

CITY OF PIEDMONT  
CALIFORNIA



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**5:50 pm, Jun 21, 2012**

Alameda County  
Environmental Health

June 19, 2012

Mr. Mark Detterman  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

SUBJECT: RO0003047- City of Piedmont UST Remediation at 120 Vista Avenue  
Piedmont, California

Dear Mr. Detterman:

Attached please find a copy of the final report for the above referenced site. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,

John Wanger  
City Engineer

CC Chester Nakahara – Public Works Director  
Robert Kitay - ASE



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

June 18, 2012

SOIL AND GROUNDWATER ASSESSMENT REPORT  
ASE JOB NO. 4458

at  
City of Piedmont  
120 Vista Avenue  
Piedmont, California

Prepared by:  
AQUA SCIENCE ENGINEERS, INC.  
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## **1.0 INTRODUCTION**

This report presents the methods and findings of Aqua Science Engineer's, Inc. (ASE) soil and groundwater assessment at the City of Piedmont property located at 120 Vista Avenue in Piedmont, California (Figures 1 through 3). The site assessment activities were initiated by The City of Piedmont in response to a letter from the Alameda County Health Care Services Agency (ACHCSA) dated June 29, 2011.

## **2.0 SITE BACKGROUND AND HISTORY**

The subject site is the City of Piedmont City Hall. The former and current underground storage tanks (USTs) lie in a narrow alley between the Fire Department and Police Department buildings, immediately adjacent to the wall of the Fire Department building. An additional UST was formerly located south of the Police Department building.

### 2.1 May 1988 UST Removal

In May 1988, ASE removed three USTs from the site. These USTs consisted of a 285-gallon diesel UST and a 550-gallon gasoline UST in one excavation, and a 1,000-gallon gasoline UST in a second excavation. Soil samples collected from the excavation that contained the two smaller USTs contained up to 250 parts per million (ppm) total petroleum hydrocarbons (TPH). Two new 1,000-gallon USTs were installed in the excavation that previously contained the smaller USTs. These new USTs remain in service.

### 2.2 July 1989 Soil and Groundwater Sampling

In July 1989, Aqua Terra Technologies (ATT) drilled six soil borings at the site using a hollow-stem auger (Figure 3). The drill rig experienced refusal in all of the borings except B3 and B4, which were terminated in gravel backfill of the existing USTs. Water in these two borings contained petroleum hydrocarbon odors and a sheen. A water sample collected from the tank backfill in B4 contained 650,000 parts per billion (ppb) total petroleum hydrocarbons as gasoline (TPH-G). This sample was not analyzed for benzene, toluene, ethyl benzene, or xylenes (BTEX) or methyl tertiary butyl ether (MTBE). No TPH-G or organic lead was detected in soil samples collected from 10-feet below ground surface (bgs) in boring B1, 5-feet bgs in boring B5 and 4-feet bgs in boring B6, other than 0.013 ppm toluene in B6. These sample depths represent the depth where bedrock was encountered. Refusal was encountered at 2-feet bgs in boring B2, and no soil sample could be collected from this boring. ATT concluded that the water encountered in borings B3 and B4 was in the UST backfill only and that it was unlikely that the contamination extended beyond the UST excavation.

### 2.3 June 2011 Alameda County Health Care Services Agency Request for Workplan

On June 29, 2011, the ACHCSA requested a workplan to assess the extent of soil and groundwater contamination at the site. The directive also requested that an irrigation well located in Piedmont Park, near the site, be sampled. A workplan was prepared by ASE on



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February 1, 2012, which was subsequently conditionally approved by the ACHCSA on March 30, 2012.

### **3.0 SCOPE OF WORK (SOW)**

The purpose of this assessment was to determine whether contaminated soil or groundwater is present beneath the site related to a release from the former USTs. And to determine whether a nearby irrigation well in Piedmont Park may have been impacted from the pervious fuel release at the site. The specific scope of work was as follows:

- 1) Obtain a drilling permit from the Alameda County Public Works Agency.
- 2) Notify Underground Service Alert (USA) of the drilling and have drilling locations cleared of subsurface utility lines by a private subsurface utility line locating company.
- 3) Drill three soil borings at the site to a depth of approximately 40-feet bgs and collect soil and groundwater samples for analysis.
- 4) Collect groundwater samples from the irrigation well in Piedmont Park.
- 5) Analyze at least three soil and one groundwater sample from each boring, as well as groundwater samples collected from the off-site irrigation well, at a CAL-EPA certified analytical laboratory for TPH-G, total petroleum hydrocarbons as diesel (TPH-D), BTEX, fuel oxygenates, and lead scavengers by EPA Method 8260B.
- 6) Backfill each boring with neat cement.
- 7) Dispose of all investigation derived waste.
- 8) Prepare a report presenting the methods and findings of this assessment.

### **4.0 DRILL SOIL BORINGS AND COLLECT SAMPLES**

#### **4.1 Workplan and Permit Preparation**

ASE prepared a workplan for this project dated February 1, 2012, which was subsequently conditionally approved by the ACHCSA on March 30, 2012.

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency. A copy of the permit is presented in Appendix A.

ASE also notified Underground Service Alert (USA) to have public underground utility lines marked in the site vicinity. A private underground utility line locating service, Subtronic Corporation of Concord, California, was also contracted to clear each boring location of underground utility lines.



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## 4.2 Drilling and Soil and Groundwater Sample Collection

The ACHCSA conditional approval letter indicated a preference of using a sonic drill rig rather than the proposed mud-rotary drilling. Based on that recommendation, ASE contacted Cascade Drilling and RSI Drilling (recently merged and one of the largest drilling companies offering sonic drilling in California) regarding their experience and recommendations for drilling in the Piedmont area with a sonic drilling rig. They confirmed sonic would not be an appropriate drilling method in areas where bedrock is present. They recommended an HQ coring system (uses water to cool the drilling bit) or mud rotary. The HQ coring system will only work if the rock is unfractured and water circulation can be maintained, which is why ASE's workplan recommended mud rotary. Based on this information, ASE conducted the drilling using mud-rotary.

On May 16 and 17, 2012, V&W Drilling of Stockton, California drilled soil borings BH-A and BH-B adjacent to the smaller former, and current, USTs between the fire station and police station. Boring BH-C was drilled in the former location of the 1,000-gallon UST behind the police station. All drilling operations were conducted using mud-rotary drilling. ASE senior geologist Robert E. Kitay, P.G. directed the drilling.

The initial drilling was conducted using a hand-auger until refusal was encountered at the depth where bedrock was encountered, between approximately 4.5 to 5-feet bgs. Soil samples were collected periodically within this material. These samples were contained in laboratory supplied glass jars, sealed, labeled and chilled in an ice chest with wet ice for transport to Kiff Analytical under chain of custody documentation.

Between a few inches and a couple feet of perched water was present on top of the bedrock. Water samples were collected from this water using new, unused polyethylene bailers. The samples were contained in 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and chilled in an ice chest with wet ice for transport to Kiff Analytical under chain of custody documentation.

Soil, or in most cases rock, samples were collected at 5-foot intervals as drilling progressed using a split-barrel drive sampler advanced by repeated blows from a 140-lb. hammer dropped 18-inches. The split-barrel sampler was lined with stainless-steel tubes. Samples to be retained for analysis were immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, and labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. In some cases, there was no sample recovery in the liner, but there was rock in the sampler shoe. In these cases, the rock was removed and placed into a laboratory supplied glass jar, sealed and labeled. The samples were placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-DHS certified analytical laboratory under chain of custody documentation.

The remaining soil/rock was then described by the site geologist using the Unified Soil Classification System (USCS) and was screened for volatile compounds using a photo ionization detector (PID). The soil was screened by emptying soil into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the volatile compounds were



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allowed to volatilize, the PID measured the vapor in the bag through a small hole punched in the bag. PID readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory. The PID readings are shown on the boring logs presented in Appendix B.

#### 4.3 French Drain and Park Irrigation Well Sample Collection

In addition to water samples collected from the borings, water samples were collected from two other locations.

A French Drain is located along the north end of City Hall, west of the former and current USTs, in a potential downgradient direction. This French Drain is 12 to 16-feet deep and collects water that otherwise could flood the city hall basement. Water is then pumped out of the deepest part of the French Drain and then released out of a drain on the curb into the street. While ASE was present, the water coming out of the drain in the curb was noted as having an organic odor. Although ASE would not classify the organic odor as a gasoline or diesel-like odor, ASE collected a sample from the deepest portion of the French Drain using a bailer. During the sampling, the water was noted as containing an abundance of rotted vegetation that may have been responsible for the odor. Water samples were collected from French Drain using a new, unused polyethylene bailer. The samples were contained in 40-ml VOA vials, preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and chilled in an ice chest with wet ice for transport to Kiff Analytical under chain of custody documentation.

On May 22, ASE collected a water sample from the irrigation well located in the nearby city park. It is our understanding that this well is not currently in use. The well was sealed and not accessible for sampling with a bailer. However, a faucet that was connected to the well was opened to allow the well to drain. After approximately 10 minutes, the well pump turned on. After the pump operated for approximately 10 more minutes, water samples were collected. The groundwater samples were contained in 40-ml VOA vials, preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and chilled in an ice chest with wet ice for transport to Kiff Analytical under chain of custody documentation.

#### 4.4 Decontamination and Borehole Backfilling

Drilling equipment was cleaned with an Alconox solution between sampling intervals and between borings to prevent potential cross-contamination. Following collection of the soil and groundwater samples, each boring was backfilled with neat cement to the ground surface.

#### 4.5 Subsurface Lithology and Hydrogeology

Sediments and rock encountered during drilling generally consisted of sand, silty sand, or gravelly sand from beneath the concrete or asphalt surface to approximately 4.5-feet below bgs, where bedrock was encountered. Bedrock below approximately 4.5-feet bgs consisted of siltstone, shale, chert and greywacke sandstone. These rocks are all common within the Franciscan Formation that is present beneath the East Bay Hills. All of the drilling was extremely hard. Refusal was encountered in borings BH-A and BH-B at 30-feet bgs, and in



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boring BH-C at 29-feet. No obvious fractures were present in either BH-A or BH-B based on drill rig reaction. Numerous fractures were present in boring BH-C below 13-feet bgs, although the fractures were likely filled since there was no loss of drilling fluids. There were no obvious signs of contamination in any of the soil, rock, or water encountered in any of the borings based on odors, staining, or PID readings. However, black shale was present at some depths that had the appearance of oil shale. Perched groundwater was encountered between approximately 1 to 4-feet bgs. Boring logs are presented as Appendix B.

#### 4.6 Disposal of Investigation Derived Waste

Drilling mud and steam-cleaning water were contained in sealed and labeled 55-gallon drums and temporarily stored on-site. After receipt of the laboratory results, the waste was profiled for disposal as non-hazardous waste with Filter Recycling Services. On June 15, 2012, Evergreen Environmental Services of Hayward, California transported the drums to Filter Recycling's facility in Hayward, California where the drums were transferred to Environmental Logistics, Inc for transport to Filter Recycling Services facility in Bloomington, California for disposal. The manifest is attached in Appendix E.

### **5.0 ANALYTICAL RESULTS FOR SOIL AND ROCK**

One soil sample from the capillary zone in each boring, as well as a rock sample from 10-feet bgs in each boring (below the depth of the USTs), and one deeper sample (either 20 or 30-feet bgs) was analyzed by Kiff Analytical, LLC of Davis, California (ELAP certification #08263CA) for TPH-D by modified EPA Method 8015 (with silica gel cleanup), and TPH-G, BTEX, five oxygenates, and lead scavengers by EPA Method 8260B. The analytical results are tabulated in Table One, and the certified analytical report and chain of custody record are included in Appendix C.

No TPH-G, BTEX, oxygenates, or lead scavengers were detected in any of the soil/rock samples analyzed. Relatively low TPH-D concentrations were detected in all of the soil and rock samples analyzed. However, none of the TPH-D concentrations detected exceeded Environmental Screening Levels (ESLs) for commercial and industrial soil in areas where groundwater is a current or potential source of drinking water. These ESLs are presented in Table A of the "Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) dated May 2008.

### **6.0 ANALYTICAL RESULTS FOR GROUNDWATER**

The water samples were analyzed by Kiff Analytical, LLC of Davis, California (ELAP certification #08263CA) for TPH-D by modified EPA Method 8015 (with silica gel cleanup), and TPH-G, BTEX, five oxygenates, and lead scavengers by EPA Method 8260B. The analytical results are tabulated in Table Two, and the certified analytical report and chain of custody record are included in Appendix C. The park well analytical report and chain of custody are included in Appendix D.



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The only TPH-G, BTEX, oxygenate or lead scavenger concentration detected that exceeded a drinking water ESLs was 5.5 parts per billion (ppb) MTBE in the water sample collected from boring BH-A. Although this concentration slightly exceeds the drinking water ESL of 5.0 ppb, this concentration is still considered relatively low and does not exceed the non-drinking water ESL of 12 ppb. No further investigation or remediation should be expected for MTBE at this concentration in areas where drinking water wells are not immediately threatened.

Although not exceeding the ESL, ASE contacted the laboratory regarding the TPH-G concentration of 52 ppb in the park irrigation well, since the well would not be expected to be impacted due to its depth and location. The laboratory checked the chromatogram and reported to ASE that the TPH-G concentration was due to chloroform present in the sample. Chloroform is a breakdown of chlorine, which is used to treat municipal water. It is likely that the chloroform impacted the well from municipal water used to water the park or from leaky water lines or sewers. Since the ESL for chloroform in drinking water is 70 ppb, the presence of the chloroform should not be considered an environmental concern.

TPH-D was present in all of the samples collected from the borings and from the French Drain at concentration ranging from 2,100 ppb to 17,000 ppb. All of these concentrations, except BH-C, were flagged as higher boiling point than typical diesel fuel. ASE discussed these results with the laboratory who checked the chromatograms to see if the laboratory could determine what compounds may be responsible for these concentrations. The laboratory stated that it appeared that these concentrations were likely related to lubrication oil and not diesel fuel. Since there are no sources of lubrication oil in the site vicinity, including no automotive repair areas other than potentially at the very bottom of the slope that the site sits on (downgradient of all borings and French Drains), the source of these hydrocarbons is unknown. Since (a) these hydrocarbons do not appear to be related to an on-site source, (b) these are heavy range hydrocarbons that are non-volatile, and (c) are only in what appears to be a thin perched water zone just on the top of bedrock, these hydrocarbons do not appear to be a threat to human health or the environment. It may, however, be prudent to treat water from the French Drain prior to releasing this water to the curb/street where it could enter the storm water system and enter the San Francisco Bay.

## **7.0 CONCLUSIONS**

None of the soil or rock samples contained hydrocarbons at concentrations exceeding ESLs for drinking water.

The only TPH-G, BTEX, oxygenate or lead scavenger concentration detected that exceeded a drinking water ESL was 5.5 ppb MTBE in the water sample collected from boring BH-A. Although this concentration slightly exceeds the drinking water ESL of 5.0 ppb, this concentration is still considered relatively low and does not exceed the non-drinking water ESL of 12 ppb.

TPH-D was present in all of the water samples collected from the borings and from the French Drain at concentration ranging from 2,100 ppb to 17,000 ppb. The majority of these TPH-D results were flagged as higher boiling point than typical diesel fuel. ASE discussed these results with the laboratory. The laboratory stated that it appeared that these concentrations were likely





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related to lubrication oil and not diesel. Since there are no sources of lubrication oil in the site vicinity, the source of these hydrocarbons is unknown.

Since (a) these hydrocarbons do not appear to be related to an on-site source, (b) these are heavy range hydrocarbons that are non-volatile, and (c) are only in what appears to be a thin perched water zone just on the top of bedrock, these hydrocarbons do not appear to be a threat to human health or the environment. It may, however, be prudent to treat water from the French Drain prior to releasing this water to the curb where it could enter the storm water system and enter the San Francisco Bay.

## **8.0 RECOMMENDATIONS**

ASE recommends that the ACHCSA issue a “No Further Action” letter for this case. ASE does not recommend any further assessment or remediation related to the minor MTBE concentrations and TPH-D range hydrocarbons that do not appear to be related to an on-site source detected in water samples from the borings and the French Drain at the site.

ASE does believe, however, that it would be prudent to treat water from the French Drain prior to releasing this water to the curb where it could enter the storm water system and eventually the bay.

## **9.0 REPORT LIMITATIONS**

The results presented in this report represent conditions at the time of the soil, rock and groundwater sampling, at the specific locations at which the samples were collected, and for the specific parameters analyzed by the laboratory.

This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.



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Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'Robert E. Kitay', written in a cursive style.



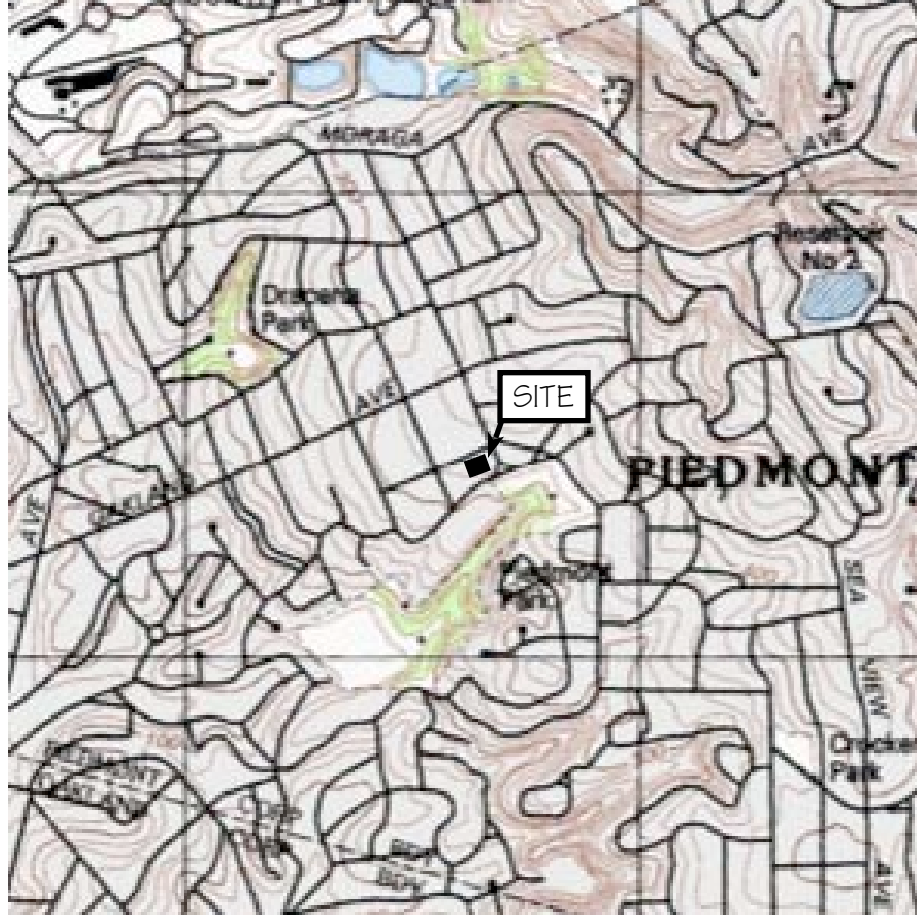
Robert E. Kitay, P.G., R.E.A.  
Senior Geologist

Attachments: Figures 1 through 4  
Tables One and Two  
Appendices A through E



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## **FIGURES**



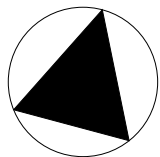
SITE LOCATION MAP

City of Piedmont  
120 Vista Avenue  
Piedmont, California

DATE: 02/02/12

AQUA SCIENCE ENGINEERS, INC.

FIGURE 1



NORTH

NOT TO SCALE

## SITE LOCATION MAP

City of Piedmont  
 120 Vista Avenue  
 Piedmont, California

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Figure 2

SIDEWALK



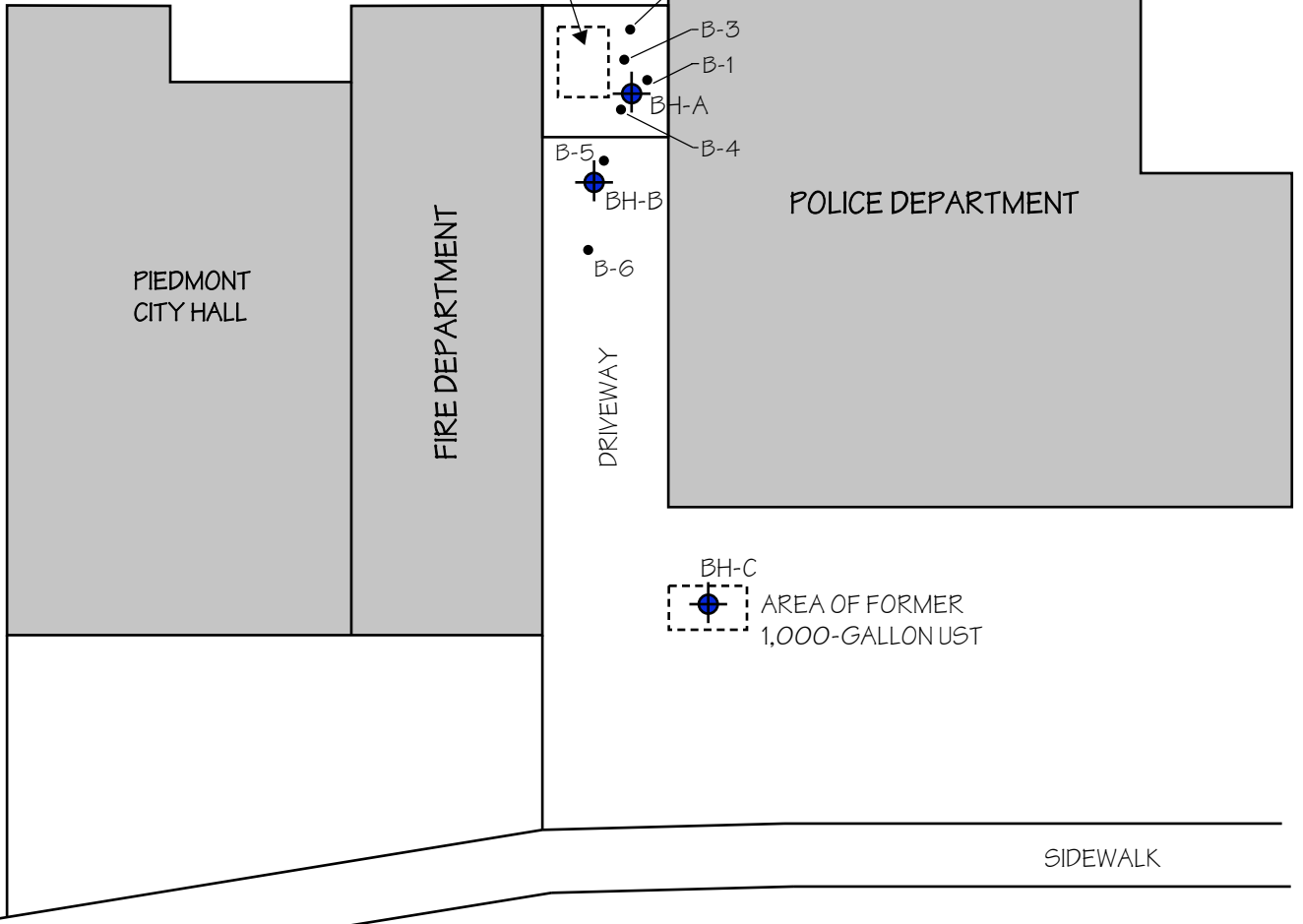
NORTH

SCALE

1" = 30'

VISTA AVENUE

AREA OF FORMER AND CURRENT USTs



SIDEWALK

MAGNOLIA AVENUE

LEGEND

B-6 PREVIOUS SOIL BORING DRILLED BY ATT IN 1989

BH-A SOIL BORING DRILLED IN 2012

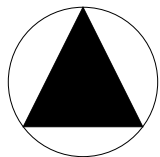
SOIL BORING LOCATION MAP

City of Piedmont  
120 Vista Avenue  
Piedmont, California

DATE: 5/31/12

AQUA SCIENCE ENGINEERS, INC.

FIGURE 3



NORTH

NOT TO SCALE

PARK IRRIGATION WELL LOCATION MAP

City of Piedmont  
120 Vista Avenue  
Piedmont, California

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Figure 4



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## **TABLES**



**TABLE ONE**  
 Summary of Analytical Results of SOIL Samples  
 Petroleum Hydrocarbons, Fuel Oxygenates and Lead Scavengers  
 City of Piedmont, 120 Vista Avenue, Piedmont, California  
 Results are in parts per million (ppm)

Well/ Boring	Sample Depth	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	DIPE	ETBE	TBA	EDB	1,2- DCA
BH-A	4.5	< 1.0	<b>1.8*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	10.0	< 1.0	<b>2.2*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	30.0	< 1.0	<b>8.6*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-B	5.5	< 1.0	<b>3.2*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	10.0	< 1.0	<b>7.9*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	30.0	< 1.0	<b>6.9*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BH-C	2.5	< 1.0	<b>81</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	10.0	< 1.0	<b>9.0</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
	20.0	< 1.0	<b>5.4*</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
ESL		83	83	0.044	2.9	3.3	2.3	0.023	NE	NE	NE	0.075	0.00033	0.0045

Notes:

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations in **BOLD**

ESL = Environmental Screening Levels for deep soil at sites where groundwater is a current or potential source of drinking water as presented in the "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) dated May 2008.

DIPE - diisopropyl ether  
 MTBE - methyl tertiary butyl ether  
 ETBE - ethyl-t-butyl ether

TAME - tert-amyl methyl ether  
 TBA - tert butanol  
 EDB - ethylene dibromide or 1,2-dibromoethane

TPH - total petroleum hydrocarbons  
 DCA - dichloroethane

\* = Hydrocarbons are not typical of diesel fuel

**TABLE TWO**  
 Summary of Analytical Results of Groundwater Samples  
 Petroleum Hydrocarbons, Fuel Oxygenates and Lead Scavengers  
 City of Piedmont, 120 Vista Avenue, Piedmont, California  
 Results are in parts per billion (ppb)

Well/ Boring	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	DIPE	ETBE	TBA	EDB	1,2- DCA
BH-A	< 50	<b>2,100*</b>	< 0.50	< 0.50	< 0.50	< 0.50	<b>5.5</b>	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
BH-B	<b>99</b>	<b>17,000*</b>	< 0.50	< 0.50	< 0.50	< 0.50	<b>0.63</b>	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
BH-C	< 50	<b>4,900</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
Drain	< 50	<b>5,200*</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
Park Well	<b>52**</b>	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
ESL	100	100	1	40	30	20	5	NE	NE	NE	12.000	0.05	0.5

Notes:

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations in **BOLD**

ESL = Environmental Screening Levels for drinking water as presented in the "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) dated May 2008.

DIPE - diisopropyl ether

MTBE - methyl tertiary butyl ether

ETBE - ethyl-t- butyl ether

TAME - tert-amyl methyl ether

TBA -tert butanol

EDB - ethylene dibromide or 1,2-dibromoethane

TPH - total petroleum hydrocarbons

DCA - dichloroethane

\* = Hydrocarbons are not typical of diesel fuel

\*\* = Hydrocarbons are not typical of gasoline



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## **APPENDIX A**

### **Drilling Permit**

# Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 05/11/2012 By jamesy

Permit Numbers: W2012-0324  
Permits Valid from 05/16/2012 to 05/18/2012

Application Id: 1336059327117  
Site Location: 120 Vista Avenue  
Project Start Date: 05/16/2012  
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

City of Project Site: Piedmont

Completion Date: 05/18/2012

Applicant: Aqua Science Engineers - Robert Kitay  
55 Oak Court, Suite 220, Danville, CA 94526

Phone: 925-820-9391

Property Owner: City of Piedmont  
120 Vista Avenue, Piedmont, CA 94611

Phone: --

Client: \*\* same as Property Owner \*\*

Receipt Number: WR2012-0144 Total Due: \$265.00  
Payer Name : Aqua Science Engineers Total Amount Paid: \$265.00  
Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 3 Boreholes  
Driller: V&W Drilling - Lic #: 720904 - Method: mud

Work Total: \$265.00

## Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2012-0324	05/11/2012	08/14/2012	3	5.00 in.	40.00 ft

## Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
5. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least

## **Alameda County Public Works Agency - Water Resources Well Permit**

five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

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## **APPENDIX B**

### Boring Logs

**SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS**

BORING: BH-A

Project Name: City of Piedmont

Project Location: 120 Vista Avenue, Piedmont, CA

Page 1 of 1

Driller: V&W Drilling

Type of Rig: Mud Rotary

Size of Drill: 4.0" Diameter

Logged By: Robert E. Kitay, P.G.

Date Drilled: May 16, 2012

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: NA

Depth of Water First Encountered: 4.5'

Well Screen Type and Diameter: NA

Static Depth of Water in Well: NA

Well Screen Slot Size: NA

Total Depth of Boring: 30'

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level			standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	<p>Portland Cement</p>						0	Concrete	
0-4.5			50/6"	0	4.5'		0-4.5	Silty CLAY (ML); dark; yellow brown; medium stiff; dry; 70% silt; 30% clay; moderate plasticity; very low estimated K; no odor	
4.5-5			50/6"	0			4.5-5	Silty SAND (SM); yellow brown; medium dense; dry; 70% fine sand; 30% silt; non-plastic; high estimated K; no odor	
5-7			50/2"	0			5-7	SHALE; grey; hard, slightly weathered	
7-10			50/2"	0			7-10	CHERT; grey; hard	
10-15			50/2"	0			10-15	GREYWACKE SANDSTONE; grey; hard; no odor	
15		50/2"	0			15	< no recovery at 15' >		
20		50/0"	0			20	< no recovery at 20' - Drilling chips included greywacke, chert and jasper >		
25		50/2"	0			25	SHALE; black, no odor		
30		50/1"	0			30	GREYWACKE SANDSTONE; grey; hard; no odor		
30.1								Refusal - End of boring at 30.1'	

**SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS**

BORING: BH-B

Project Name: City of Piedmont	Project Location: 120 Vista Avenue, Piedmont, CA	Page 1 of 1
Driller: V&W Drilling	Type of Rig: Mud Rotary	Size of Drill: 4.0" Diameter
Logged By: Robert E. Kitay, P.G.	Date Drilled: May 16, 2012	Checked By: Robert E. Kitay, P.G.

<b>WATER AND WELL DATA</b>	Total Depth of Well Completed: NA
Depth of Water First Encountered: 4.5'	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 30.1'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.	
			Interval	Blow Counts	OVM (ppmv)	Water Level			Graphic Log
0	<p>Portland Cement</p>						0	Asphalt	
								0	SAND (SP); yellow brown; loose; dry; 100% fine sand; non-plastic; high estimated K; no odor
5			50/6"	0			5	SILTSTONE; grey; hard; no odor	
10			50/2"	0			10	no odor	
15			50/2"	0			15	no odor	
20			50/1"	0			20	no odor	
25			50/1"	0			25	GREYWACKE SANDSTONE; grey; hard; no odor	
30			50/4"	0			30	SHALE; black, hard; no odor	
								Refusal - End of boring at 30.1'	



**SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS**

BORING: BH-C

Project Name: City of Piedmont

Project Location: 120 Vista Avenue, Piedmont, CA

Page 1 of 1

Driller: V&W Drilling

Type of Rig: Mud Rotary

Size of Drill: 4.0" Diameter

Logged By: Robert E. Kitay, P.G.

Date Drilled: May 17, 2012

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: NA

Depth of Water First Encountered: 1'

Well Screen Type and Diameter: NA

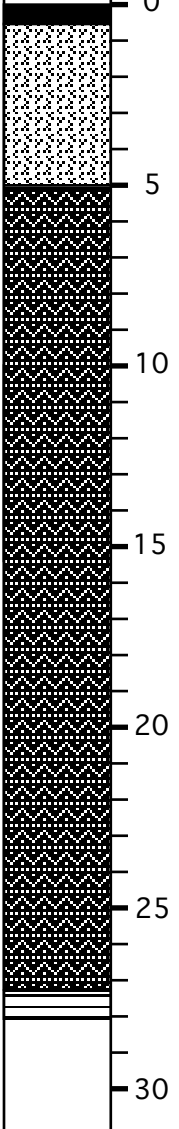
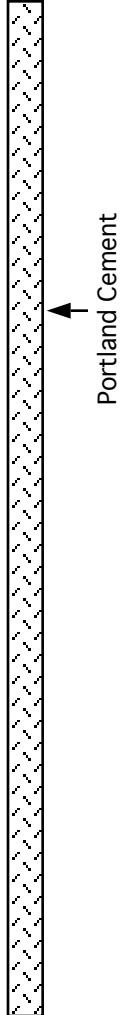
Static Depth of Water in Well: NA

Well Screen Slot Size: NA

Total Depth of Boring: 28'

Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level		
0							Asphalt	
0 - 5			9 10 9	50/6"	0		Gravelly SAND (SW); grey; hard; moist; 60% medium to coarse sand; 40% gravel to 1.5" diameter; high estimated K; no odor wet at 1'	
5 - 10				50/6"	0		SILTSTONE; grey; hard; no odor	
10 - 15				50/2"			fractures between 13 and 15' < no recovery at 15' >	
15 - 20				50/4"	0		fracture at 17' fracture at 18.5' fracture; no odor at 20'	
20 - 25				50/1"			< no recovery at 25' >	
25 - 28							SHALE; black (in cuttings)	
28 - 30							Refusal - End of boring at 28'	





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## **APPENDIX C**

**Certified Analytical Report  
and  
Chain of Custody Documentation  
For  
Soil, Rock and Water Samples**



## Laboratory Results

Robert Kitay  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Subject : 9 Soil Samples and 4 Water Samples  
Project Name : City of Piedmont  
Project Number :

Dear Mr. Kitay,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Troy G. Turpen". The signature is written in a cursive style with a large, prominent "T" and "G".

Troy Turpen

Subject : 9 Soil Samples and 4 Water Samples  
Project Name : City of Piedmont  
Project Number :

## Case Narrative

All soil samples were reported on a total weight (wet weight) basis.

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-A 4.5'**

Matrix : Soil

Lab Number : 81303-01

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 04:09
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:09
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	05/22/12 04:09
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	05/22/12 04:09
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>1.8</b>	1.0	mg/Kg	M EPA 8015	05/29/12 16:14
Octacosane (Silica Gel Surr)	110		% Recovery	M EPA 8015	05/29/12 16:14

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-A 10.0'**

Matrix : Soil

Lab Number : 81303-02

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 04:46
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 04:46
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	05/22/12 04:46
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/22/12 04:46
<b>TPH as Diesel (Silica Gel)</b>	<b>2.2</b>	1.0	mg/Kg	M EPA 8015	05/29/12 08:54
(Note: Some hydrocarbons lower-boiling, some higher-boiling than Diesel.)					
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	05/29/12 08:54

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-A 30.0'**

Matrix : Soil

Lab Number : 81303-04

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 05:22
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 05:22
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	05/22/12 05:22
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	05/22/12 05:22
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>8.6</b>	1.0	mg/Kg	M EPA 8015	05/29/12 10:51
Octacosane (Silica Gel Surr)	121		% Recovery	M EPA 8015	05/29/12 10:51

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-B 5.5'**

Matrix : Soil

Lab Number : 81303-06

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 06:06
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:06
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	05/22/12 06:06
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/22/12 06:06
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>3.2</b>	1.0	mg/Kg	M EPA 8015	05/29/12 18:00
Octacosane (Silica Gel Surr)	115		% Recovery	M EPA 8015	05/29/12 18:00



Project Name : **City of Piedmont**

Project Number :

Sample : **BH-B 10.0'**

Matrix : Soil

Lab Number : 81303-07

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 06:43
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 06:43
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	05/22/12 06:43
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	05/22/12 06:43
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>7.9</b>	1.0	mg/Kg	M EPA 8015	05/29/12 18:34
Octacosane (Silica Gel Surr)	108		% Recovery	M EPA 8015	05/29/12 18:34

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-B 30.0'**

Matrix : Soil

Lab Number : 81303-11

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 23:53
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 23:53
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	05/22/12 23:53
Toluene - d8 (Surr)	98.2		% Recovery	EPA 8260B	05/22/12 23:53
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>6.9</b>	1.0	mg/Kg	M EPA 8015	05/29/12 12:49
Octacosane (Silica Gel Surr)	123		% Recovery	M EPA 8015	05/29/12 12:49

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-C 2.5'**

Matrix : Soil

Lab Number : 81303-13

Sample Date :05/17/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 12:46
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 12:46
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/22/12 12:46
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/22/12 12:46
<b>TPH as Diesel (Silica Gel)</b>	<b>81</b>	10	mg/Kg	M EPA 8015	05/29/12 16:49
Octacosane (Silica Gel Surr)	Diluted Out		% Recovery	M EPA 8015	05/29/12 16:49

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-C 10.0'**

Matrix : Soil

Lab Number : 81303-15

Sample Date :05/17/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 13:20
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:20
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	05/22/12 13:20
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	05/22/12 13:20
<b>TPH as Diesel (Silica Gel)</b>	<b>9.0</b>	1.0	mg/Kg	M EPA 8015	05/29/12 17:24
Octacosane (Silica Gel Surr)	115		% Recovery	M EPA 8015	05/29/12 17:24

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-C 20.0'**

Matrix : Soil

Lab Number : 81303-16

Sample Date :05/17/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/12 13:55
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/12 13:55
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/22/12 13:55
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/22/12 13:55
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>5.4</b>	1.0	mg/Kg	M EPA 8015	05/29/12 15:39
Octacosane (Silica Gel Surr)	118		% Recovery	M EPA 8015	05/29/12 15:39

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-A Water**

Matrix : Water

Lab Number : 81303-17

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
<b>Methyl-t-butyl ether (MTBE)</b>	<b>5.5</b>	0.50	ug/L	EPA 8260B	05/23/12 13:27
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/12 13:27
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/12 13:27
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 13:27
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/23/12 13:27
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/23/12 13:27
<b>TPH as Diesel (Silica Gel)</b>	<b>2100</b>	50	ug/L	M EPA 8015	05/23/12 17:03
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Silica Gel Surr)	96.0		% Recovery	M EPA 8015	05/23/12 17:03

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-B Water**

Matrix : Water

Lab Number : 81303-18

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
<b>Methyl-t-butyl ether (MTBE)</b>	<b>0.63</b>	0.50	ug/L	EPA 8260B	05/23/12 12:53
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/12 12:53
<b>TPH as Gasoline</b>	<b>99</b>	50	ug/L	EPA 8260B	05/23/12 12:53
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 12:53
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/23/12 12:53
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	05/23/12 12:53
<b>TPH as Diesel (Silica Gel)</b>	<b>17000</b>	500	ug/L	M EPA 8015	05/30/12 13:15
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Silica Gel Surr)	Diluted Out		% Recovery	M EPA 8015	05/30/12 13:15

Project Name : **City of Piedmont**

Project Number :

Sample : **BH-C Water**

Matrix : Water

Lab Number : 81303-19

Sample Date :05/17/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/12 14:34
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/12 14:34
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:34
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	05/23/12 14:34
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/23/12 14:34
<b>TPH as Diesel (Silica Gel)</b>	<b>4900</b>	500	ug/L	M EPA 8015	05/30/12 13:51
Octacosane (Silica Gel Surr)	Diluted Out		% Recovery	M EPA 8015	05/30/12 13:51



Project Name : **City of Piedmont**

Project Number :

Sample : **Drain**

Matrix : Water

Lab Number : 81303-20

Sample Date :05/16/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/12 14:00
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/12 14:00
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/12 14:00
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	05/23/12 14:00
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	05/23/12 14:00
<b>TPH as Diesel (Silica Gel)</b> (Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)	<b>5200</b>	50	ug/L	M EPA 8015	05/23/12 16:56
Octacosane (Silica Gel Surr)	120		% Recovery	M EPA 8015	05/23/12 16:56

**QC Report : Method Blank Data**

Project Name : **City of Piedmont**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	05/29/2012	Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Octacosane (Silica Gel Surr)	111		%	M EPA 8015	05/29/2012	Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	05/23/2012	Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Octacosane (Silica Gel Surr)	101		%	M EPA 8015	05/23/2012	Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	05/23/2012	Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Octacosane (Silica Gel Surr)	111		%	M EPA 8015	05/23/2012	Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/22/2012
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/22/2012
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	1,2-Dichloroethane-d4 (Surr)	106		%	EPA 8260B	05/22/2012
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Toluene - d8 (Surr)	102		%	EPA 8260B	05/22/2012
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	05/21/2012	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	05/21/2012	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
1,2-Dichloroethane-d4 (Surr)	110		%	EPA 8260B	05/21/2012	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
Toluene - d8 (Surr)	99.5		%	EPA 8260B	05/21/2012	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
						Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
						Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/23/2012
						Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
						TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/23/2012
						1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
						1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/23/2012
						1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	05/23/2012
						Toluene - d8 (Surr)	100		%	EPA 8260B	05/23/2012

**QC Report : Matrix Spike/ Matrix Spike Duplicate**Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	81248-02	1.9	19.1	19.9	19.8	18.6	mg/Kg	M EPA 8015	5/29/12	93.5	83.8	10.9	60-140	25
TPH-D (Si Gel)	BLANK	<50	1000	1000	883	821	ug/L	M EPA 8015	5/23/12	88.3	82.1	7.26	70-130	25
TPH-D (Si Gel)	BLANK	<50	1000	1000	827	855	ug/L	M EPA 8015	5/23/12	82.7	85.5	3.30	70-130	25
1,2-Dibromoethane	81318-01	<0.0050	0.0395	0.0399	0.0392	0.0440	mg/Kg	EPA 8260B	5/21/12	99.2	110	10.4	67.2-121	25
1,2-Dichloroethane	81318-01	<0.0050	0.0396	0.0400	0.0384	0.0399	mg/Kg	EPA 8260B	5/21/12	97.1	99.8	2.77	64.0-124	25
Benzene	81318-01	<0.0050	0.0396	0.0400	0.0366	0.0375	mg/Kg	EPA 8260B	5/21/12	92.3	93.8	1.64	67.9-120	25
Diisopropyl ether	81318-01	<0.0050	0.0391	0.0395	0.0399	0.0406	mg/Kg	EPA 8260B	5/21/12	102	103	0.818	65.2-122	25
Ethyl-tert-butyl ether	81318-01	<0.0050	0.0394	0.0398	0.0383	0.0394	mg/Kg	EPA 8260B	5/21/12	97.0	98.9	1.94	64.6-122	25

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethylbenzene	81318-01	<0.0050	0.0396	0.0400	0.0349	0.0362	mg/Kg	EPA 8260B	5/21/12	88.1	90.6	2.82	65.5-127	25
Methyl-t-butyl ether	81318-01	<0.0050	0.0396	0.0400	0.0388	0.0413	mg/Kg	EPA 8260B	5/21/12	98.0	103	5.25	57.0-122	25
P + M Xylene	81318-01	<0.0050	0.0396	0.0400	0.0337	0.0360	mg/Kg	EPA 8260B	5/21/12	85.2	89.9	5.37	62.5-124	25
Tert-Butanol	81318-01	<0.0050	0.200	0.202	0.194	0.197	mg/Kg	EPA 8260B	5/21/12	97.2	97.5	0.322	64.3-122	25
Tert-amyl-methyl ether	81318-01	<0.0050	0.0395	0.0399	0.0406	0.0423	mg/Kg	EPA 8260B	5/21/12	103	106	2.94	64.9-122	25
Toluene	81318-01	<0.0050	0.0396	0.0400	0.0364	0.0382	mg/Kg	EPA 8260B	5/21/12	92.0	95.4	3.71	65.7-120	25
1,2-Dibromoethane	81343-06	<0.0050	0.0368	0.0386	0.0362	0.0399	mg/Kg	EPA 8260B	5/22/12	98.4	103	4.89	67.2-121	25
1,2-Dichloroethane	81343-06	<0.0050	0.0368	0.0387	0.0345	0.0373	mg/Kg	EPA 8260B	5/22/12	93.7	96.4	2.89	64.0-124	25
Benzene	81343-06	<0.0050	0.0368	0.0387	0.0316	0.0346	mg/Kg	EPA 8260B	5/22/12	85.9	89.6	4.13	67.9-120	25

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Diisopropyl ether	81343-06	<0.0050	0.0364	0.0382	0.0334	0.0373	mg/Kg	EPA 8260B	5/22/12	91.8	97.6	6.05	65.2-122	25
Ethyl-tert-butyl ether	81343-06	<0.0050	0.0367	0.0385	0.0314	0.0347	mg/Kg	EPA 8260B	5/22/12	85.6	90.1	5.05	64.6-122	25
Ethylbenzene	81343-06	<0.0050	0.0368	0.0387	0.0321	0.0354	mg/Kg	EPA 8260B	5/22/12	87.1	91.6	4.97	65.5-127	25
Methyl-t-butyl ether	81343-06	<0.0050	0.0368	0.0387	0.0326	0.0358	mg/Kg	EPA 8260B	5/22/12	88.5	92.5	4.40	57.0-122	25
P + M Xylene	81343-06	<0.0050	0.0368	0.0387	0.0316	0.0346	mg/Kg	EPA 8260B	5/22/12	85.8	89.4	4.13	62.5-124	25
Tert-Butanol	81343-06	<0.0050	0.186	0.195	0.154	0.175	mg/Kg	EPA 8260B	5/22/12	82.8	89.9	8.27	64.3-122	25
Tert-amyl-methyl ether	81343-06	<0.0050	0.0368	0.0386	0.0349	0.0379	mg/Kg	EPA 8260B	5/22/12	94.9	98.2	3.45	64.9-122	25
Toluene	81343-06	<0.0050	0.0368	0.0387	0.0328	0.0355	mg/Kg	EPA 8260B	5/22/12	88.9	91.8	3.24	65.7-120	25
1,2-Dibromoethane	81332-04	<0.50	39.9	39.9	42.1	41.1	ug/L	EPA 8260B	5/23/12	105	103	2.23	80-120	25

**QC Report : Matrix Spike/ Matrix Spike Duplicate**Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dichloroethane	81332-04	<0.50	40.0	40.0	40.8	40.0	ug/L	EPA 8260B	5/23/12	102	99.9	2.16	75.7-122	25
Benzene	81332-04	<0.50	40.0	40.0	41.7	40.2	ug/L	EPA 8260B	5/23/12	104	100	3.70	80-120	25
Diisopropyl ether	81332-04	<0.50	39.5	39.5	42.9	41.4	ug/L	EPA 8260B	5/23/12	108	105	3.64	80-120	25
Ethyl-tert-butyl ether	81332-04	<0.50	39.8	39.8	40.4	39.4	ug/L	EPA 8260B	5/23/12	102	98.9	2.55	76.5-120	25
Ethylbenzene	81332-04	<0.50	40.0	40.0	42.6	41.0	ug/L	EPA 8260B	5/23/12	107	102	3.87	80-120	25
Methyl-t-butyl ether	81332-04	<0.50	40.0	40.0	37.8	36.9	ug/L	EPA 8260B	5/23/12	94.5	92.4	2.32	69.7-121	25
P + M Xylene	81332-04	0.64	40.0	40.0	42.3	41.1	ug/L	EPA 8260B	5/23/12	104	101	2.90	76.8-120	25
Tert-Butanol	81332-04	<5.0	202	202	204	205	ug/L	EPA 8260B	5/23/12	101	102	0.357	80-120	25
Tert-amyl-methyl ether	81332-04	<0.50	39.9	39.9	40.6	39.3	ug/L	EPA 8260B	5/23/12	102	98.3	3.39	78.9-120	25
Toluene	81332-04	0.63	40.0	40.0	42.4	40.6	ug/L	EPA 8260B	5/23/12	104	99.9	4.41	80-120	25

**QC Report : Laboratory Control Sample (LCS)**Project Name : **City of Piedmont**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH-D (Si Gel)	20.0	mg/Kg	M EPA 8015	5/29/12	95.3	70-130
1,2-Dibromoethane	0.0391	mg/Kg	EPA 8260B	5/21/12	110	67.2-121
1,2-Dichloroethane	0.0392	mg/Kg	EPA 8260B	5/21/12	102	64.0-124
Benzene	0.0392	mg/Kg	EPA 8260B	5/21/12	94.4	67.9-120
Diisopropyl ether	0.0388	mg/Kg	EPA 8260B	5/21/12	103	65.2-122
Ethyl-tert-butyl ether	0.0390	mg/Kg	EPA 8260B	5/21/12	95.4	64.6-122
Ethylbenzene	0.0392	mg/Kg	EPA 8260B	5/21/12	95.5	65.5-127
Methyl-t-butyl ether	0.0392	mg/Kg	EPA 8260B	5/21/12	98.0	57.0-122
P + M Xylene	0.0392	mg/Kg	EPA 8260B	5/21/12	93.1	62.5-124
Tert-Butanol	0.198	mg/Kg	EPA 8260B	5/21/12	96.8	64.3-122
Tert-amyl-methyl ether	0.0392	mg/Kg	EPA 8260B	5/21/12	102	64.9-122
Toluene	0.0392	mg/Kg	EPA 8260B	5/21/12	96.6	65.7-120
1,2-Dibromoethane	0.0381	mg/Kg	EPA 8260B	5/22/12	110	67.2-121
1,2-Dichloroethane	0.0382	mg/Kg	EPA 8260B	5/22/12	103	64.0-124
Benzene	0.0382	mg/Kg	EPA 8260B	5/22/12	94.2	67.9-120
Diisopropyl ether	0.0377	mg/Kg	EPA 8260B	5/22/12	102	65.2-122
Ethyl-tert-butyl ether	0.0380	mg/Kg	EPA 8260B	5/22/12	93.8	64.6-122
Ethylbenzene	0.0382	mg/Kg	EPA 8260B	5/22/12	96.8	65.5-127
Methyl-t-butyl ether	0.0382	mg/Kg	EPA 8260B	5/22/12	98.0	57.0-122
P + M Xylene	0.0382	mg/Kg	EPA 8260B	5/22/12	94.4	62.5-124

**QC Report : Laboratory Control Sample (LCS)**Project Name : **City of Piedmont**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tert-Butanol	0.192	mg/Kg	EPA 8260B	5/22/12	97.8	64.3-122
Tert-amyl-methyl ether	0.0381	mg/Kg	EPA 8260B	5/22/12	104	64.9-122
Toluene	0.0382	mg/Kg	EPA 8260B	5/22/12	96.4	65.7-120
1,2-Dibromoethane	40.1	ug/L	EPA 8260B	5/23/12	104	80-120
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	5/23/12	101	75.7-122
Benzene	40.2	ug/L	EPA 8260B	5/23/12	102	80-120
Diisopropyl ether	39.7	ug/L	EPA 8260B	5/23/12	105	80-120
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	5/23/12	99.4	76.5-120
Ethylbenzene	40.2	ug/L	EPA 8260B	5/23/12	104	80-120
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	5/23/12	92.0	69.7-121
P + M Xylene	40.2	ug/L	EPA 8260B	5/23/12	103	76.8-120
TPH as Gasoline	507	ug/L	EPA 8260B	5/23/12	102	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	5/23/12	99.5	80-120
Tert-amyl-methyl ether	40.1	ug/L	EPA 8260B	5/23/12	99.5	78.9-120
Toluene	40.2	ug/L	EPA 8260B	5/23/12	102	80-120



# Chain of Custody

81303

SAMPLER (SIGNATURE)

*Paul E. Kity*

PROJECT NAME

City of Piedmont

PAGE 1 of 2

ADDRESS

120 Vista Ave, Piedmont, CA

JOB NO. \_\_\_\_\_

## ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015) <i>w/ silica</i>	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEM-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/6010)	TPH-GIBTEX/5 OXYS (Pb) (EPA METHOD 8260) <i>Scav</i>	MULT-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LIFT METALS (5) (EPA 6010+7000)	COMPOSITE 4:1	EDF	HOLD	
																					BH-A 4.5'
BH-A 10.0'		1124			X	X								X						X	
BH-A 25.0'		1238			X	X								X						X	
BH-A 30.0'		1300			X	X								X							X
BH-B 4.8'		1410			X	X								X						X	
BH-B 5.5'		1425			X	X								X						X	
BH-B 10.0'		1518			X	X								X						X	
BH-B 15.0'		1541			X	X								X						X	
BH-B 20.0'		1613			X	X								X						X	
BH-B 25.0'		1642			X	X								X						X	
BH-B 30.0'		1715			X	X								X						X	

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RELINQUISHED BY:

*Paul E. Kity* 922

*Robert E. Kity* 5-18-12

(signature) (time)

(printed name) (date)

Company-ASE, INC.

RECEIVED BY:

(signature) (time)

(signature) (time)

(printed name) (date)

(printed name) (date)

Company-

RELINQUISHED BY:

(signature) (time)

(signature) (time)

(printed name) (date)

(printed name) (date)

Company-

RECEIVED BY LABORATORY:

*E Gaddress* 0922

*E Gaddress* 051812

(signature) (time)

(signature) (time)

Company- *Kelly Analytical*

COMMENTS:

TURN AROUND TIME  
 STANDARD 24Hr 48Hr 72Hr  
 OTHER.

Aqua Science Engineers, Inc.  
 55 Oak Court, Suite 220  
 Danville, CA 94526  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody

81303

SAMPLER (SIGNATURE)

PROJECT NAME City of Piedmont

PAGE 2 of 2

ADDRESS 120 Vista Ave, Piedmont, CA

JOB NO. \_\_\_\_\_

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015) <i>w/ Silica</i>	TPH-DIESEL & MOTOR OIL (EPA 3510/8015) <i>Gas Cleanup</i>	CAM 17 METALS (EPA 6010+7000)	SEM-VOLATILE ORGANICS (EPA 625/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-GBTEX/5 OXYS / Pb (EPA METHOD 8260) <i>Scrub</i>	MULT-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	COMPOSITE 4:1	EDF	HOLD	
BH-C 1.0'	5-17-12	820	S	1																	
BH-C 2.5'		858				X															X
BH-C 4.5'		1020												X						X	
BH-C 10.0'		1035				X								X						X	
BH-C 20.0'		1113				X								X						X	
BH-A Water	5-16-12	954	W	5		X								X						X	
BH-B Water	5-16-12	1420				X								X						X	
BH-C Water	5-17-12	841				X								X						X	
Drain	5-16-12	900				X								X						X	

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RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LABORATORY:

COMMENTS:

*Robert E. Kiley* 922  
 (signature) (time)

*[Signature]*  
 (signature) (time)

*[Signature]*  
 (signature) (time)

*E. Goddess* 0522  
 (signature) (time)

Robert E. Kiley 5-18-12  
 (printed name) (date)

*[Signature]*  
 (printed name) (date)

*[Signature]*  
 (printed name) (date)

E Goddess 051812  
 (printed name) (date)

TURN AROUND TIME  
 STANDARD 24Hr 48Hr 72Hr

Company-ASE, INC.

Company-

Company-

Company *Kelly Analytical*

OTHER:

**SAMPLE RECEIPT CHECKLIST**

RECEIVER  
*ewj*  
Initials

SRG#: 81303 Date: 052812  
Project ID: City of Piedmont  
Method of Receipt:  Courier  Over-the-counter  Shipper

**COC Inspection**

Is COC present?  Yes  No  
 Custody seals on shipping container?  Intact  Broken  Not present  N/A  
 Is COC Signed by Relinquisher?  Yes  No Dated?  Yes  No  
 Is sampler name legibly indicated on COC?  Yes  No  
 Is analysis or hold requested for all samples?  Yes  No  
 Is the turnaround time indicated on COC?  Yes  No  
 Is COC free of whiteout and uninitialed cross-outs?  Yes  No, Whiteout  No, Cross-outs

**Sample Inspection**

Coolant Present:  Yes  No (includes water)  
 Temperature °C 1.6 Therm. ID# 1R-4 Initial ewj Date/Time 051812 1520  N/A  
 Are there custody seals on sample containers?  Intact  Broken  Not present  
 Do containers match COC?  Yes  No  No, COC lists absent sample(s)  No, Extra sample(s) present  
 Are there samples matrices other than soil, water, air or carbon?  Yes  No  
 Are any sample containers broken, leaking or damaged?  Yes  No  
 Are preservatives indicated?  Yes, on sample containers  Yes, on COC  Not indicated  N/A  
 Are preservatives correct for analyses requested?  Yes  No  N/A  
 Are samples within holding time for analyses requested?  Yes  No  
 Are the correct sample containers used for the analyses requested?  Yes  No  
 Is there sufficient sample to perform testing? LJR 052112  Yes  No  
 Does any sample contain product, have strong odor or are otherwise suspected to be hot?  Yes  No

Receipt Details

Matrix <u>So</u>	Container type <u>glass</u>	# of containers received <u>08</u>
Matrix <u>So</u>	Container type <u>glass</u>	# of containers received <u>08</u>
Matrix <u>WA</u>	Container type <u>voa</u>	# of containers received <u>20</u>

Date and Time Sample Put into Temp Storage Date: 051812 Time: 1530

**Quicklog**

Are the Sample ID's indicated:  On COC  On sample container(s)  On Both  Not indicated  
 If Sample ID's are listed on both COC and containers, do they all match?  Yes  No  N/A  
 Is the Project ID indicated:  On COC  On sample container(s)  On Both  Not indicated  
 If project ID is listed on both COC and containers, do they all match?  Yes  No  N/A  
 Are the sample collection dates indicated:  On COC  On sample container(s)  On Both  Not indicated  
 If collection dates are listed on both COC and containers, do they all match?  Yes  No  N/A  
 Are the sample collection times indicated:  On COC  On sample container(s)  On Both  Not indicated  
 If collection times are listed on both COC and containers, do they all match?  Yes  No  N/A

COMMENTS: All voa containers have HCL as the preservative on the ID labels. ewj 051812 0922

The following samples may have insufficient sample: -08, -04, -09, -10. LJR 052112 - 1122



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX D**

Certified Analytical Report  
and  
Chain of Custody Documentation  
For  
Park Irrigation Well Water Sample



## Laboratory Results

Robert Kitay  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Subject : 1 Water Sample  
Project Name : City of Piedmont  
Project Number :

Dear Mr. Kitay,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy Turpen

Project Name : **City of Piedmont**

Project Number :

Sample : **Park Well**

Matrix : Water

Lab Number : 81347-01

Sample Date :05/22/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/25/12 01:27
<b>TPH as Gasoline</b>	<b>52</b>	50	ug/L	EPA 8260B	05/25/12 01:27
(Note: Primarily compounds not found in typical Gasoline)					
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/25/12 01:27
1,2-Dichloroethane-d4 (Surr)	98.8		% Recovery	EPA 8260B	05/25/12 01:27
Toluene - d8 (Surr)	89.8		% Recovery	EPA 8260B	05/25/12 01:27
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	05/26/12 02:29
Octacosane (Silica Gel Surr)	92.4		% Recovery	M EPA 8015	05/26/12 02:29

**QC Report : Method Blank Data**

Project Name : **City of Piedmont**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	05/25/2012
Octacosane (Silica Gel Surr)	99.6		%	M EPA 8015	05/25/2012
Benzene	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Toluene	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	05/24/2012
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	05/24/2012
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	05/24/2012
1,2-Dichloroethane-d4 (Surr)	98.4		%	EPA 8260B	05/24/2012
Toluene - d8 (Surr)	98.5		%	EPA 8260B	05/24/2012

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	BLANK	<50	1000	1000	857	825	ug/L	M EPA 8015	5/25/12	85.7	82.5	3.76	70-130	25
1,2-Dibromoethane	81323-03	<0.50	39.9	39.9	40.4	40.1	ug/L	EPA 8260B	5/24/12	101	100	0.812	80-120	25
1,2-Dichloroethane	81323-03	4.2	40.0	40.0	45.7	44.7	ug/L	EPA 8260B	5/24/12	104	101	2.49	75.7-122	25
Benzene	81323-03	<0.50	40.0	40.0	40.4	39.5	ug/L	EPA 8260B	5/24/12	101	98.8	2.28	80-120	25
Diisopropyl ether	81323-03	<0.50	39.5	39.5	40.5	39.8	ug/L	EPA 8260B	5/24/12	102	101	1.66	80-120	25
Ethyl-tert-butyl ether	81323-03	<0.50	39.8	39.8	38.5	38.2	ug/L	EPA 8260B	5/24/12	96.6	95.9	0.692	76.5-120	25
Ethylbenzene	81323-03	<0.50	40.0	40.0	39.8	39.0	ug/L	EPA 8260B	5/24/12	99.6	97.4	2.19	80-120	25
Methyl-t-butyl ether	81323-03	0.89	40.0	40.0	43.0	42.6	ug/L	EPA 8260B	5/24/12	105	104	0.940	69.7-121	25
P + M Xylene	81323-03	<0.50	40.0	40.0	39.6	39.1	ug/L	EPA 8260B	5/24/12	99.0	97.8	1.20	76.8-120	25



**QC Report : Matrix Spike/ Matrix Spike Duplicate**

Project Name : **City of Piedmont**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol	81323-03	<5.0	202	202	204	205	ug/L	EPA 8260B	5/24/12	101	102	0.238	80-120	25
Tert-amyl-methyl ether	81323-03	<0.50	39.9	39.9	39.5	38.9	ug/L	EPA 8260B	5/24/12	98.9	97.3	1.62	78.9-120	25
Toluene	81323-03	<0.50	40.0	40.0	39.9	39.1	ug/L	EPA 8260B	5/24/12	99.9	97.9	2.04	80-120	25

**QC Report : Laboratory Control Sample (LCS)**Project Name : **City of Piedmont**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
1,2-Dibromoethane	40.0	ug/L	EPA 8260B	5/24/12	100	80-120
1,2-Dichloroethane	40.1	ug/L	EPA 8260B	5/24/12	104	75.7-122
Benzene	40.1	ug/L	EPA 8260B	5/24/12	101	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	5/24/12	100	80-120
Ethyl-tert-butyl ether	39.9	ug/L	EPA 8260B	5/24/12	97.7	76.5-120
Ethylbenzene	40.1	ug/L	EPA 8260B	5/24/12	98.0	80-120
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	5/24/12	106	69.7-121
P + M Xylene	40.1	ug/L	EPA 8260B	5/24/12	97.8	76.8-120
TPH as Gasoline	502	ug/L	EPA 8260B	5/24/12	100	70.0-130
Tert-Butanol	202	ug/L	EPA 8260B	5/24/12	102	80-120
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	5/24/12	98.5	78.9-120
Toluene	40.1	ug/L	EPA 8260B	5/24/12	100	80-120

Aqua Science Engineers, Inc.  
 55 Oak Court, Suite 220  
 Danville, CA 94526  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody

81347

SAMPLER (SIGNATURE)

*R. E. Kirby*

PROJECT NAME City of Piedmont

PAGE 1 of 1

ADDRESS 120 Vista Ave, Piedmont, CA

JOB NO. \_\_\_\_\_

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL w/ Silica Gel (EPA 3510/8015) Cleanup	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	CAM 17 METALS (EPA 6010+7000)	SEMI-VOLATILE ORGANICS (EPA 825/8270)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PESTICIDES (EPA 8081)	FUEL OXYGENATES (EPA 8260)	PURGEABLE HALOCARBONS (EPA 601/8010)	TPH-G/BTEX/5 OXYS (EPA METHOD 8260) 5c.v.	MULTI-RANGE HYDROCARBONS WITH SILICA GEL CLEANUP (EPA 8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	LUFT METALS (5) (EPA 6010+7000)	COMPOSITE 4:1	EDF
					Park Well	5-22-12	10:30	W	5		X								X

RELINQUISHED BY:  
*R. E. Kirby* 5-22-12  
 (signature) (time)  
 Robert E. Kirby 1301  
 (printed name) (date)  
 Company-ASE, INC.

RECEIVED BY:  
 \_\_\_\_\_  
 (signature) (time)  
 \_\_\_\_\_  
 (printed name) (date)  
 Company- \_\_\_\_\_

RELINQUISHED BY:  
 \_\_\_\_\_  
 (signature) (time)  
 \_\_\_\_\_  
 (printed name) (date)  
 Company- \_\_\_\_\_

RECEIVED BY LABORATORY:  
*Leu Roberts* 1301  
 (signature) (time)  
 Leu Roberts 052212  
 (printed name) (date)  
 Company-KiFF Analytical

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 TURN AROUND TIME  
 STANDARD 24Hr 48Hr 72Hr  
 OTHER:  
 \_\_\_\_\_

Page 1 of 1

01

### SAMPLE RECEIPT CHECKLIST

RECEIVER  
LJR  
Initials

SRG#: 81347 Date: 052212

Project ID: City of Piedmont

Method of Receipt:  Courier  Over-the-counter  Shipper

**COC Inspection**

- Is COC present?  Yes  No
- Custody seals on shipping container?  Intact  Broken  Not present  N/A
- Is COC Signed by Relinquisher?  Yes  No
- Is sampler name legibly indicated on COC?  Yes  No
- Is analysis or hold requested for all samples?  Yes  No
- Is the turnaround time indicated on COC?  Yes  No
- Is COC free of whiteout and uninitialed cross-outs?  Yes  No, Whiteout  No, Cross-outs

**Sample Inspection**

- Coolant Present: 3.4  Yes  No (includes water)
  - Temperature °C 3.4 Therm. ID# IR-4 Initial LJR Date/Time 052212/1758  N/A
  - Are there custody seals on sample containers?  Intact  Broken  Not present
  - Do containers match COC?  Yes  No  No, COC lists absent sample(s)  No, Extra sample(s) present
  - Are there samples matrices other than soil, water, air or carbon?  Yes  No
  - Are any sample containers broken, leaking or damaged?  Yes  No
  - Are preservatives indicated?  Yes, on sample containers  Yes, on COC  Not indicated  N/A
  - Are preservatives correct for analyses requested?  Yes  No  N/A
  - Are samples within holding time for analyses requested?  Yes  No
  - Are the correct sample containers used for the analyses requested?  Yes  No
  - Is there sufficient sample to perform testing?  Yes  No
  - Does any sample contain product, have strong odor or are otherwise suspected to be hot?  Yes  No
- Receipt Details
- |                  |                           |                                   |
|------------------|---------------------------|-----------------------------------|
| Matrix <u>WA</u> | Container type <u>VOA</u> | # of containers received <u>5</u> |
| Matrix _____     | Container type _____      | # of containers received _____    |
| Matrix _____     | Container type _____      | # of containers received _____    |
- Date and Time Sample Put into Temp Storage Date: 052212 Time: 1759

**Quicklog**

- Are the Sample ID's indicated:  On COC  On sample container(s)  On Both  Not indicated
- If Sample ID's are listed on both COC and containers, do they all match?  Yes  No  N/A
- Is the Project ID indicated:  On COC  On sample container(s)  On Both  Not indicated
- If project ID is listed on both COC and containers, do they all match?  Yes  No  N/A
- Are the sample collection dates indicated:  On COC  On sample container(s)  On Both  Not indicated
- If collection dates are listed on both COC and containers, do they all match?  Yes  No  N/A
- Are the sample collection times indicated:  On COC  On sample container(s)  On Both  Not indicated
- If collection times are listed on both COC and containers, do they all match?  Yes  No  N/A

**COMMENTS:**

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Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX E**

### Manifest for Waste Disposal

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number  
**N/A**

2. Page 1 of  
**1**

3. Emergency Response Phone  
**800-925-4994**

4. Waste Tracking Number  
**NH0904-01**

5. Generator's Name and Mailing Address

**CITY OF PIEDMONT  
120 VISTA AVENUE  
PIEDMONT, CA 94520 USA**

Generator's Site Address (if different than mailing address)

Generator's Phone: **925-413-8604**

6. Transporter 1 Company Name

**EVERGREEN ENVIRONMENTAL SERVICES**

U.S. EPA ID Number

**CAD982413262**

7. Transporter 2 Company Name

**ENVIRONMENTAL LOGISTICS INC**

U.S. EPA ID Number

**CA2000917513**

8. Designated Facility Name and Site Address

**FILTER RECYCLING SERVICES, INC.  
180 WEST MONTE  
BLOOMINGTON, CA 92376**

U.S. EPA ID Number

**CAD982444481**

Facility's Phone: **909-873-4141**

9. Waste Shipping Name and Description

10. Containers

No.

Type

11. Total Quantity

12. Unit Wt./Vol.

1. **NON-HAZARDOUS WASTE, SOLID (DRILLING MUD)**

**007 DM**

**350**

**G**

2.

3.

4.

13. Special Handling Instructions and Additional Information

**LINE ITEM 9.1) PROFILE \_\_\_\_\_ 7 X 55-GALLON DRUMS WEAR APPROPRIATE PPE WHEN HANDLING  
JIS 6904**

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name

**SUSAN RIGMOND, DECON ENVIRONMENTAL**

Signature

*Susan Rigmond, Decon on behalf of City of Piedmont*

Month Day Year  
**06 15 12**

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

**Kenneth E. Williams**

Signature

*Kenneth E. Williams*

Month Day Year  
**06 15 12**

Transporter 2 Printed/Typed Name

**Nikki Washington**

Signature

*Nikki Washington*

Month Day Year  
**06 18 12**

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month Day Year