
Compound		Concen	tration	"		
Bromodichloromethane	ND	ND	ND	ND		
Bromoform ^(b)	ND ND	ND	ND	ND ND		
Bromomethane	ND ND	ND	ND	ND		
Carbon Tetrachloride ^(c)	ND	ND	ND	ND		
Chlorobenzene	ND ND	ND	ND	ND		
Chloroethane	ND	ND	ND	ND		
2-Chloroethyl Vinyl Ether ^(d)	ND	ND	ND	ND		
Chloroform (e)	ND	ND	ND	ND		
Chloromethane	ND	ND	ND	ND		
Dibromochloromethane	ND	ND	ND	ND		
1,2-Dichlorobenzene	ND	ND	ND	ND		
1,3-Dichlorobenzene	ND	ND	ND	ND		
1,4-Dichlorobenzene	ND	ND	D	ND		
Dichlorodifluoromethane	ND	ND	ND	ND		
1,1-Dichloroethane	ND	ND	ND	ND		
1,2-Dichloroethane	ND	ND	ND	ND		
1,1-Dichloroethene	ND	ND	ND	ND		
cis 1,2-Dichloroethene	ND	ND	ND	ND		
trans 1,2-Dichloroethene	ND	ND	ND	ND		
1,2-Dichloropropane	ND	ND	ND	ND		
cis 1,3-Dichloropropene	ND	ND	ND	ND		
trans 1,3-Dichloropropene	ND	ND	ND	ND		
Methylene Chloride ^(f)	ND	ND	ND	ND		
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND		
Tetrachioroethene	ND	ND	ND	ND		
1,1,1-Trichloroethane	ND	ND	ND	ND		
1,1,2-Trichloroethane	ND	ND .	ND	ND		
Trichloroethene	.ND	ND ND	ND	ND ND		
Trichlorofluoromethane	ND	ND	ND	ND		
Vinyl Chloride ^(g)	ND	ND	ND	ND		
% Recovery Surrogate	97	100	98	98		
Comments				L		

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes, ND<0.2ug/wipe ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content.



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Geo Plexus, Inc.	Client Project II	D: #C95041; Walsh	Date Sampled:	Date Sampled: 06/12/97 Date Received: 06/12/97		
1900 Wyatt Drive, Suite 1	Pacific EBMUI		Date Received			
Santa Clara, CA 95054	Client Contact:	David Glick	Date Extracted	: 06/12/97		
	Client P.O:	· ·	Date Analyzed	: 06/12/97		
EPA method 601 or 8010	Volati	le Halocarbons				
Lab ID	77461	77462	77463	77464		
Client ID	HOX1-S6	HOX1-S7	HOX1-S8	HOX1-S9		
Matrix	S	S	S	S		
Compound		Сопсеп	tration			
Bromodichloromethane	ND	ND	ND	ND		
Bromoform ^(b)	ND	ND	ND	ND		
Bromomethane	ND	ND	ND	ND		
Carbon Tetrachloride(c)	ND	ND	ND	ND		
Chlorobenzene	ND	ND	ND	ND		
Chloroethane	ND	ND	ND	ND		
2-Chloroethyl Vinyl Ether(d)	ND	ND	ND	ND		
Chloroform (e)	ND	ND	ND	ND		
Chloromethane	ND	ND	ND	ND		
Dibromochloromethane	ND	ND	ND	ND		
1,2-Dichlorobenzene	ND	ND	ND	ND		
1,3-Dichlorobenzene	ND	ND	ND	ND		
1,4-Dichlorobenzene	ND	ND	ND	ND		
Dichlorodifluoromethane	ND	ND	ND	ND		
1,1-Dichloroethane	ND	ND	ND	ND		
1,2-Dichloroethane	ND	ND	ND	ND		
1,1-Dichloroethene	ND	ND	ND	ND		
cis 1,2-Dichloroethene	ND	ND	ND	ND		
trans 1,2-Dichloroethene	ND	ND	ND	ND		
1,2-Dichloropropane	ND	ND	ND	ND		
cis 1,3-Dichloropropene	ND	ND	ND	ND		
trans 1,3-Dichloropropene	ND	ND	ND	ND		
Methylene Chloride ^(f)	ND	ND	ND	ND		
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND		
Tetrachloroethene	ND	ND	ND	ND		
1,1,1-Trichloroethane	ND	ND	ND	ND		
1,1,2-Trichloroethane	ND	ND	ND	ND		
Trichloroethene	ND	ND	ND	ND		
Trichlorofluoromethane	ND	ND	ND	ND		
Vinyl Chloride ^(g)	ND	ND	ND	ND		
% Recovery Surrogate	98	100	100	96		
Comments						

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content.

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Geo Plexus, Inc. 1900 Wyatt Drive, Suite 1 Santa Clara, CA 95054	CULTAR COLOR HOOSEAL WILL	Date Sampled: 06/12/97
	Client Project ID: #C95041; Walsh Pacific EBMUD AMC	Date Received: 06/12/97
	Client Contact: David Glick	Date Extracted: 06/12/97
	Client P.O:	Date Analyzed: 06/12/97

Volatile Halocarbons

EPA method o	UL OF SULU	
	Lab I	ļ

Lab ID	77465	77466	77467	77468
Client ID	HOX1-S10	HOX1-S11	2HOX1-S1	2HOX1-S2
Matrix	S	S	S	S
Compound		Concen	itration"	
Bromodichloromethane	ND	ND	ND	ND
Bromoform ^(b)	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Carbon Tetrachloride(c)	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether(6)	ND	ND	ND	ND
Chloroform (c)	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND
cis 1,2-Dichloroethene	ND	ND	ND	ND
trans 1,2-Dichloroethene	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
cis 1,3-Dichloropropene	ND	ND	ND	ND
trans 1,3-Dichloropropene	ND	ND	ND	ND
Methylene Chloride(1)	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl Chloride ^(g)	ND	ND	ND	ND
% Recovery Surrogate	97	97	97	96
Comments				

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content.



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Geo Plexus, Inc.	Client Project II	D: #C95041; Walsh	Date Sampled: 06/12/97	
1900 Wyatt Drive, Suite 1	Pacific EBMUD		Date Received: 06	12/97
Santa Clara, CA 95054	Client Contact:	David Glick	Date Extracted: 00	6/12/97
	Client P.O:		Date Analyzed: 06	5/12/97
	Volati	le Halocarbons		<u> </u>
EPA method 601 or 8010				
Lab ID	77469	77470		
Client ID	2HOX1-S3	S2OX1-S4		
Matrix	S	S		
Compound		Concent	ration	
Bromodichloromethane	ND	ND		
Bromoform ^(b)	ND	ND		
Bromomethane	ND	ND		
Carbon Tetrachloride(C)	ND	ND		
Chlorobenzene	ND	ND		
Chloroethane	ND	ND		
2-Chloroethyl Vinyl Ether(d)	ND	ND		
Chloroform (c)	ND	ND		
Chloromethane	ND	ND		
Dibromochloromethane	ND	ND		
1,2-Dichlorobenzene	ND	ND		
1,3-Dichlorobenzene	ND	ND		
1,4-Dichlorobenzene	ND	ND		
Dichlorodifluoromethane	ND	ND		
1,1-Dichloroethane	ND	ND		
1,2-Dichloroethane	ND	ND		
1,1-Dichloroethene	ND	ND		
cis 1,2-Dichloroethene	ND	ND		
trans 1,2-Dichloroethene	ND	ND		
1,2-Dichloropropane	ND	ND		
cis 1,3-Dichloropropene	ND	ND		ļ <u></u>
trans 1,3-Dichloropropene	ND	ND		
Methylene Chloride ^(f)	ND	ND		
1,1,2,2-Tetrachloroethane	ND	ND ND	·	
Tetrachloroethene	ND	ND		
1,1,1-Trichloroethane	ND	ND		
1,1,2-Trichloroethane	ND	ND		
Trichloroethene	ND	ND ND		
Trichlorofluoromethane	ND	ND		
Vinyl Chloride ^(g)	ND	ND ND		<u> </u>
% Recovery Surrogate	97	98	<u> </u>	<u> </u>
Comments				

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes, ND<0.2ug/wipe ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than -5 vol. % sediment; (j) sample diluted due to high organic content.



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Telephone: 510-798-1620 Fax: 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Geo Plexus, Inc. 1900 Wyatt Drive, Suite 1			Client Project ID: #C95041; Walsh Pacific EBMUD AMC				Date Sampled: 06/12/97 Date Received: 06/12/97			
	lara, CA 95054		Client Contact: David Glick Date Extracted: 06						/12/97	
			Client P.O	;	Date Analy	Analyzed: 06/13/97				
LUFT Metals* EPA analytical methods 6010/200.7, 239.2*										
Lab ID	Client ID	Matrix	Extraction	Cadmium	Chromium	Lead	Nickel	Zinc	% Recovery Surrogate	
77456	HOX1-S2	S	TTLC	ND	42	11	22	40	102	
77457	HOX1-S3	S	TTLC	ND	28	6.6	28	25	102	
77458	HOX1-S4	S	TTLC	ND	40	6.3	36	44	101	
77460	HOX1-S5	S	TTLC	ND	33	5.4	18	25	97	
77461	HOX1-S6	s	TTLC	ND	34	6.6	74	45	100	
77464	HOX1-S9	S	TTLC	ND	24	4.1	28	24	103	
77465	HOX1-S10	S	TTLC	ND	25	4.8	26	26	101	
77466	HOX1-S11	S	TTLC	ND	30	5.9	42	45	98	
77467	2HOX1-S1	S	TTLC	ND	32	4.8	40	31	93	
77468	2HOX1-S2	S	TTLC	ND	35	6.6	43	33	100	
77469	2HOX1-S3	S	TTLC	ND	33	9.0	66	33	100	
77470	2HOX1-S4	S	TTLC	ND	35	4.3	30	22	102	
Reporti	ing Limit unless	S	TTLC	0.5 mg/kg	0.5	3.0	2.0	1.0		
otherv means n	vise stated; ND ot detected above	w	TTLC	0.005 mg/L	0.005	0.005	0.05	0.05		
the n	eporting limit		STLC, TCLP	0.01 mg/L	0.05	0.2	0.05	0.05		

^{*} water samples are reported in mg/L, soil and sludge samples in mg/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in mg/L

^{*} Lead is analysed using EPA method 6010 (ICP) for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC - CA Title 22

[&]quot; surrogate diluted out of range; N/A means surrogate not applicable to this analysis

[&]amp; reporting limit raised due to matrix interference

i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/12/97

Matrix: Soil

Analyte	Concentration (mg/kg) Sample			Amount	very	y RPD	
	(#75863)	MS	MSD	Spiked	MS	MSD	
TPH (gas)	0.000	1.974	2.045	2.03	97	101	3.5
Benzene	0.000	0.162	0.174	0.2	81	87	7.1
Toluene	0.000	0.184	0.180	0.2	92	90	2.2
Ethylbenzene	0.000	0.192	0.182	0.2	96	91	5.3
Xylenes	0.000	0.632	0.536	0.6 	105	89	16.4
TPH (diesel)	0	319	316	300	106	105	0.8
TRPH (oil and grease)	0.0	22.4	22.3	20.8	108	107	0.4

% Rec. = (MS - Sample) / amount spiked x 100

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/13/97

Matrix: Soil

		very					
Analyte	Sample (#75863) 	MS	MSD	Amount Spiked	MS	MSD	RPD
TPH (gas) Benzene Toluene Ethylbenzene Xylenes	0.000 0.000 0.000 0.000	1.846 0.174 0.180 0.182 0.538	2.150 0.184 0.192 0.194 0.572	2.03 0.2 0.2 0.2 0.6	91 87 90 91	106 92 96 97 95	15.2 5.6 6.5 6.4 6.1
TPH (diesel)	0	320	320	300	107	107	0.0
TRPH (oil and grease)	0.0	22.0	21.3	20.8	106	102	3.2

[%] Rec. = (MS - Sample) / amount spiked x 100

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

QC REPORT FOR EPA 8010/8020/EDB

Date: 06/12/97

Matrix: Soil

	Conce	entrati	on (ug/k	3)	% Reco	very	
Analyte	Sample			Amount			RPD
	(#75863) 	MS	MSD	Spiked	MS 	MSD	
		0.0	89	100	89	89	0.0
1,1-DCE	0	89		!		Γ -	
Trichloroethene	0	82	82	100	82	82	0.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	85	85	100	85	85	0.0
Benzene	N/A	N/A	N/A	 N/A	 N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	n/A	N/A
Chlorobz (PID)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	l			l			

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) $\times 2 \times 100$

QC REPORT FOR ICP and/or AA METALS

Date: 06/13/97

Matrix: Soil

Extraction: TTLC

		Concent	ration			% Reco	very	
Analyte		(mg	g/kg,mg/	L)	Amount			RPD
	ļ 1	Sample	MS	MSD	Spiked 	MS	MSD	
Total Lead	į	0.0	4.76	4.79	5.0	95	96	0.6
Total Cadmi	um İ	0.0	5.30	5.24	j 5.0 j	106	105	1.1
Total Chrom	!	0.0	5.29	5.23	j 5.0 j	106	105	1.0
Total Nicke	ı İ	0.0	4.91	4.97	5.0	.98	99	1.4
Total Zinc	į	0.0	5.46	5.39	5.0	109	108	1.3
Total Coppe	r	0.00	4.78	4.74	5.0	96	95	0.8
STLC Lead		N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

CUSTODY RECORD CHAIN McCAMPBELL ANALYTICAL OF \boxtimes TURN AROUND TIME: 110 2nd AVENUE, # D7 24 HOUR 48 HOUR 5 DAY ROUTINE PACHECO, CA 94553 ANALYSIS REQUEST OTHER (510) 798-1620FAX (510) 798-1622 REPORT TO: BILL TO: ED HAMILION MAL PROJECT NUMBER: PROJECT NAME: 8814 GP-C 95041 LEAD (7240/7421/239.2/6010)
OPCANIC LEAD
RC: - 17 Matals - Priority Pollutant Metals PROJECT LOCATION: COMMENTS EPA 524/8240/8260 METHOD SAMPLING MATRIX CONTAINERS PRESERVED EPA 501/8010 EPA 502/8020 EPA 508/8080 508/8080 SAMPLE EPA 625/8270 LOCATION LUFT Metais PAHS DATE TIME SLUDGE OTHER OTHER HO3 Ę, 3 €. 댏 HOX1-52 6/12 OIA 1025 **V09** 77456 HOX1-53 OZA 1030 77457 HOXI-S4 034 1038 77458 HOXI-S5 04A 1243 77460 HOXI-Sb 05A 1250 77461 HOXI-S9 06A 1317 77464 HOXI-SIO 1323 079 77465 Hox1-SII 08A 1345 77466 2HOXI-SI 09A 1410 77467 2H0X1-82 LOA 1420 77468 2HOXI-S3 IIA 1425 77469 2HOXI-SY 12A 1431 77470 RECEIVED BY: Hilmoro
RECEIVED BY: Forthonds: RELINQUISHED BY: TIME 6/12 REMARKS: **5:20** Fax A.S.A.P. TIME DATE 6-12-97 18:00 RELINQUISHED BY: RECEIVED BY LABORATORY: DATE

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

McCAMPBELL ANALYTICAL 110 2ND AVE. SOUTH, #D7 PACHECO, CA 94553

EDWARD HAMILTON ATTN:

CLIENT PROJ. ID: 8814 CLIENT PROJ. NAME: GP-C95041

REPORT DATE: 06/18/97

DATE(S) SAMPLED: 06/12/97

DATE RECEIVED: d6/12/97

AEN WORK ORDER: 9706171

PROJECT SUMMARY:

On June 12, 1997, this laboratory received 12 soil sample(s).

Results of Client requested sample(s) be analyzed for chemical parameters. analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Lar¢∦ Klein

Laboratory Director

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S2 **AEN LAB NO:** 9706171-01 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 **REPORT DATE:** 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT U	NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	e 06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1.2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND	400 ug/k 400 ug/k	a a a a a a a a a a a a a a a	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

Less than normal amount of sample available for analysis; reporting limits elevated accordingly.

ND = Not detected at or above the reporting limit
 * = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S3 AEN LAB NO: 9706171-02 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 **REPORT DATE:** 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT (NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1.2.3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND	330 ug/k 330 ug/k	, a a a a a a a a a a a a a a a a a a a	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S4 AEN LAB NO: 9706171-03 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814 DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 REPORT DATE: 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT U	NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	500 ug/k 500 ug/k		06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

Less than normal amount of sample available for analysis; reporting limits elevated accordingly.

ND = Not detected at or above the reporting limit

* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S5 **AEN LAB NO:** 9706171-04 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT U	NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 ug/k 330 ug/k	aaaaaaaaaaaaaa	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S6 AEN LAB NO: 9706171-05 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814 DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 REPORT DATE: 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT		ITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	j	Extrn	Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1.2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	500 500 500 500 500 500 500 500 500 500	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	•	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

Less than normal amount of sample available for analysis; reporting limits elevated accordingly.

ND = Not detected at or above the reporting limit

* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S9 **AEN LAB NO:** 9706171-06 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 **REPORT DATE: 06/18/97**

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT U	NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 ug/k 330 ug/k	99999999999999	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S10 **AEN LAB NO:** 9706171-07 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT		ITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550			Extrn	Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 330 330 330 330 330 330 330 330 330	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg		06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: HOX1-S11 AEN LAB NO: 9706171-08 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814 DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 REPORT DATE: 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UN	IITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	_	Extrr	Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1.2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	500 ug/kg 500 ug/kg		06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

Less than normal amount of sample available for analysis; reporting limits elevated accordingly.

ND = Not detected at or above the reporting limit

* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: 2HOX1-S1 **AEN LAB NO:** 9706171-09 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT U	NITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Extr	n Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND	330 ug/k 330 ug/k		06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: 2HOX1-S2 AEN LAB NO: 9706171-10 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

DATE SAMPLED: 06/12/97 DATE RECEIVED: 06/12/97 **REPORT DATE:** 06/18/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	· · · · · · · · · · · · · · · · · · ·	Ext	rn Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 ug/ 330 ug/	ĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸ	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: 2HOX1-S3 AEN LAB NO: 9706171-11 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-	Ext	rn Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 ug, 330 ug,	kg kkgg gg gg gg kkg kkg kkg	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

McCAMPBELL ANALYTICAL

SAMPLE ID: 2HOX1-S4 **AEN LAB NO:** 9706171-12 AEN WORK ORDER: 9706171 CLIENT PROJ. ID: 8814

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT		ITS	DATE ANALYZED
#Extraction for PNAs	EPA 3550	-		Extrn	Date	06/12/97
PNAs by EPA 8270 Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene	EPA 8270 83-32-9 208-96-8 120-12-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 218-01-9 53-70-3 206-44-0 86-73-7 193-39-5 91-20-3 85-01-8 129-00-0	ND ND ND ND ND ND ND ND ND ND ND ND ND N	330 330 330 330 330 330 330 330 330 330	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	·	06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97 06/13/97

ND = Not detected at or above the reporting limit \star = Value at or above reporting limit

PAGE QR-1

AEN (CALIFORNIA) QUALITY CONTROL REPORT

AEN JOB NUMBER: 9706171 CLIENT PROJECT ID: 8814

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

<u>Definitions</u>

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

- D: Surrogates diluted out.
- I: Interference.
- !: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL REPORT

PAGE QR-2

ANALYSIS: Semi-Volatile Organics

MATRIX: Soil/Bulk

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Me INSTRUMENT: HP-5890 for Sem UNITS: ug/kg		• • • • • • • • •		BLNK 0612 : 06/12/97 : 06/12/97		INSTR RUN; GC BATCH ID: BN DILUTION: 1.	AS060997	2000000/6/
INSTRUMENT: HP-5890 for Sem		REF RESULT	PREPARED	: 06/17/97	RECOVERY (%) 66.1 68.1 64.1 70.9 64.1 95.3	BATCH ID: BN	AS060997	RPD LIMIT (%)
Bis(2-chloroethyl) Ether Bis(2-chloroethyl) Ether Bis(2-chloroisopropyl) Eth Bis(2-chloroisopropyl) Eth Bis(2-chloroisopropyl) Ether Bis(2-chloroisopropyl) Ether Bis(2-chloroisopropyl) Ether Bis(2-chloroisopropyl) Ether Bis(2-chloroinine Bis(2-chloroininine Bis(2-chloroinine Bis(2-chloroininine Bis(2-chloroininine Bis(2-chloroinininine Bis(2-chloroinininine Bis(2-chloroinininine Bis(2-chloroinininine Bis(2-chloroinininininininininininininininininini	555555555555555555555555555555555555555		330 330 330 330 330 330 330 330					

QUALITY CONTROL REPORT

PAGE QR-3

ANALYSIS: Semi-Volatile Organics

MATRIX: Soil/Bulk

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Me INSTRUMENT: HP-5890 for Sem UNITS: ug/kg METHOD:				BLNK 0612 : 06/12/97 : 06/12/97		INSTR RUI BATCH ID DILUTION	: BNA	S060997	2000000/6/	-
ANALYTE 2,4-Dimethylphenol 4.6-Dinitro-2-methylphenol 2,4-Dinitrophenol 2-Methylphenol 4-Methylphenol 2-Nitrophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	RESULT ND ND ND ND ND ND ND ND	REF RESULT	REPORTING LIMIT 330 1600 1600 330 330 330 330 330	SPIKE VALUE	RECOVERY (*)	REC LIMITS	S (%) HIGH	RPD (%)	RPD LIMIT (%)	_

METHOD SPIKE SAMPLES

SAMPLE TYPE: Laboratory Contr INSTRUMENT: HP-5890 for Semi UNITS: ug/kg METHOD:	ol Spike -volatiles			LCD 0612 06/T2/97 06/12/97		INSTR RUBATCH II	: BN/	AS060997	2000000/8/6
ANALYTE 2-Fluorophenol (surr) Phenol·d5 (surr) Nitrobenzene-d5 (surr) 2-Fluorobiphenyl (surr) 2.4.6-Tribromophenol(surr) Terphenyl·d14 (surr) Phenol 2-Chlorophenol 1.4-Dichlorobenzene N-Nitrosodi-n-propylamine 1.2.4-Trichlorobenzene 4-Chloro-3-methylphenol Acenaphthene 4-Nitrophenol 2,4-Dinitrotoluene Pentachlorophenol Pyrene	RESULT 66.0 64.9 65.7 68.3 65.1 88.1 1610 1880 1860 2050 2010 1860 1900 1560 2720 1350 3120	REF RESULT 70.7 68.8 70.5 71.6 66.0 96.3 ND ND ND ND ND ND ND ND ND	330 330 330 330 330 330 330 330 330 1600 330	SPIKE VALUE 107 101 110 101 103 101 2940 2980 2970 2750 3290 2960 2790 2960 3810 2770 3580	RECOVERY (*) 61.7 64.3 59.7 67.6 63.2 87.2 54.76 63.09 62.63 74.55 61.09 62.84 68.10 52.70 71.39 48.74 87.15	REC LIMIT LOW 41 50 43 49 55 61 45 24 60 29 53 13 40	HIGH 110 127 100 125 125 125 125 125 129 129 123 145 129 127 171 130	RPD (%)	RPD LIMIT (%)

							
SAMPLE TYPE: Laboratory Contro INSTRUMENT: HP-5890 for Semi- UNITS: ug/kg METHOD:	ol Spike volatiles		LCS 0612 : 06/I2/97 : 06/12/97			AS060997	2000000/7/6
ANALYTE 2-Fluorophenol (surr) Phenol-d5 (surr) Nitrobenzene-d5 (surr) 2-Fluorobiphenyl (surr) 2,4,6-Tribromophenol(surr) Terphenyl-d14 (surr)	RESULT RESULT 66.3 70.7 64.4 68.8 65.8 70.5 66.8 71.6 68.2 66.0 86.9 96.3	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 62.0 63.8 59.8 66.1 66.2 86.0	REC LIMITS (%) LOW HIGH 41 110 50 127 43 100 49 126 55 125 61 125	RPD (%)	RPD LIMIT (%)
Phenol 2-Chlorophenol 1,4-Dichlorobenzene N-Nitrosodi-n-propylamine 1,2,4-Trichlorobenzene 4-Chloro-3-methylphenol Acenaphthene 4-Nitrophenol 2,4-Dinitrotoluene Pentachlorophenol	1660 ND 1910 ND 1930 ND 2080 ND 2040 ND 1920 ND 1970 ND 1500 ND 2710 ND 1240 ND	330 330 330 330 330 330 330 1600 330 1600	2940 2980 2970 2750 3290 2960 2790 2960 3810 2770	56.46 64.09 64.98 75.64 62.01 64.86 70.61 50.68 71.13 44.77	41 125 45 132 24 126 60 129 38 123 49 145 50 129 29 139 53 127 13 171		
Dyrana	3130 ND	330	3580	87 43	40 130		

QUALITY CONTROL REPORT

PAGE QR-4

ANALYSIS: Semi-Volatile Organics

MATRIX: Soil/Bulk

METHOD SPIKE DUPLICATES

SAMPLE TYPE: Laboratory Contr INSTRUMENT: HP-5890 for Semi UNITS: ug/kg METHOD:		uplicate		LCR 0612 : 06/12/97 : 06/12/97		INSTR RUBATCH II DILUTION): BN/	\S060997	2000000/9/7
ANALYTE 2-Fluorophenol (surr) Phenol-d5 (surr) Nitrobenzene-d5 (surr) 2-Fluorobiphenyl (surr) 2,4,6-Tribromophenol(surr) Terphenyl-d14 (surr)	RESULT 66.0 64.9 65.7 68.3 65.1 88.1	REF RESULT 66.3 64.4 65.8 66.8 68.2 86.9	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 61.7 64.3 59.7 67.6 63.2 87.2	41 50	S (%) HIGH 110 127 100 126 125 125	RPD (%)	RPD LIMIT (%)
Phenol 2-Chlorophenol 1.4-Dichlorobenzene N-Nitrosodi-n-propylamine 1.2.4-Trichlorobenzene 4-Chloro-3-methylphenol Acenaphthene 4-Nitrophenol 2,4-Dinitrotoluene Pentachlorophenol Pyrene	1610 1880 1860 2050 2010 1860 1900 1560 2720 1350 3120	1660 1910 1930 2080 2040 1920 1970 1500 2710 1240 3130	330 330 330 330 330 330 330 1600 330 1600 330	2940 2980 2970 2750 3290 2960 2790 2960 3810 2770 3580	V., 2		0	3.058 1.583 3.694 1.453 1.481 3.175 3.618 3.922 .3683 8.494 .3200	30 30 30 30 30 30 30 30 30 30

SAMPLE SURROGATES				·		
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:		LAB ID: PREPARED: ANALYZED:	9706171-01/ 06/12/97 06/13/97	A	INSTR R BATCH I DILUTIO	UN: GCMS10\970612000000/10/ b: BNAS060997 N: 1.00
ANALYTE RESULT 2-Fluorophenol (surr) 72.0 Phenol-d5 (surr) 70.4	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 67.3 69.7 62.1 71.6 68.6 85.0	REC LIMI LOW 41 50 43 49 55 61	TS (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:		LAB ID:	9706171 · 02. 06/12/97		BATCH I	UN: GCMS10\970612000000/11/ D: BNAS060997 N: 1.00
ANALYTE RESULT 2-Fluorophenol (surr) 69.0 Phenol-d5 (surr) 69.0 Nitrobenzene-d5 (surr) 66.8 2-Fluorobiphenyl (surr) 68.9 2,4,6-Tribromophenol(surr) 72.8 Terphenyl-d14 (surr) 85.5 SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 64.5 68.3 60.7 68.2 70.7 84.7	REC LIMI LOW 41 50 43 49 55 61	TS (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:		LAB ID: PREPARED: ANALYZED:	06/12/97		INSTR R	UN: GCMS10\970612000000/12/ D: BNAS060997 N: 1.00
ANALYTE RESULT 2-Fluorophenol (surr) 62.8 Phenol-d5 (surr) 62.3 Nitrobenzene-d5 (surr) 61.3 2-Fluorobiphenyl (surr) 63.7 2,4,6-Tribromophenol(surr) 69.8 Terphenyl-d14 (surr) 84.9	ref Result	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 58.7 61.7 55.7 63.1 67.8 84.1	REC LIMI LOW 41 50 43 49 55 61	TS (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125

QUALITY CONTROL REPORT

PAGE QR-5

ANALYSIS: Semi-Volatile Organics

MATRIX: Soil/Bulk

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:		LAB ID: PREPARED: ANALYZED:	9706171-04 06/12/97 06/13/97	A		N: GCMS10\970612000000/13/ : BNAS060997 : 1.00
ANALYTE RESULT 2-Fluorophenol (surr) 63.7 Phenol-d5 (surr) 62.7 Nitrobenzene-d5 (surr) 61.0 2-Fluorobiphenyl (surr) 63.4 2,4,6-Tribromophenol(surr) 72.9 Terphenyl-d14 (surr) 85.3		LIMIT	101 110 101 103 101	RECOVERY (%) 59.5 62.1 55.5 62.8 70.8 84.5	REC LIMIT LOW 41 50 43 49 55 61	HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:				Ā		N: GCMS10\970612000000/14/ : BNAS060997
ANALYTE RESULT 2-Fluorophenol (surr) 74.5 Phenol·d5 (surr) 74.9 Nitrobenzene-d5 (surr) 73.6 2-Fluorobiphenyl (surr) 74.2 2.4.6-Tribromophenol(surr) 70.1 Terphenyl·d14 (surr) 88.3	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 69.6 74.2 66.9 73.5 68.1 87.4	REC LIMIT LOW 41 50 43 49 55 61	S (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg		LAB ID: PREPARED: ANALYZED:	9706171-06 06/12/97 06/13/97	5A	INSTR RU BATCH II DILUTION	N: GCMS10\970612000000/15/ : BNAS060997 : 1.00
ANALYTE RESULT 2-Fluorophenol (surr) 61.8 Phenol-d5 (surr) 61.6 Nitrobenzene-d5 (surr) 60.2 2-Fluorobiphenyl (surr) 61.7 2,4,6-Tribromophenol(surr) 58.0 Terphenyl-d14 (surr) 80.3	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 57.8 61.0 54.7 61.1 56.3 79.5	REC LIMIT LOW 41 50 43 49 55 61	S (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg		LAB ID: PREPARED: ANALYZED:	9706171-07 06/12/97 06/13/97	7A		N: GCMS10\970612000000/16/ D: BNAS060997
METHOD: ANALYTE RESULT 2-Fluorophenol (surr) 65.4 Phenol-d5 (surr) 64.3 Nitrobenzene-d5 (surr) 63.2 2-Fluorobiphenyl (surr) 66.3 2,4,6-Tribromophenol(surr) 58.1 Terphenyl-d14 (surr) 79.2		REPORTING LIMIT	SDIKE	RECOVERY (%) 61.1 63.7 57.5 65.6 56.4 78.4	REC LIMI LOW 41 50 43 49 55 61	TS (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg		LAB ID: PREPARED:		BA	BATCH I	UN: GCMS10\970612000000/17/ D: BNAS061297 N: 1.00
METHOD: ANALYTE RESULT 2-Fluorophenol (surr) 70.7 Phenol-d5 (surr) 70.9 Nitrobenzene-d5 (surr) 69.2 2-Fluorobiphenyl (surr) 71.6 2,4,6-Tribromophenol(surr) 67.5 Terphenyl-d14 (surr) 88.0	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 66.1 70.2 62.9 70.9 65.5 87.1	REC LIMI LOW 41 50 43 49 55 61	TS (%) RPD HIGH RPD (%) LIMIT (%) 110 127 100 126 125 125

QUALITY CONTROL REPORT

PAGE QR-6

ANALYSIS: Semi-Volatile Organics

MATRIX: Soil/Bulk

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:	DEE		9706171-09 06/12/97 06/13/97 SPIKE	RECOVERY	INSTR RUBATCH IE DILUTION REC LIMIT	N: 1.00	2000000/18/ RPD
ANALYTE RESULT 2-Fluorophenol (surr) 61.1 Phenol-d5 (surr) 60.9 Nitrobenzene-d5 (surr) 59.5 2-Fluorobiphenyl (surr) 62.6 2,4.6-Tribromophenol(surr) 65.4 Terphenyl-d14 (surr) 84.3	REF RESULT	REPORTING LIMIT	VALUE 107 101 110 110 101 103 101	(%) 57.1 60.3 54.1 62.0	LOW 41 50 43 49 55 61	HIGH RPD (%) 110 127 100 126 125 125	LIMIT (%)
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD:		LAB ID: PREPARED:			INSTR RI BATCH II DILUTIO	UN: GCMS10\97061 D: BNAS061297 N: 1.00	
ANALYTE RESULT 2-Fluorophenol (surr) 65.7 Phenol-d5 (surr) 66.8 Nitrobenzene-d5 (surr) 64.0 2-Fluorobiphenyl (surr) 66.4 2,4,6-Tribromophenol(surr) 63.7 Terphenyl-d14 (surr) 79.7	REF RESULT	REPORTING LIMIT	SPIKE VALUE 107 101 110 101 103 101	RECOVERY (%) 61.4 66.1 58.2 65.7 61.8 78.9	41 50	TS (%) HIGH RPD (%) 110 127 100 126 125 125	
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg		LAB ID: PREPARED:	9706171-11 06/12/97 06/13/97			UN: GCMS10\97061 D: BNAS061297 N: 1.00	3000000/1/
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD: ANALYTE RESULT 2-Fluorophenol (surr) 73.3 Phenol-d5 (surr) 73.5 Nitrobenzene-d5 (surr) 68.4 2-Fluorophiphenyl (surr) 66.8	REF RESULT	LAB ID: PREPARED: ANALYZED: REPORTING LIMIT	9706171-11 06/12/97 06/13/97 SPIKE VALUE 107 101 110	A RECOVERY (%) 68.5 72.8 62.2 66.1	INSTR RI BATCH II	D: BNAS061297 N: 1.00	RPD LIMIT (%)
SAMPLE TYPE: Sample-Client INSTRUMENT: HP-5890 for Semi-volatiles UNITS: ug/kg METHOD: ANALYTE RESULT 2-Fluorophenol (surr) 73.3 Phenol-d5 (surr) 73.5 Nitrobenzene-d5 (surr) 68.4 2-Fluorobiphenyl (surr) 66.8 2-4.6-Tribromophenol(surr) 57.2	REF RESULT	LAB ID: PREPARED: ANALYZED: REPORTING LIMIT LAB ID: PREPARED:	9706171-11 06/12/97 06/13/97 SPIKE VALUE 107 101 110 101 103 101	A RECOVERY (%) 68.5 72.8 62.2 66.1 55.5 76.7	INSTR RI BATCH II DILUTION REC LIMI LOW 41 50 43 49 55 61	D: BNAS061297 N: 1.00 TS (%) HIGH RPD (%) 110 127 100 126 125 125 125 UN: GCMS10\97061	RPD LIMIT (%)

----- End of Quality Control Report -----

GeoPlexus, Inc. Chain-of-cu

1900 Wyatt Drive, Suite I, Santa Clara, California 95054

Phone 408/987-0210 Fax 408/988-0815

8846 XGP324 Type of Analysis PROJECT NUMBER Condition . Verbal Due Number Type Initial of of Containers Cntnrs Station Location Grab Sample Number Comp E. END 35.WAT OX1-512B VOAS LOGG LAFTAL SLOTTER Remarks: 24 Hour Rust Date Time Received by: (Signature) Date/Time 6-18-97 12:59 Received by: (Signature) Date/Time Relinguished by ((Signature) Rélinquished by:(Signature) | Date/Time Received by: (Signature) Date/Time

110 Second Avenue South, #D7, Pacheco, CA 94553 Telephone: 510-798-1620 Fax: 510-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

Geo Plexus, Inc.	Client Project ID: #C95041; Walsh	Date Sampled: 06/18/97
1900 Wyatt Drive, Suite 1	Pacific	Date Received: 06/18/97
Santa Clara, CA 95054	Client Contact: David Glick	Date Extracted: 06/18/97
	Client P.O:	Date Analyzed: 06/18/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

Lab ID	ods 5030, modified Client ID	Matrix	TPH(g)⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recover
77688	20X1-S12B	S	27.j	ND<0.09	0.13	0.034	0.051	0.17	117*
	ng Limit unless	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	
means no	ise stated; ND t detected above porting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

f cluttered chromatogram; sample peak coelutes with surrogate peak

^{*}The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/18/97-06/19/97 Matrix: Soil

	Concentration (mg/kg)				% Recovery		
Analyte	Sample (#75871)	MS	MSD	Amount Spiked	MS	MSD	RPD
TPH (gas)	0.000	2.128	2.183	2.03	105	108	2.6
Benzene	0.000	0.186	0.196 0.202	0.2	93 96	98 101	5.2 5.1
Toluene Ethylbenzene	0.000	0.192	0.202	0.2	96	101	5.1
Xylenes	0.000	0.560	0.586	0.6	93	98	4.5
TPH (diesel)	0	348	347	300	116	116	0.3
TRPH (oil and grease)	0.0	28.0	27.3	27.3	103	100	2.5

% Rec. = (MS - Sample) / amount spiked x 100

RPD = $(MS - MSD) / (MS + MSD) \times 2 \times 100$