

ZIP MARKET & GAS  
SEATTLE  
RELEASE # 592164

UST # 97464  
ISIS - 8195

**SITE ASSESSMENT REPORT**

Former Plaid Pantry Store #324  
10645 16<sup>th</sup> Avenue SW  
Seattle, Washington

Ecology Site UST ID No. 97464

Prepared for:

**PLAID PANTRIES, INC.**  
10025 SW Allen Blvd.  
Beaverton, Oregon 97005-4124

Prepared by:

**PNG ENVIRONMENTAL, INC.**

Project 1133-01  
January 25, 2008

1/25/2008  
ISIS ✓

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## 1 INTRODUCTION

This report documents the results of site assessment activities conducted at the former Plaid Pantry #324 retail gasoline station, located at 10645 16<sup>th</sup> Avenue SW in Seattle, Washington (Figure 1). This report was prepared by PNG Environmental, Inc. (PNG), on behalf of Plaid Pantries, Inc. (Plaid). Work was performed in accordance with PNG's scope of work dated June 20, 2007.

### 1.1 FACILITY BACKGROUND

The site is located at the northwest corner of SW 107<sup>th</sup> Street and 16<sup>th</sup> Avenue SW in Seattle, Washington (Figures 1 and 2). The site is occupied by a convenience store and restaurant. Site operations formerly included a retail gasoline service station which was decommissioned in 2006.

Plaid operated its Store #324 retail gasoline station at the site between September 1986 and November 30, 1990; at which time it sub-leased the store building and sold the fixtures and equipment (including the underground storage tanks) that made up the gasoline facility to Young Kil Kim and Chae Yop Kim. Plaid remained the primary lessee of the property until August 31, 2006. Fuel storage at the Plaid facility was provided by three gasoline underground storage tanks (USTs), as follows:

- Two 12,000-gallon capacity USTs formerly containing gasoline.
- One 10,000-gallon capacity UST formerly containing gasoline.

During Plaid's operations (and that of the tenants), only gasoline is known to have been stored and dispensed at the site. Leaded gasoline may have been dispensed at the site during phase-out of that product in the 1980s. PNG understands that neither Plaid nor their sub tenants stored or dispensed other hydrocarbons such as diesel fuel, bulk motor oil, or other bulk solvents at any time during site operations.

Plaid and its tenants operated a leak detection system in accordance with Ecology requirements and no known system leaks were identified or reported to Plaid during the life of Plaid's lease. Tank decommissioning data provided to Plaid in 2007 by the property owner indicate that gasoline constituents were identified in soil near the Plaid system, as summarized below.

#### 1.1.1 UST Decommissioning Report

UST closure activities were conducted on behalf of the current property owner, as documented in an UST Closure Action Report, dated January 10, 2007. This report was prepared by KEE Environmental, LLC, Redmond, WA (KEE). Information pertaining to UST closure activities is published in that report and summarized below and in Table 1.

- The service station was reportedly closed in March 2006, and UST decommissioning and removal activities were conducted in May 2006. KEE collected a total of ten closure soil samples from the UST cavity and fuel pump island excavation areas. Figure 2 illustrates the general site layout; including the locations of the UST closure soil samples designated S-1 through S-10.
- Groundwater was not encountered at maximum excavation depths of 16 feet below ground surface (bgs).
- Soil samples were collected from below each of the three former gasoline UST locations (16 feet depth), from each UST cavity sidewall (eight feet depth), and

from the pump island area (four feet depth). One additional soil sample (S-10) was collected from the northeastern cavity margin at a depth of four feet, where "discolored and odorous" soil was encountered during excavation. Soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B and for gasoline range hydrocarbons by method NWTPH-Gx.

- Laboratory analytical results indicated that gasoline and BTEX constituents were not detected in nine of the ten confirmatory soil samples. Gasoline (310 milligrams per kilogram [mg/Kg]), benzene (0.23 mg/Kg), and other BTEX compounds were present in sample S-10, where residual fuel impacts were observed during excavation. Sampling results are illustrated on Figure 3. As summarized in Table 1, gasoline and benzene concentrations at the S-10 location exceed default Ecology's MTCA Method A Cleanup Levels for Soil of 30 and 0.03 mg/Kg, respectively.

Based on the 2007 UST decommissioning results, Plaid requested that PNG conduct a site assessment to provide preliminary evaluation of the possible gasoline release.

## **1.2 PURPOSE AND SCOPE OF WORK**

At Plaid's request, PNG prepared a work plan to conduct site assessment activities near the northeastern corner of the former UST cavity. PNG's work plan (June 20, 2007) included tasks required by Washington Department of Ecology (Ecology) in its published Guidance for Site Checks and Site Assessments document (April 2003). Additional investigation may be required to fully address areas of concern.

PNG's scope of work for this Site Assessment included the following tasks:

- Prepare a Health and Safety Plan to guide field safety protocols, in accordance with rules established by the Occupational Safety and Health Administration.
- Prepare a brief site sampling work plan as required by Ecology.
- Request utility identification through the public Utility Notification Service.
- Review site plans and as-built maps provided to PNG by Plaid Pantries, Inc.
- Contract with a qualified local firm to attempt to identify possible underground utility features at the proposed boring locations.
- Collect soil and groundwater samples (if encountered) from four boring locations using direct-push Geoprobe sampling methods.
- Submit samples for laboratory gasoline and constituent analysis consistent with Ecology guidance.
- Prepare a written site assessment report summarizing the results and findings of the work performed, and recommendations for additional work (if warranted).

## **2 SUBSURFACE EXPLORATION RESULTS**

PNG conducted site exploration fieldwork on November 12, 2007. /Related tasks and observations are summarized below.

### **2.1 GENERAL PNG FIELD PROTOCOLS**

PNG observed drilling operations and collected soil and groundwater samples from four boring locations as illustrated on Figure 2. Boart Longyear, Inc. (Seattle, Washington), operated the Geoprobe drilling and sampling equipment. Each soil core recovered by the Geoprobe is five feet in length, and approximately 1.5 inches in diameter. The core is collected within a new disposable, clear polyethylene tube. Upon retrieval, the sample core is split to observe soils, measure volatile organic screening levels, and to collect samples for chemical analysis. Soils were observed and classified in the field by an experienced professional. Field volatile organic screening was performed using a photoionization detector (PID).

All samples were labeled and immediately placed in an iced cooler after collection. The samples were delivered under chain-of-custody protocol to Friedman & Bruya, Inc. in Seattle, Washington for chemical analyses. Copies of the analytical reports and chain-of-custody documentation are provided in Appendix A. Laboratory testing results are summarized in Table 2.

The borings were advanced in an effort to characterize subsurface conditions in areas near the northeastern margins of the former UST cavity, where evidence of a possible gasoline release was identified during 2006 decommissioning activities. Four borings (designated B-1 through B-4) were advanced to completion depths ranging from ten to 29 feet bgs. Drilling refusal occurred among dense gravels encountered at depths of 27 and 29 feet bgs in borings B-1 and B-3, respectively. Groundwater was not encountered during drilling. Upon completion, the borings were sealed with granular bentonite and finished with cold-patch asphalt at the ground surface. Soil boring logs are included in Appendix B.

### **2.2 GEOPROBE EXPLORATION AND SUBSURFACE CONDITIONS**

Soil borings B-1 through B-4 were located near the northeast corner of the former UST system (Figure 2). Soil samples were collected on a continuous basis and observed for soil type, discoloration, odor, and the presence of organic vapors using a PID. A summary of the soils encountered, field observations, sampling intervals, and field-screening measurements are included in the field boring logs (Appendix B).

Subsurface conditions were relatively consistent at the boring locations. The surrounding ground surface is paved asphalt underlain by approximately 12 inches of gravel fill. Native soils underlying the fill consisted of brown (grading to greenish gray) gravelly silt extending to depths between ten and 14 feet bgs. The silt unit is underlain by dense sandy gravel that was observed to drilling refusal depths of up to 29 feet bgs. Groundwater was not encountered in any of the four borings. According to a preliminary review of local well logs and discussions with experienced local drillers, the water table is anticipated at depths of 40 feet or greater in the site vicinity.

Field-screening measurements for organic vapors in soil ranged between zero and 550 parts per million by volume (ppmV), with the maximum readings observed in boring B-1 at five feet bgs. Due to heavy rains and instrument failure, PID readings were not

obtained for borings B-3 or B-4. Discolored soils and mild organic odors were noted at varying depths from approximately three to ten feet bgs in all four borings. Field screening data and other observations are included in the boring logs (Appendix B).

Soil samples were collected and observed on a continuous basis during drilling. In areas where discolored soil, organic odors, and/or vapors were detected, corresponding soil samples were containerized and submitted for laboratory analysis.

### **2.3 LABORATORY ANALYTICAL RESULTS (SOIL)**

Laboratory analytical methods for soil samples included NWTPH-Gx (gasoline-range hydrocarbons), EPA Method 8260B (volatile organic compounds [VOCs], including BTEX and other fuel constituents), and total lead by EPA Method 6010. Groundwater was not sampled or encountered during this phase of work. Laboratory analytical results for soil are summarized in Table 2 and illustrated on Figure 3.

- **Gasoline:** Based on known site usage and the previous detection of gasoline range hydrocarbons during UST decommissioning, seven soil samples were submitted for this analysis. Gasoline was detected in five of the seven soil samples, ranging where detected from 2.0 to 1,400 mg/Kg. Three of the samples exceeded the MTCA Method A soil cleanup level of 30 mg/Kg, including samples collected from B-1 at five feet (1,400 mg/Kg) and 23 feet bgs (50 mg/Kg), and B-3 at eight feet bgs (390 mg/Kg).
- **VOCs:** The same seven soil samples were also submitted for gasoline constituent VOC analysis. Similarly, VOCs were detected in five of the seven samples. BTEX compounds exceeded MTCA Method A soil cleanup levels in each of the same three samples which also exceeded MTCA criteria for gasoline. In particular, benzene in these samples from B-1 and B-3 ranged between 0.29 and 4.8 mg/Kg, exceeding the respective MTCA Method A soil cleanup level of 0.03 mg/Kg.
- **Lead:** Total lead was detected in five of the seven soil samples at concentrations (where detected) ranging between 2.4 and 8.0 mg/Kg. These site-specific lead concentrations are below representative natural background concentrations of 17 mg/Kg published for Clark County and Washington state (Ecology Publication #94-115, October 1994) and are not indicative of a lead-based gasoline release.

### 3 CONCLUSIONS AND RECOMMENDATIONS

Analytical results indicate that gasoline-range hydrocarbons and VOC constituents exceed "MTCA Method A" soil cleanup levels at two boring locations near the northeastern corner of the former UST cavity. The greatest relative concentrations were measured at a depth of five feet bgs, which is generally consistent with 2006 UST decommissioning results reported for the same area by KEE. Although an intermediate-depth soil sample from the same PNG boring (B-1) at eight feet bgs was relatively unaffected by gasoline with concentrations below MTCA screening criteria, the deepest sample collected from B-1 at 23 feet bgs does exceed the cleanup criteria for gasoline and benzene.

The results of this site assessment confirm that a release of gasoline appears to have occurred at the subject site, although the specific source and timing of the release have not been determined. The lateral and vertical extent of gasoline impacts have not been delineated and further site characterization is appropriate as required by Ecology.

The results of this assessment should be provided to the property owner and to any environmental regulatory agency as required by law.

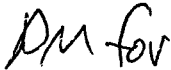
#### 4 LIMITATIONS

PNG has prepared this report for use by Plaid Pantries, Inc. and its agents. This report may be made available to the property owner and to regulatory agencies at the discretion of Plaid Pantries, Inc. This report is not intended for use by others and the information contained herein is not applicable to other sites.

Our interpretation of subsurface conditions is based on field observations and chemical analytical data within the areas explored. Areas with contamination may exist in portions of the site that were not explored or analyzed.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices and laws, rules, and regulations at the time that the report was prepared. No other conditions, expressed or implied, should be understood.

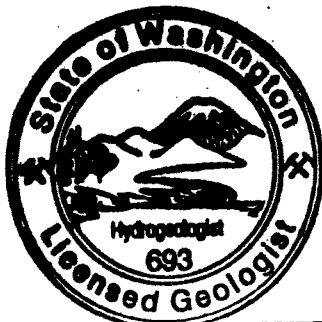
**PNG ENVIRONMENTAL, INC.**



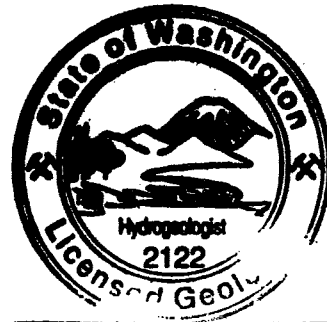
Paul Ecker, R.G.  
Geologist/Project Manager



Paul McBeth, R.G.  
Senior Hydrogeologist/President



PAUL D. ECKER



PAUL E. McBETH



## TABLES

Table 1  
Soil Summary - Historical Site Data  
KEE Environmental  
(mg/Kg)  
Plaid Pantry #324  
Seattle, Washington

Sample Identification <sup>a</sup> KEE Sample Designation Sample Depth (feet bgs) PARAMETERS Date Sampled	S-1 (EX2-16) 16 05/04/2006	S-2 (TANK BT2) 16 05/05/2006	S-3 (TANK BT3) 16 05/05/2006	S-4 (NW-8) 8 05/04/2006	S-5 (WW-8) 8 05/05/2006	S-6 (EW-8) 8 05/05/2006	S-7 (SW-8) 8 05/05/2006	S-8 (S Isld) 4 05/05/2006	S-9 (N Isld) 4 05/05/2006	S-10 (EX1-4) 4 05/04/2006	MTCA Method A Cleanup Level
Benzene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	<b>0.23</b>	<b>0.03</b>
Toluene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.85	<b>7</b>
Ethylbenzene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	2.0	<b>6</b>
Total Xylenes	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	<b>16</b>	<b>9</b>
Gasoline Range Organics (GRO)	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	<b>310</b>	<b>30<sup>b</sup></b>

Notes:

<sup>a</sup> Initial sample designations shown in parentheses

<sup>b</sup> Gasoline cleanup level of 30 mg/Kg based on constituent concentrations greater than 1% gasoline concentrations  
BTEX by EPA Method 8021B

Gasoline Range Organics by Method NWTPH-Gx

mg/Kg = Milligrams per kilogram (parts per million)

bgs = below ground surface

U = Not detected at method reporting limit shown

Values in **bold** indicate the compound concentration exceeds the MTCA Method A Cleanup Level

**Table 2**  
**Soil Analytical Results - (mg/Kg)**  
 Plaid Pantry #324  
 Seattle, Washington

Sample Identification Sample Depth (feet bgs) Date Sampled	B1-5 5 11/12/2007	B1-8 8 11/12/2007	B1-23 23 11/12/2007	B2-9 9 11/12/2007	B3-8 8 11/12/2007	B4-5 5 11/12/2007	B4-8 8 11/12/2007	MTCA Method A Cleanup Level
PARAMETERS								
Benzene	<b>4.8</b>	0.03 U	<b>0.29</b>	0.03 U	<b>0.86</b>	0.03 U	0.03 U	<b>0.03</b>
Toluene	<b>92</b>	0.05 U	6.2	0.05 U	<b>28</b>	0.065	0.05 U	<b>7</b>
Ethylbenzene	<b>55</b>	0.05 U	3.8	0.05 U	<b>21</b>	0.059	0.05 U	<b>6</b>
Total Xylenes	<b>580</b>	0.21	<b>60</b>	0.15 U	<b>136</b>	0.303	0.15 U	<b>9</b>
Methyl t-butyl ether (MTBE)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	<b>0.1</b>
1,2-Dichloroethane (EDC)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA
1,2-Dibromoethane (EDB)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	<b>0.005</b>
Naphthalene	<b>13</b>	0.05 U	3.2	0.05 U	5 U	0.057	0.05 U	<b>5</b>
Gasoline Range Organics (GRO)	<b>1,400</b>	11	<b>50</b>	2 U	<b>390</b>	2	2 U	<b>30</b>
Total Lead	7.95	2.38	-	2.46	4.11	2.61	-	<b>250</b>

**Notes:**

Volatile Organics by EPA Method 8260B

Gasoline Range Organics by Method NWTPH-Gx

Total lead by EPA Method 6010

mg/Kg = Milligrams per kilogram (parts per million)

bgs = below ground surface

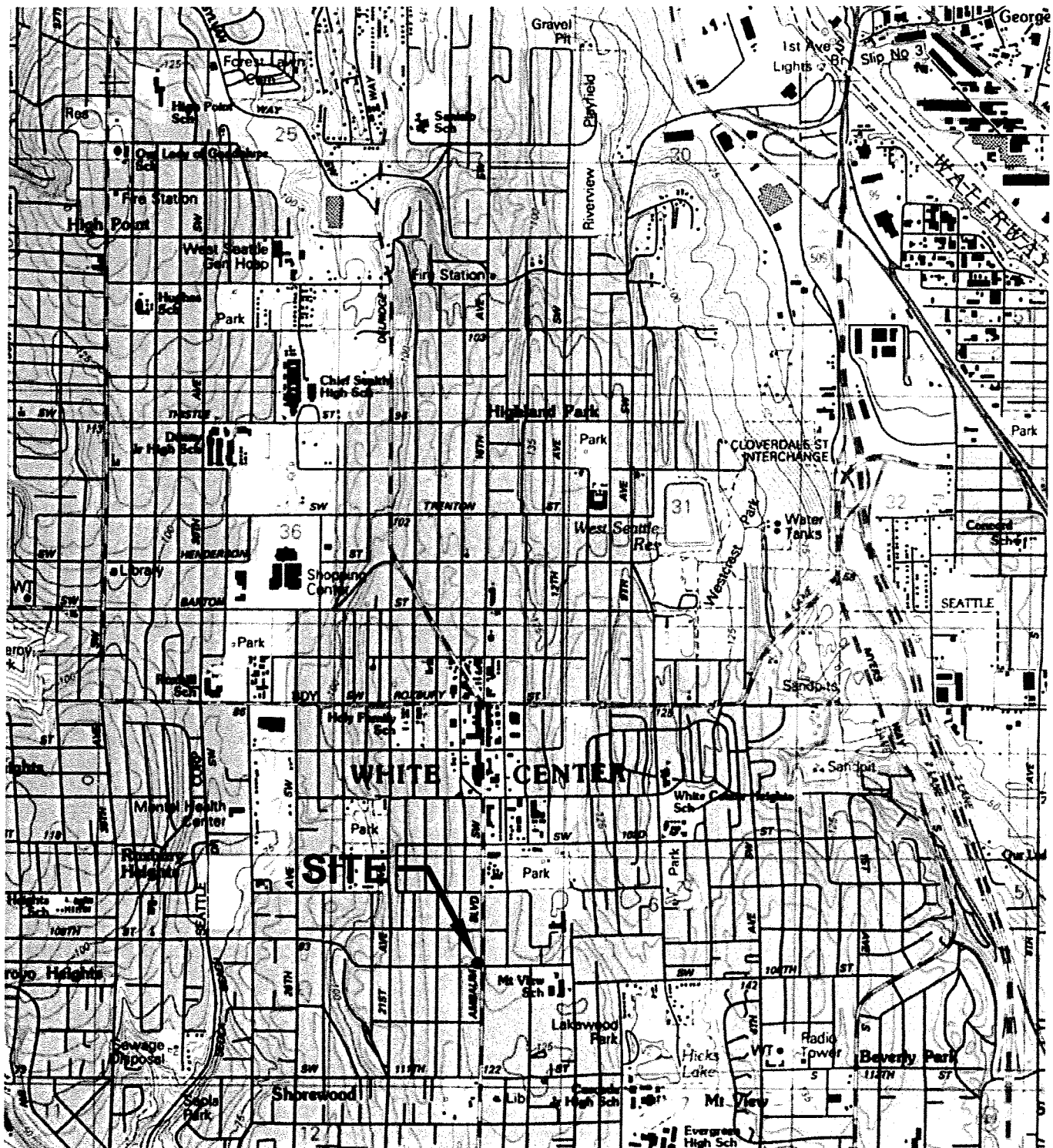
U = Not detected at method reporting limit shown

- = Not measured

NA = Not applicable

Values in **bold** indicate the compound concentration exceeds the MTCA Method A Cleanup Level

## FIGURES



APPROXIMATE SCALE IN FEET



**NOTE:** USGS, Seattle South Quadrangle  
Washington - Snohomish Co.  
7.5 x 15 Minute Quadrangle, 1983.  
Base map provided by MapTech.

**PNG ENVIRONMENTAL, INC.**

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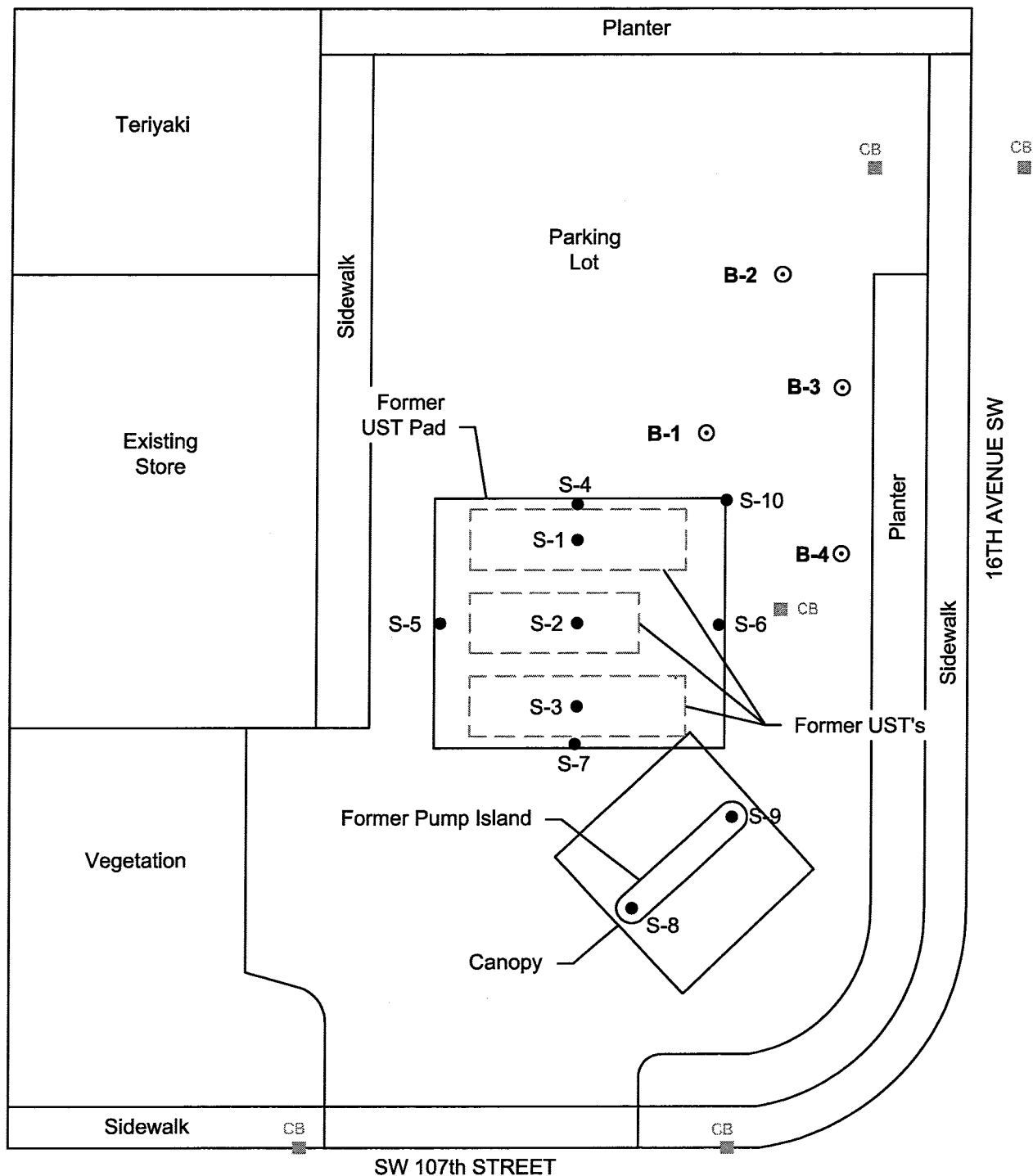
DATE: 10-5-07  
FILE NAME: 1133-01  
DRAWN BY: JUT  
APPROVED BY:

PLAID PANTRY #324  
10645 16TH AVE. SW  
SEATTLE, WASHINGTON

SITE LOCATION MAP

Project No. 1133-01

Figure No. 1

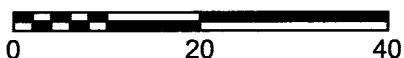


### LEGEND

- Existing Structures
- Former UST's (Removed May 2006)
- Catch Basin
- Soil Sample Location (KEE, May 2006)
- Boring Locations (PNG, Nov. 2007)



APPROXIMATE SCALE IN FEET



**PNG ENVIRONMENTAL, INC.**

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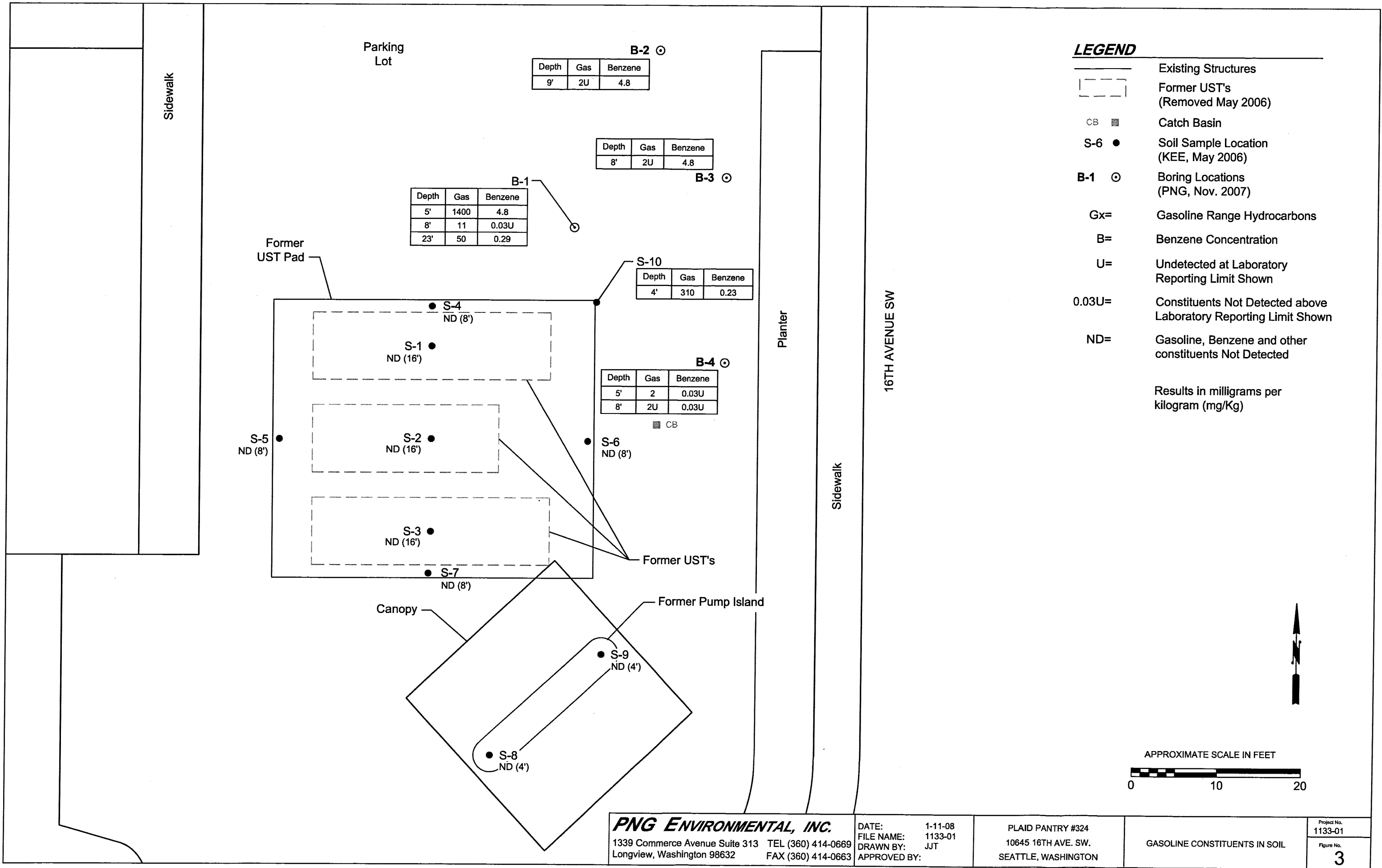
DATE: 1-11-08  
FILE NAME: 1133-01  
DRAWN BY: JJT  
APPROVED BY:

PLAID PANTRY #324  
10645 16TH AVE. SW  
SEATTLE, WASHINGTON

SITE FEATURES

Project No. 1133-01  
Figure No.

2



**PNG ENVIRONMENTAL, INC.**

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FILE NAME: 1133-01  
DRAWN BY: JJT  
APPROVED BY:

PLAID PANTRY #324  
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SEATTLE, WASHINGTON

GASOLINE CONSTITUENTS IN SOIL

Project No.

1133-01

Figure No.

3

**APPENDIX A**

**LABORATORY ANALYTICAL REPORTS AND**

**CHAIN OF CUSTODY DOCUMENTATION**



FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
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December 6, 2007

Craig Hultgren, Project Manager  
PNG Environmental  
1339 Commerce Ave., Suite 313  
Longview, WA 98632

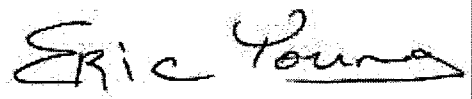
Dear Mr. Hultgren:

Included are the results from the testing of material submitted on November 12, 2007 from the Plaid 324 PO 1133-01, F&BI 711185 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

A handwritten signature in black ink, reading "Eric Young", followed by a vertical line.

Eric Young  
Chemist

Enclosures  
PNG1206R.DOC

## FRIEDMAN & BRUYA, INC.

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### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on November 12, 2007 by Friedman & Bruya, Inc. from the PNG Environmental Plaid 324 PO 1133-01, F&BI 711185 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>PNG Environmental</u>
711185-01	B1-5
711185-02	B1-8
711185-03	B1-23
711185-04	B2-9
711185-05	B3-8
711185-06	B4-5
711185-07	B4-8

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/06/07  
Date Received: 11/12/07  
Project: Plaid 324 PO 1133-01, F&BI 711185  
Date Extracted: 11/16/07  
Date Analyzed: 11/18/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
B1-5 d 711185-01 1/10	1,400	ip
B1-8 711185-02	11	130
B1-23 711185-03	50	146
B2-9 711185-04	<2	52
B3-8 d 711185-05 1/10	390	ip
B4-5 711185-06	2	109
B4-8 711185-07	<2	95
Method Blank	<2	87

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	B1-5	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	711185-01
Date Analyzed:	11/14/07	Data File:	711185-01.028
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	105	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	7.95

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	B1-8	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	711185-02
Date Analyzed:	11/14/07	Data File:	711185-02.030
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower	Upper
Bismuth	105	Limit:	Limit:
		60	125

Analyte:	Concentration
	mg/kg (ppm)
Lead	2.38

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	B2-9	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	711185-04
Date Analyzed:	11/14/07	Data File:	711185-04.031
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	102	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	2.46

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	B3-8	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	711185-05
Date Analyzed:	11/14/07	Data File:	711185-05.032
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower	Upper
Bismuth	101	Limit:	Limit:
		60	125

Analyte:	Concentration
	mg/kg (ppm)

Lead	4.11
------	------

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	B4-5	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	711185-06
Date Analyzed:	11/14/07	Data File:	711185-06.033
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower	Upper
Bismuth	103	Limit:	Limit:
		60	125

Analyte:	Concentration
	mg/kg (ppm)

Lead	2.61
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# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	PNG Environmental
Date Received:	NA	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/14/07	Lab ID:	I7-421 mb
Date Analyzed:	11/14/07	Data File:	I7-421 mb.015
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower	Upper
Bismuth	113	Limit:	Limit:
		60	125

Analyte:	Concentration
	mg/kg (ppm)

Lead	<1
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# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B1-5	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-01
Date Analyzed: 11/14/07	Data File: 111324.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	77	32	147
1,2-Dichloroethane-d4	88	35	150
Toluene-d8	99	35	149
4-Bromofluorobenzene	146	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	40 ve
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	120 ve
Hexane	31 ve	o-Xylene	69 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	9.8 ve
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	21 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	44 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	0.39
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	57 ve
Benzene	4.8	sec-Butylbenzene	3.4
Trichloroethene	<0.03	p-Isopropyltoluene	3.6
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	65 ve	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	13 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B1-5	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-01 1/100
Date Analyzed: 11/16/07	Data File: 111532.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	0 ds	32	147
1,2-Dichloroethane-d4	0 ds	35	150
Toluene-d8	0 ds	35	149
4-Bromofluorobenzene	0 ds	15	196

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<5
Chloromethane	<5	Tetrachloroethene	<2.5
Vinyl chloride	<5	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<5
Chloroethane	<50	Chlorobenzene	<5
Trichlorofluoromethane	<50	Ethylbenzene	55
Acetone	<50	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	<5	m,p-Xylene	430
Hexane	<10	o-Xylene	150
Methylene chloride	<50	Styrene	<5
Methyl t-butyl ether (MTBE)	<5	Isopropylbenzene	8.5
trans-1,2-Dichloroethene	<5	Bromoform	<5
1,1-Dichloroethane	<5	n-Propylbenzene	23
2,2-Dichloropropane	<5	Bromobenzene	<5
cis-1,2-Dichloroethene	<5	1,3,5-Trimethylbenzene	84
Chloroform	<5	1,1,2,2-Tetrachloroethane	<5
2-Butanone (MEK)	<50	1,2,3-Trichloropropane	<5
1,2-Dichloroethane (EDC)	<5	2-Chlorotoluene	<5
1,1,1-Trichloroethane	<5	4-Chlorotoluene	<5
1,1-Dichloropropene	<5	tert-Butylbenzene	<5
Carbon Tetrachloride	<5	1,2,4-Trimethylbenzene	210
Benzene	4.3	sec-Butylbenzene	<5
Trichloroethene	<3	p-Isopropyltoluene	<5
1,2-Dichloropropane	<5	1,3-Dichlorobenzene	<5
Bromodichloromethane	<5	1,4-Dichlorobenzene	<5
Dibromomethane	<5	1,2-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<10
Toluene	92	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<5	Naphthalene	13
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<50		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B1-8	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-02
Date Analyzed: 11/13/07	Data File: 111306.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	96	32	147
1,2-Dichloroethane-d4	108	35	150
Toluene-d8	93	35	149
4-Bromofluorobenzene	104	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.14
Hexane	<0.1	o-Xylene	0.072
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.077
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.13
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.03	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	<0.05	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B1-23	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-03
Date Analyzed: 11/13/07	Data File: 111307.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	98	32	147
1,2-Dichloroethane-d4	111	35	150
Toluene-d8	103	35	149
4-Bromofluorobenzene	109	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	3.8
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	31 ve
Hexane	2.5	o-Xylene	14 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.83
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.0
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	11 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	20 ve
Benzene	0.29	sec-Butylbenzene	0.46
Trichloroethene	<0.03	p-Isopropyltoluene	0.52
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	7.2 ve	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.2
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B1-23	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-03 1/10
Date Analyzed: 11/16/07	Data File: 111533.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	79	32	147
1,2-Dichloroethane-d4	78	35	150
Toluene-d8	77	35	149
4-Bromofluorobenzene	107	15	196

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<0.5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	3.6
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	44
Hexane	<1	o-Xylene	16
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	0.79
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	2.1
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	13
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon Tetrachloride	<0.5	1,2,4-Trimethylbenzene	32
Benzene	<0.3	sec-Butylbenzene	<0.5
Trichloroethene	<0.3	p-Isopropyltoluene	0.54
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<1
Toluene	6.2	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<0.5	Naphthalene	3.0
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B2-9	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-04
Date Analyzed: 11/13/07	Data File: 111308.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	111	32	147
1,2-Dichloroethane-d4	125	35	150
Toluene-d8	109	35	149
4-Bromofluorobenzene	124	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.1	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.03	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	<0.05	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	B3-8	Client:	PNG Environmental
Date Received:	11/12/07	Project:	Plaid 324 PO 1133-01, F&BI 711185
Date Extracted:	11/13/07	Lab ID:	711185-05
Date Analyzed:	11/13/07	Data File:	111309.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	99	32	147
1,2-Dichloroethane-d4	112	35	150
Toluene-d8	104	35	149
4-Bromofluorobenzene	117	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	17 ve
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	38 ve
Hexane	4.7 ve	o-Xylene	24 ve
Methylene chloride	<0.5	Styrene	0.098
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	3.0
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	8.6 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	12 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	22 ve
Benzene	0.86	sec-Butylbenzene	1.1
Trichloroethene	<0.03	p-Isopropyltoluene	0.69
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	26 ve	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	5.2 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B3-8	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-05 1/100
Date Analyzed: 11/16/07	Data File: 111534.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	0 ds	32	147
1,2-Dichloroethane-d4	0 ds	35	150
Toluene-d8	0 ds	35	149
4-Bromofluorobenzene	0 ds	15	196

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<5
Chloromethane	<5	Tetrachloroethene	<2.5
Vinyl chloride	<5	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<5
Chloroethane	<50	Chlorobenzene	<5
Trichlorofluoromethane	<50	Ethylbenzene	21
Acetone	<50	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	<5	m,p-Xylene	96
Hexane	<10	o-Xylene	40
Methylene chloride	<50	Styrene	<5
Methyl t-butyl ether (MTBE)	<5	Isopropylbenzene	<5
trans-1,2-Dichloroethene	<5	Bromoform	<5
1,1-Dichloroethane	<5	n-Propylbenzene	9.1
2,2-Dichloropropane	<5	Bromobenzene	<5
cis-1,2-Dichloroethene	<5	1,3,5-Trimethylbenzene	16
Chloroform	<5	1,1,2,2-Tetrachloroethane	<5
2-Butanone (MEK)	<50	1,2,3-Trichloropropane	<5
1,2-Dichloroethane (EDC)	<5	2-Chlorotoluene	<5
1,1,1-Trichloroethane	<5	4-Chlorotoluene	<5
1,1-Dichloropropene	<5	tert-Butylbenzene	<5
Carbon Tetrachloride	<5	1,2,4-Trimethylbenzene	57
Benzene	<3	sec-Butylbenzene	<5
Trichloroethene	<3	p-Isopropyltoluene	<5
1,2-Dichloropropane	<5	1,3-Dichlorobenzene	<5
Bromodichloromethane	<5	1,4-Dichlorobenzene	<5
Dibromomethane	<5	1,2-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<5	1,2,4-Trichlorobenzene	<10
Toluene	28	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<5	Naphthalene	4.9 j
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<50		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B4-5	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-06
Date Analyzed: 11/16/07	Data File: 111531.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	67	32	147
1,2-Dichloroethane-d4	69	35	150
Toluene-d8	63	35	149
4-Bromofluorobenzene	102	15	196

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.059
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.25
Hexane	<0.1	o-Xylene	0.053
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.059
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.23
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.03	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	0.065	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.057
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: B4-8	Client: PNG Environmental
Date Received: 11/12/07	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 711185-07
Date Analyzed: 11/13/07	Data File: 111311.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	101	32	147
1,2-Dichloroethane-d4	112	35	150
Toluene-d8	99	35	149
4-Bromofluorobenzene	114	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.1	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.03	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	<0.05	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Method Blank	Client: PNG Environmental
Date Received: Not Applicable	Project: Plaid 324 PO 1133-01, F&BI 711185
Date Extracted: 11/13/07	Lab ID: 071830 mb
Date Analyzed: 11/13/07	Data File: 111305.D
Matrix: Soil	Instrument: GCMS5
Units: mg/kg (ppm)	Operator: MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	101	32	147
1,2-Dichloroethane-d4	103	35	150
Toluene-d8	105	35	149
4-Bromofluorobenzene	159	42	164

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.05	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.1	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon Tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.03	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.05
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.1
Toluene	<0.05	Hexachlorobutadiene	<0.1
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.1
2-Hexanone	<0.5		

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 12/06/07

Date Received: 11/12/07

Project: Plaid 324 PO 1133-01, F&BI 711185

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**

Laboratory Code: 711234-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	83	70-130

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 12/06/07

Date Received: 11/12/07

Project: Plaid 324 PO 1133-01, F&BI 711185

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 711195-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	mg/kg (ppm)	5.36	5.64	5	0-20

Laboratory Code: 711195-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Lead	mg/kg (ppm)	50	5.36	104	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	95	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 12/06/07

Date Received: 11/12/07

Project: Plaid 324 PO 1133-01, F&BI 711185

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

Laboratory Code: 711195-06 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.05	<0.05	nm
Bromomethane	mg/kg (ppm)	<0.5	<0.5	nm
Chloroethane	mg/kg (ppm)	<0.5	<0.5	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.5	<0.5	nm
Acetone	mg/kg (ppm)	<0.5	<0.5	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.05	<0.05	nm
Hexane	mg/kg (ppm)	<0.1	<0.1	nm
Methylene chloride	mg/kg (ppm)	<0.5	<0.5	nm
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	<0.05	<0.05	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.05	<0.05	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.05	<0.05	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.05	<0.05	nm
Chloroform	mg/kg (ppm)	<0.05	<0.05	nm
2-Butanone (MEK)	mg/kg (ppm)	<0.5	<0.5	nm
1,2-Dichloroethane (EDC)	mg/kg (ppm)	<0.05	<0.05	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.05	<0.05	nm
Carbon Tetrachloride	mg/kg (ppm)	<0.05	<0.05	nm
Benzene	mg/kg (ppm)	<0.03	<0.03	nm
Trichloroethene	mg/kg (ppm)	0.27	0.41	41 h
1,2-Dichloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Bromodichloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Dibromomethane	mg/kg (ppm)	<0.05	<0.05	nm
4-Methyl-2-pentanone	mg/kg (ppm)	<0.5	<0.5	nm
cis-1,3-Dichloropropene	mg/kg (ppm)	<0.05	<0.05	nm
Toluene	mg/kg (ppm)	<0.05	<0.05	nm
trans-1,3-Dichloropropene	mg/kg (ppm)	<0.05	<0.05	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.05	<0.05	nm
2-Hexanone	mg/kg (ppm)	<0.5	<0.5	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,2-Dibromoethane (EDB)	mg/kg (ppm)	<0.05	<0.05	nm
Chlorobenzene	mg/kg (ppm)	<0.05	<0.05	nm
Ethylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.05	<0.05	nm
m,p-Xylene	mg/kg (ppm)	<0.1	<0.1	nm
o-Xylene	mg/kg (ppm)	<0.05	<0.05	nm
Styrene	mg/kg (ppm)	<0.05	<0.05	nm
Isopropylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
Bromoform	mg/kg (ppm)	<0.05	<0.05	nm
n-Propylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
Bromobenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,3,5-Trimethylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.05	<0.05	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.05	<0.05	nm
2-Chlorotoluene	mg/kg (ppm)	<0.05	<0.05	nm
4-Chlorotoluene	mg/kg (ppm)	<0.05	<0.05	nm
tert-Butylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
sec-Butylbenzene	mg/kg (ppm)	<0.05	<0.05	nm
p-Isopropyltoluene	mg/kg (ppm)	<0.05	<0.05	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.05	<0.05	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
1,2,4-Trichlorobenzene	mg/kg (ppm)	<0.1	<0.1	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.1	<0.1	nm
Naphthalene	mg/kg (ppm)	<0.05	<0.05	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.1	<0.1	nm

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 12/06/07

Date Received: 11/12/07

Project: Plaid 324 PO 1133-01, F&BI 711185

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

Laboratory Code: 711166-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.05	47	24-139
Chloromethane	mg/kg (ppm)	2.5	<0.05	73	30-153
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	73	41-150
Bromomethane	mg/kg (ppm)	2.5	<0.5	116	54-150
Chloroethane	mg/kg (ppm)	2.5	<0.5	111	36-161
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	73	46-164
Acetone	mg/kg (ppm)	2.5	<0.5	94	47-157
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	69	22-144
Hexane	mg/kg (ppm)	2.5	<0.1	63	53-140
Methylene chloride	mg/kg (ppm)	2.5	<0.5	74	38-149
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	109	55-139
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	53-138
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	92	65-125
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	83	26-153
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	93	59-140
Chloroform	mg/kg (ppm)	2.5	<0.05	97	67-126
2-Butanone (MEK)	mg/kg (ppm)	2.5	<0.5	115	40-160
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	104	68-127
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	87	61-134
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	74	59-128
Carbon Tetrachloride	mg/kg (ppm)	2.5	<0.05	80	54-138
Benzene	mg/kg (ppm)	2.5	<0.03	87	61-129
Trichloroethene	mg/kg (ppm)	2.5	<0.03	83	61-132
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	97	69-129
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	105	56-138
Dibromomethane	mg/kg (ppm)	2.5	<0.05	104	65-135
4-Methyl-2-pentanone	mg/kg (ppm)	2.5	<0.5	109	62-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	102	63-134
Toluene	mg/kg (ppm)	2.5	<0.05	84	59-137
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	108	67-133
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	96	71-130
2-Hexanone	mg/kg (ppm)	2.5	<0.5	111	56-157
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	100	71-128
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	74	63-131
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	106	58-132
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	102	71-132
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	82	65-125
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	79	69-130
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	96	69-129
m,p-Xylene	mg/kg (ppm)	5	<0.1	80	67-134
o-Xylene	mg/kg (ppm)	2.5	<0.05	85	73-130
Styrene	mg/kg (ppm)	2.5	<0.05	87	68-127
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	78	50-147
Bromoform	mg/kg (ppm)	2.5	<0.05	91	50-142
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	75	70-129
Bromobenzene	mg/kg (ppm)	2.5	<0.05	84	69-132
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	79	71-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	93	64-138
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	97	66-133
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	79	69-125
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	79	68-126
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	78	70-128
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	79	71-130
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	72	58-136
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	76	70-131
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	79	70-125
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	76	69-121
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	85	68-128
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.05	115	55-151
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.1	84	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.1	75	55-145
Naphthalene	mg/kg (ppm)	2.5	<0.05	95	53-155
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.1	92	55-152



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 12/06/07

Date Received: 11/12/07

Project: Plaid 324 PO 1133-01, F&BI 711185

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	50	29-163
Chloromethane	mg/kg (ppm)	2.5	76	28-147
Vinyl chloride	mg/kg (ppm)	2.5	77	38-143
Bromomethane	mg/kg (ppm)	2.5	117	32-163
Chloroethane	mg/kg (ppm)	2.5	90	10-165
Trichlorofluoromethane	mg/kg (ppm)	2.5	81	22-167
Acetone	mg/kg (ppm)	2.5	97	20-172
1,1-Dichloroethene	mg/kg (ppm)	2.5	72	42-140
Hexane	mg/kg (ppm)	2.5	71	26-153
Methylene chloride	mg/kg (ppm)	2.5	75	53-137
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	107	73-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	85	70-122
1,1-Dichloroethane	mg/kg (ppm)	2.5	94	77-114
2,2-Dichloropropane	mg/kg (ppm)	2.5	84	65-135
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	93	77-120
Chloroform	mg/kg (ppm)	2.5	97	76-117
2-Butanone (MEK)	mg/kg (ppm)	2.5	115	52-153
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	105	76-116
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	90	79-120
1,1-Dichloropropene	mg/kg (ppm)	2.5	78	76-123
Carbon Tetrachloride	mg/kg (ppm)	2.5	83	75-126
Benzene	mg/kg (ppm)	2.5	89	76-118
Trichloroethene	mg/kg (ppm)	2.5	87	75-121
1,2-Dichloropropane	mg/kg (ppm)	2.5	98	78-123
Bromodichloromethane	mg/kg (ppm)	2.5	105	79-126
Dibromomethane	mg/kg (ppm)	2.5	105	79-121
4-Methyl-2-pentanone	mg/kg (ppm)	2.5	109	52-151
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	104	80-127
Toluene	mg/kg (ppm)	2.5	86	76-122
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	108	80-126
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	97	77-121
2-Hexanone	mg/kg (ppm)	2.5	111	67-126
1,3-Dichloropropane	mg/kg (ppm)	2.5	100	76-122
Tetrachloroethene	mg/kg (ppm)	2.5	78	77-124
Dibromochloromethane	mg/kg (ppm)	2.5	107	73-127
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	78-126
Chlorobenzene	mg/kg (ppm)	2.5	83	79-113
Ethylbenzene	mg/kg (ppm)	2.5	82	77-120
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	95	79-125
m,p-Xylene	mg/kg (ppm)	5	82	79-121
o-Xylene	mg/kg (ppm)	2.5	86	80-123
Styrene	mg/kg (ppm)	2.5	89	81-124
Isopropylbenzene	mg/kg (ppm)	2.5	80	79-123
Bromoform	mg/kg (ppm)	2.5	90	65-124
n-Propylbenzene	mg/kg (ppm)	2.5	79	77-123
Bromobenzene	mg/kg (ppm)	2.5	87	78-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	83	79-123
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	94	73-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	97	69-123
2-Chlorotoluene	mg/kg (ppm)	2.5	83	77-120
4-Chlorotoluene	mg/kg (ppm)	2.5	82	77-121
tert-Butylbenzene	mg/kg (ppm)	2.5	82	77-124
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	82	78-123
sec-Butylbenzene	mg/kg (ppm)	2.5	77	77-122
p-Isopropyltoluene	mg/kg (ppm)	2.5	79	79-126
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	81	78-119
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	78	77-114
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	87	78-120
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	116	66-133
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	86	71-129
Hexachlorobutadiene	mg/kg (ppm)	2.5	78	65-134
Naphthalene	mg/kg (ppm)	2.5	95	51-158
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	93	37-182

Note: The calibration verification result for dichlorodifluoromethane and methylene chloride exceeded 15% deviation. The average deviation for all compounds was not greater than 15%; therefore, the calibration is considered valid. This applies to samples 711185-01, -02, -03, -04, -05, -07.

## FRIEDMAN & BRUYA, INC.

### ENVIRONMENTAL CHEMISTS

#### **Data Qualifiers & Definitions**

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 - More than one compound of similar molecule structure was identified with equal probability.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d - The sample was diluted. Detection limits may be raised due to dilution.
- ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb - The analyte indicated was found in the method blank. The result should be considered an estimate.
- fc - The compound is a common laboratory and field contaminant.
- fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht - The sample was extracted outside of holding time. Results should be considered estimates.
- ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The result is below normal reporting limits. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the compound indicated is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The pattern of peaks present is not indicative of diesel.
- y - The pattern of peaks present is not indicative of motor oil.

711185

### SAMPLE CHAIN OF CUSTODY

ME 11-12-07

VS1 / BT

Send Report To CRAIG HULTGREN

Company PNG Environmental

Address 1339 Commerce Ave., #313

City, State, ZIP Longview, WA 98632

Phone # (360) 414-0669 Fax # 414-0663

**SAMPLERS** (signature)

<b>PROJECT NAME/NO.</b>
-------------------------

PO #

PLA. d # 324

1133-01

REMARKS

## TURNAROUND TIME

~~X~~ Standard (2 Weeks)

**RUSH**

Rush charges authorized by:

## SAMPLE DISPOSAL

☒ Dispose after 30 days

**Return samples**

☐ Will call with instructions

[illegible]

Samples received at 4 PM

**Friedman & Bruya, Inc.**  
3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

**Fax (206) 283-5044**

FORMS\COG\COG DEC

**SIGNATURE**

Relinquished by:

Received by

Relinquished by:

Received by:

PRINT NAME

CRAIG HULTGREN

COMPANY

PNG

DATE \_\_\_\_\_

11/12/02

## TIME

1730

FeBT

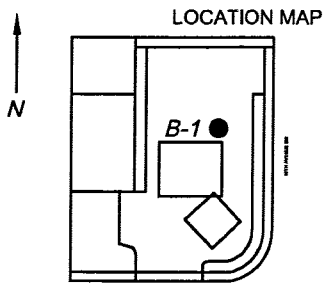
11/12/07

Nhan Phan

**APPENDIX B**  
**BORING LOGS**

# **PNG ENVIRONMENTAL, INC.**

7130 SW Elmhurst Street  
Tigard, Oregon 97223  
TEL (503) 620-2387  
FAX (503) 620-2977



WELL/BORING NUMBER **B-1**

PROJECT NAME: Plaid Pantry #324  
PROJECT NUMBER: 1133-01  
LOCATION: Seattle, Washington  
LOGGED BY: C. Hultgren  
REVIEWED BY: C. Hultgren  
DATE: 1-11-08

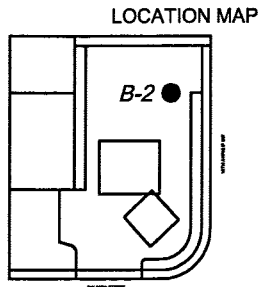
SAMPLE INFORMATION										STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)	WELL DETAIL	WELL CONSTRUCTION DETAIL
SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE SOLE SAMPLE INTERVAL	REC %						
core		0										(0-0.3) Asphalt.		Backfill borehole with hydrated bentonite and seal the surface with asphalt patch.
		0	NS									(0.3-1) Gravel (FILL), gray, predominantly fine subangular gravel, some fine to coarse sand, moist, no odor.		
		54												
core		550	HS		B1-5	5					ML	(1-12) Silt (ML), brown, low plastic fines, variable amounts of fine subrounded gravel, trace fine sand, becoming greenish gray in color with gasoline like odor from ~4' bgs, moist but not wet.		
		15	SS		B1-8							Note: Silt becoming brown from ~9' bgs with decrease in hydrocarbon odor.		
		5	SS			10								
core		2												
		0	NS											
		12	NS			15								
		26												
		4	NS			20					GP	(12-27) Sandy Gravel (GP), brown to gray, fine to medium subangular to subround gravel, varying amounts of fine to coarse sand, local faint hydrocarbon odor, moist but not wet.		
core		25	NS		B1-23							Note: Unable to drill deeper than 27' bgs due to the presence of large gravels = refusal.		
		2	NS			25								
												Total Borehole Depth 27'		
						30								

DRILLING CONTRACTOR: Boart Longyear  
DRILLING METHOD: Geoprobe  
BOREHOLE DIAMETER: 2-Inch  
SAMPLING EQUIPMENT: Geoprobe  
DATE OF INSTALLATION: 11-12-07

**PNG ENVIRONMENTAL, INC.**

7130 SW Elmhurst Street  
Tigard, Oregon 97223  
TEL (503) 620-2387  
FAX (503) 620-2977

N

WELL/BORING NUMBER **B-2**

PROJECT NAME: Plaid Pantry #324  
PROJECT NUMBER: 1133-01  
LOCATION: Seattle, Washington  
LOGGED BY: C. Hultgren  
REVIEWED BY: C. Hultgren  
DATE: 1-11-08

**SAMPLE INFORMATION**

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE LOCATION	SAMPLE INTERVAL	REC %
core		0			B2-9				
			NS						
		0							
			NS			5			
		0							
			NS						
		0				10			
			NS						
		0				15			
			NS						
		0				20			
						25			
						30			

STRATA

SOIL TYPE

**DESCRIPTION**  
(USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)

WELL DETAIL

**WELL CONSTRUCTION DETAIL**

(0-0.3) Asphalt.

(0.3-1) Gravel (FILL), gray, predominantly fine subangular gravel, some fine to coarse sand, moist, no odor.

ML

(1-14) Silt (ML), brown, low plastic fines, variable amounts of fine subrounded gravels, trace fine sand, becoming greenish gray from 6.5' bgs with faint hydrocarbon odor, moist but not wet.

GP

(14-15) Sand (SP), brown, predominantly fine to medium sand, local trace fine gravel, moist, no odor.

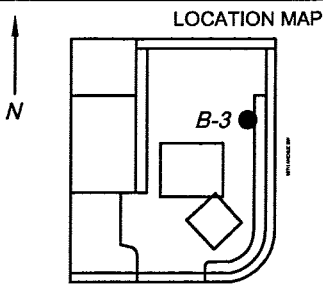
Total Borehole Depth 15'

Backfill borehole with hydrated bentonite and seal the surface with asphalt patch.

DRILLING CONTRACTOR: Boart Longyear  
DRILLING METHOD: Geoprobe  
BOREHOLE DIAMETER: 2-Inch  
SAMPLING EQUIPMENT: Geoprobe  
DATE OF INSTALLATION: 11-12-07

**PNG ENVIRONMENTAL, INC.**

7130 SW Elmhurst Street  
Tigard, Oregon 97223  
TEL (503) 620-2387  
FAX (503) 620-2977

**WELL/BORING NUMBER** B-3

PROJECT NAME: Plaid Pantry #324  
PROJECT NUMBER: 1133-01  
LOCATION: Seattle, Washington  
LOGGED BY: C. Hultgren  
REVIEWED BY: C. Hultgren  
DATE: 1-11-08

SAMPLE INFORMATION										STRATA	SOIL TYPE	DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)	WELL DETAIL	WELL CONSTRUCTION DETAIL
SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE LOCATION	SAMPLE INTERVAL	REC %					
core												(0-0.3) Asphalt.		Backfill borehole with hydrated bentonite and seal the surface with asphalt patch.
												(0.3-1) Gravel (FILL), gray, predominantly fine subangular gravel, some fine to coarse sand, moist, no odor.		
						5					ML	(1-14.5) Silt (ML), brown, low plastic fines, variable amounts of fine subrounded gravels, trace fine sand, becoming greenish gray in color with gasoline like odor from ~5' to 10' bgs, odor decreasing with depth, moist but not wet.		
					B3-8									
						10								
						15								
						20					GP	(14.5-29) Sandy Gravel (GP), brown to gray, fine to medium subangular to subround gravel, varying amounts of fine to coarse sand, local faint hydrocarbon odor, moist but not wet.		
						25						Note: Unable to drill deeper than 29' bgs due to the presence of large gravels = refusal.		
												Note: PID not operating.		
						30						Total Borehole Depth 29'		

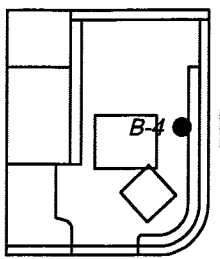
DRILLING CONTRACTOR: Boart Longyear  
DRILLING METHOD: Geoprobe  
BOREHOLE DIAMETER: 2-Inch  
SAMPLING EQUIPMENT: Geoprobe  
DATE OF INSTALLATION: 11-12-07

**PNG ENVIRONMENTAL, INC.**

7130 SW Elmhurst Street  
Tigard, Oregon 97223  
TEL (503) 620-2387  
FAX (503) 620-2977



LOCATION MAP

WELL/BORING NUMBER **B-4**

PROJECT NAME: Plaid Pantry #324  
PROJECT NUMBER: 1133-01  
LOCATION: Seattle, Washington  
LOGGED BY: C. Hultgren  
REVIEWED BY: C. Hultgren  
DATE: 1-11-08

## SAMPLE INFORMATION

SAMPLE TYPE	BLOW COUNTS	PID (ppm)	SHEEN	First Water	LAB SAMPLE I.D.	DEPTH bgs (ft)	SAMPLE LOCATION	INTERVAL	REC %
core			NS		B4-5	5			
core			NS		B4-8				
			NS			10			
						15			
						20			
						25			
						30			

STRATA

SOIL TYPE

DESCRIPTION  
(USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)

WELL DETAIL

## WELL CONSTRUCTION DETAIL

(0-0.3) Asphalt.  
(0.3-1) Gravel (FILL), gray, predominantly fine subangular gravel, some fine to coarse sand, moist, no odor.

(1-10) Silt (ML), brown, low plastic fines, variable amounts of fine subrounded gravels, trace fine sand, becoming greenish gray from 3.5' bgs with possible faint hydrocarbon odor, moist but not wet.

Total Borehole Depth 10'

Note: PID not operating.

Backfill borehole with hydrated bentonite and seal the surface with asphalt patch.

DRILLING CONTRACTOR: Boart Longyear  
DRILLING METHOD: Geoprobe  
BOREHOLE DIAMETER: 2-Inch  
SAMPLING EQUIPMENT: Geoprobe  
DATE OF INSTALLATION: 11-12-07