HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

November 19, 2001

Ms. April Olbrich
METRO
600 NE Grand Avenue
Portland, Oregon 97232

HAI File No. 5659

SUBJECT: Revised Phase II Environmental Site Assessment Activities; 7.29-Acre Property, NW Civic Drive, Gresham, Oregon

Dear Ms. Olbrich:

1. Introduction

At your request, Hahn and Associates, Inc. (HAI) has completed soil assessment activities at the above-referenced site (Figure 1). The sampling activities were conducted to investigate soils for the presence of hazardous materials beneath two ash piles formerly located on the subject site. Other activities included inspecting the ground surface for evidence of spillage or a release where a stockpile of miscellaneous debris was previously observed on the subject property. Former locations of the two ash piles, and the former location of the miscellaneous debris pile are depicted in Figure 2.

2. Background

In November 2001, HAI prepared a Phase I ESA[1] for the subject property which revealed evidence of recognized environmental conditions in connection with the property:

1) Two ash piles were located on the subject property. Burnt materials including oil filters, auto parts, and aerosol cans were noted in or around the ash piles. It appeared that the ash and other materials had been brought to this location as opposed to burnt on site.

2) A stockpile of miscellaneous wood, furniture, and consumer sized containers were also noted on the subject property. Several areas of trash and debris, including clothing, rusted automotive parts, and paper trash were also noted.

The two ash piles were removed from the site by Accord Construction on November 6, 2001, and the miscellaneous debris pile was removed during the following week. The objectives of the Phase II ESA are to determine whether impacts to soils at the location of the two former ash piles exist, and to visually evaluate the former area of the wood debris pile for evidence of a release of regulated materials.

[1] Hahn and Associates, Inc. (2001). *A Phase I Environmental Site Assessment, 7.29-Acre Property, NW Civic Drive, Gresham, Oregon* (HAI Project 5256). November 5, 2001.

3. Field Activities

On November 6, 2001, HAI was present at the site to collect soil samples and complete site investigative activities. On November 19, 2001, HAI returned to the site to complete site investigative activities. Soil sampling was completed in surficial soils at the former location of the two ash piles. Soil samples were collected using a clean, stainless steel hand trowel.

No visual or olfactory evidence of petroleum contamination was observed in the surficial soils beneath either of the two former ash piles. Further, the presence of sheen was not detected when placing clean tap water in a container lid and introducing approximately 2 grams of disaggregated soil to the water.

HAI collected one soil sample from soils approximately 3 to 6 inches below ground surface (bgs) at each of the two former ash pile locations. Upon collection, each soil sample was immediately placed in a 4-ounce sample jar and capped with a Teflon-lined lid. The sample jars were then labeled and transferred to a chilled container for shipment to the analytical laboratory. Standard sampling protocols, including the use of chain-of-custody documentation, were followed for all sampling procedures.

The stockpile of wood and furniture was removed from the subject property at the time of HAI's second site visit on November 19, 2001. The ground surface in the former area of stockpiled debris was inspected for evidence of spillage or a release of regulated material. No evidence of spillage or a release was noted. Due to the inert nature of the former debris pile (wood and furniture), no soil sampling was conducted.

4. Analytical Tests

The soil samples were shipped with chain-of-custody documentation in sealed and chilled containers to Environmental Services Laboratory, Inc. of Tualatin, Oregon.

Soil samples were analyzed for a hydrocarbon identification (HCID) of total petroleum hydrocarbons (TPH) by Northwest Method TPH-HCID and for Priority Pollutant metals by U.S. Environmental Protection Agency (EPA) Method 6010B/7471A.

All laboratory results are summarized on Table 1. The laboratory reports and chain-of-custody documentation for the soil samples are included in Attachment A.

5. Results and Discussion

As summarized on Table 1, gasoline, diesel and oil-range petroleum hydrocarbons were not detected above method detection limits in soils beneath the former ash piles. With regard to metals, only arsenic, a naturally occurring metal, was identified at a concentration greater than EPA Region 9 Preliminary Remediation Goals (PRGs) established for the protection of residential soil. Although greater than Region 9 PRGs, the identified concentration of arsenic (3.33 and 3.78 ppm), are within the range of concentrations (1 to 10 ppm) that are considered typical for naturally-occurring

background levels in northwestern soils. As such, the identified arsenic concentrations do not appear to be attributable to a release from the ash piles.

No evidence of spillage or a release was noted on the ground surface in the vicinity of the former stockpile of wood and furniture when the area was re-inspected on the subject site.

6. Conclusions and Recommendations

Based on the results of the analytical testing and based on a lack of field evidence for petroleum hydrocarbons or other contaminants from field screening methodologies, it does not appear that soils beneath the former ash pile locations have been adversely impacted. Further, due to the inert nature of the former wood and debris pile and the lack of evidence of a release, it does not appear likely that soil impacts exist at this location. Based on the preceding, no actions are necessary with respect to soils at the site, and additional Phase II ESA activities are not recommended at this time.

7. Limitations

The samples discussed in this report were collected, analyzed, and interpreted following the standards of care, skill, and diligence ordinarily provided by a professional in the performance of similar services as of the time the services were performed. This report and the conclusions and/or recommendations contained in it are based solely upon physical sampling and analytical activities that were conducted. The data presented in this report document only the concentrations of the target analytes in the particular sample and not the property as a whole.

If there are any comments or questions, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully,

Derek C. Sandoz
Environmental Scientist

attachments (figures, table, laboratory reports)

Table 1 - Summary of Analytical Results for Soil Samples
Phase II Environmental Site Assessment Activities
NW Civic Drive
Gresham Oregon

Project No. 5659

Area	Sample Number [1]	Sample Date	Analytical Results mg/kg (ppm)												
			EPA Method 7471A	EPA Method 6010B											
			Mercury	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Silver	Thallium	Zinc
Ash Pile #1	001	6-Nov-01	ND>0.133	1.14	**3.78**	ND>1.00	ND>1.00	18.1	14.3	13.	15.5	ND>1.00	ND>1.00	ND>1.00	72.5
Ash Pile #2	002	6-Nov-01	ND>0.132	1.16	**3.33**	ND>1.00	ND>1.00	17.7	12.	10.	13.2	ND>1.00	ND>1.00	ND>1.00	59.4
Reference Levels [2] ==>			23.	31.	0.39	150.	37.	210.	2,900	400	1,600	390.	390.	5.2	23,000.

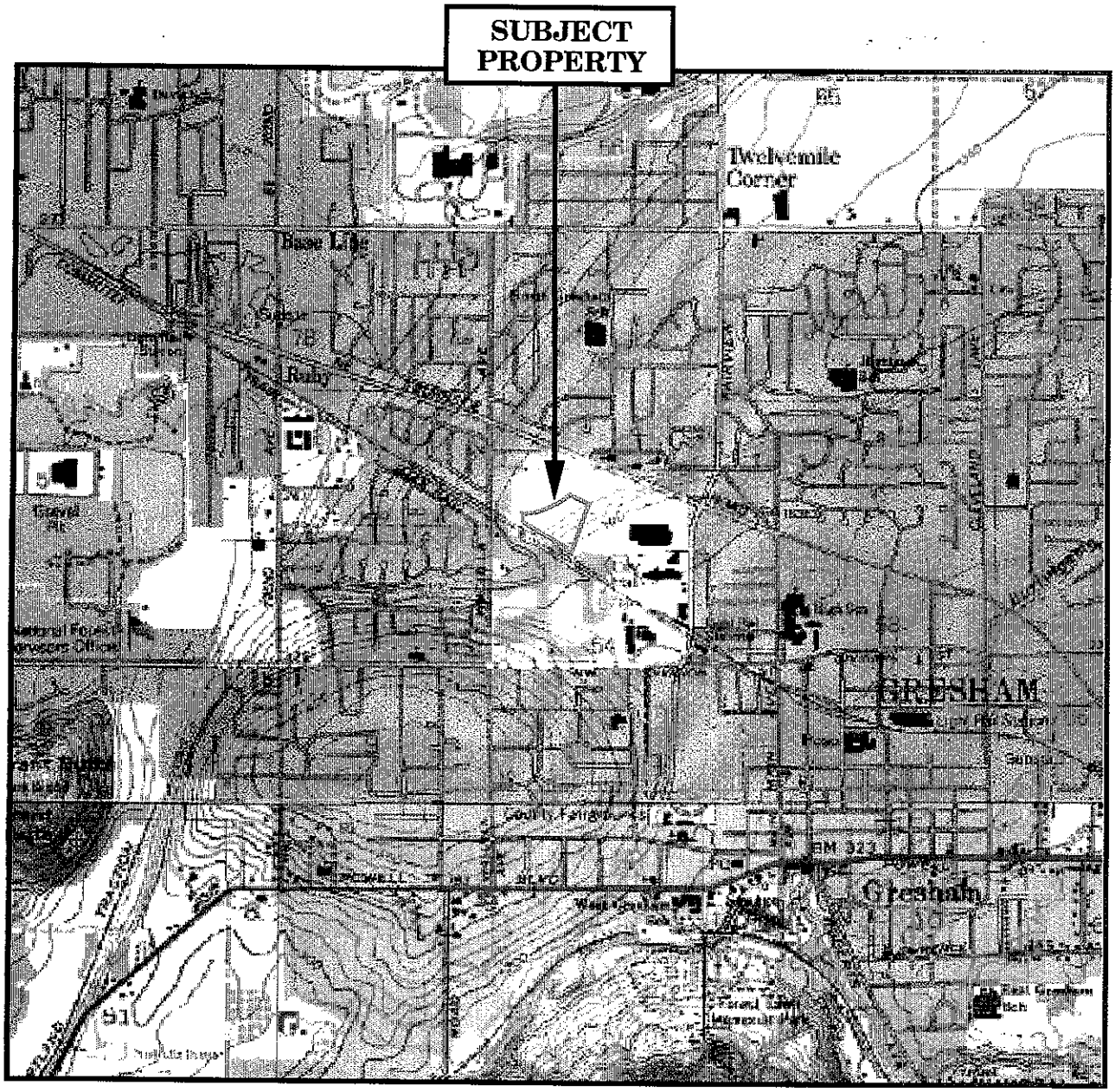
Area	Sample Number	Sample Date	Analytical Results mg/kg (ppm)		
			NW Method TPH-HCID		
			Diesel-range	Gasoline-range	Heavy Oil-range
Ash Pile #1	001	6-Nov-01	ND>66.7	ND>26.7	ND>133
Ash Pile #2	002	6-Nov-01	ND>65.8	ND>26.3	ND>132
Reference Levels [2] ==>					

Note: - = Not Analyzed
Bold and shaded = Detected above Reference Level

1 = Sample number prefix: 5659-011106-
2 = Reference Level based on U.S. EPA Region 9 PRGs - Residential Soil (November 2000)

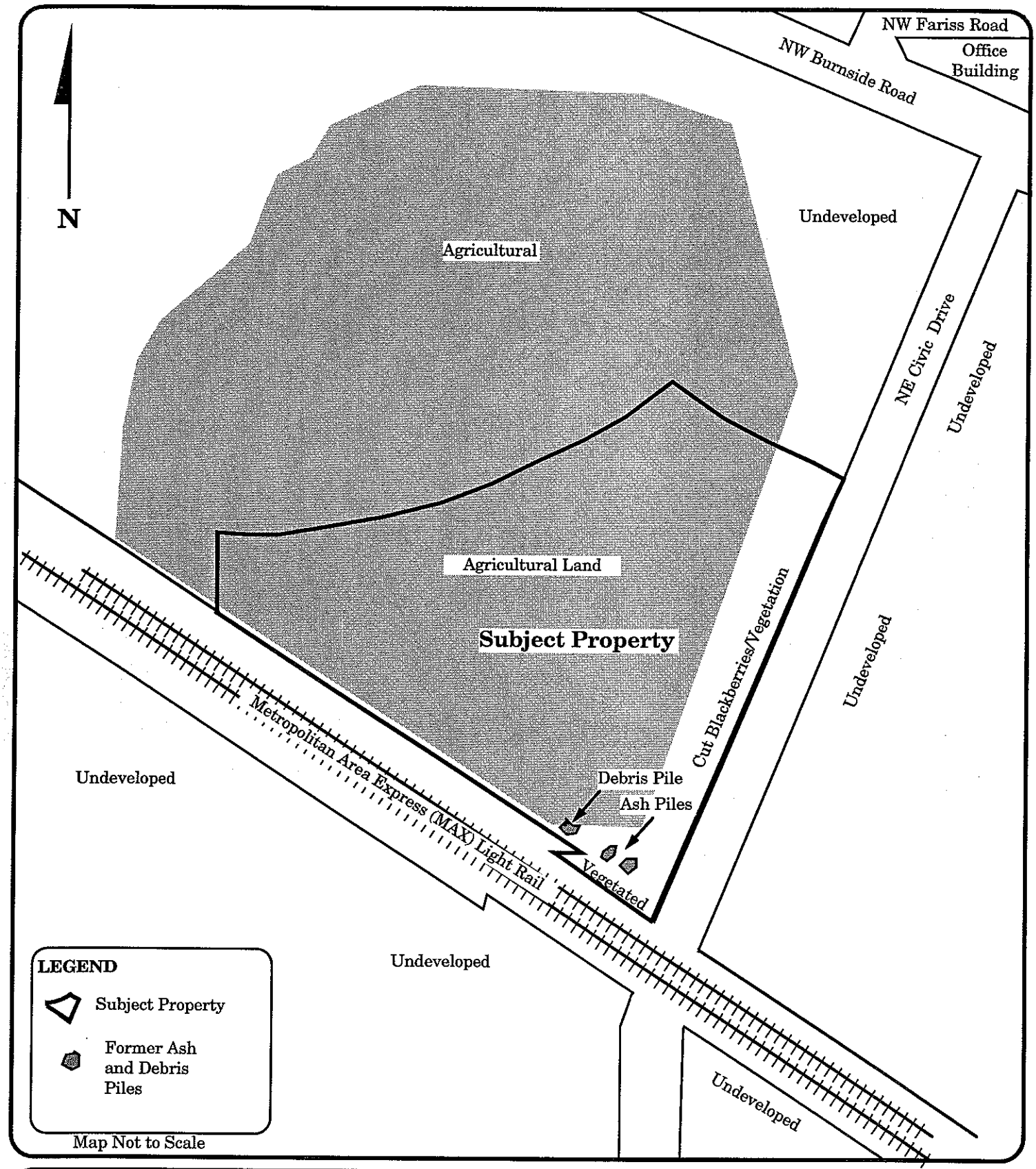
EPA = U.S. Environmental Protection Agency
mg/kg = milligram/kilogram

ND = not detected above detection limit indicated
ppm = parts per million
PRGs = Preliminary Remediation Goals



Note: Base Map from the Camas Washington/Oregon USGS 7.5 Minute Quadrangle, 1994
Contour Interval: 10 Feet

HAI Project No. 5659	**HAHN AND ASSOCIATES** INCORPORATED	**Location and Regulatory List Sites Map**	FIGURE **1**
November 2001	ENVIRONMENTAL MANAGEMENT 434 NW SIXTH AVENUE, SUITE 203 PORTLAND, OREGON 97209 503/796-0717	7.29-Acre Property Vicinity of NW Civic Drive and NW Burnside Road Gresham, Oregon	



HAI Project No. 5659	**HAHN AND ASSOCIATES** INCORPORATED	**Site Use Map**	FIGURE
November 2001	ENVIRONMENTAL MANAGEMENT 434 NW SIXTH AVENUE, SUITE 203 PORTLAND, OREGON 97209 503/796-0717	7.29-Acre Property Vicinity of NW Civic Street and NW 13th Avenue Gresham, Oregon	2

Hi April,

I apologize for any confusion. Here is where we are.

Arsenic was detected at 3.33 parts per million (ppm) . However, arsenic is a naturally ocurring metal across the northwest in ranges from 1 to 12 parts per million, so the concentration of arsenic detected (3.33 ppm) is within the range of concentrations that are considered "natural" (all of this will be further explained in the report which I will be faxing over later this PM)

Gasoline and diesel were Not Detected at the subject site.

The report will be faxed to you today before 5:00 PM.

Thanks,

Derek

>Derrick & Matt, I didn't get a response yet on my questions on the
>results; the arsenic (above EPA standards, but doesn't matter?) &
>the oil, gasoline, diesel (below?). I think we need the letter
>report on Tuesday.
>
>>>> Matthew Mudge <mmudge@hahnasoc.com> 11/09/01 05:27PM >>>
>April,
>Please pardon me for the rushed data entry, good old Friday afternoon.
>Attached is a table that should be a little better.
>Have a great weekend!
>-Matt
>
>
>>I know we were doing metals, which is what I think the table shows;
>>but I wasn't sure if the table shows the HCID & Dx (which I guess I
>>thought related to gasoline products---- nothing like showing one's
>>ignorance!!) I did understand that the pesticides were dropped. So
>>the table says we are below EPA levels & don't need to worry about
>>anything??
>>Tuesday is soon enough to revise the end on the table. Thanks.
>>Have a good weekend. I'll be here for a bit, so if you want to
>>email back today fine, if not, Monday/Tuesday is fine.
>>
>>>>> Matthew Mudge <mmudge@hahnasoc.com> 11/09/01 04:47PM >>>
>>Yes, sorry about that, I must not have updated the project address;
>>however the data is for the site in Gresham.
>>A revised table will be included in the report, unless you need one sooner?
>>Please let me know,
>>Thanks again,

>>-Matt
>>
>>>Hi Matt. Is the label on the table in error? it says NW Natural Gas
>>>facility...
>>>
>>>>>> Matthew Mudge <mmudge@hahnasoc.com> 11/09/01 04:36PM >>>
>>>April,
>>>Attached are the soil data results from Tuesday's sampling in
>>>Gresham. Derek is out of the office today. Please feel free to
>>>contact me with any questions.
>>>Thanks,
>>>-Matt
>>>--
>>>
>>>Matthew S. Mudge / mmudge@hahnasoc.com
>>>Hahn and Associates, Inc.
>>>434 NW 6th Avenue, Suite 203
>>>Portland, Oregon 97209-3600
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>>>Phone: 503/796-0717 / Facsimile: 503/227-2209
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APPENDIX A

Laboratory Reports and Chain of Custody Documentation

Environmental Services Laboratory, Inc.

E S L

17400 SW Upper Boones Ferry Road, Suite 270 • Portland, OR 97224 • (503) 670-8520

November 13, 2001

Mr. Matt Mudge
Hahn and Associates
434 NW Sixth Avenue
Suite 203
Portland, OR 97209
TEL: (503) 796-0717
FAX (503) 227-2209

RE: 5659-011106/Metro-Civic Drive Order No.: 0111038

Dear Mr. Matt Mudge,

Environmental Services Laboratory received 2 samples on 11/7/01 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
HCID Soil (EPA 8015)
ICP Metals (EPA 6010B)
Mercury (EPA 7471A)
PERCENT MOISTURE (SM 2540)

There were no analytical problems encountered, and all data met laboratory QC criteria, unless noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the Laboratory.
The following checked data sections are included in this report, and numbered to indicate total pages within each report section.

x Base Sample Report x Method Blank Report x Sample Duplicate Report
x Matrix Spike/Matrix Spike Duplicate Report x Laboratory Control Spike/Spike Duplicate Report __ Continuing Calibration Verification Report x Initial Calibration Verification Report

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Leslie Rush
Project Manager

Technical Review

ANALYTICAL SERVICES FOR THE ENVIRONMENT

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Lab Order: 0111038
Project: 5659-011106/Metro-Civic Drive
Lab ID: 0111038-01A

Client Sample ID: 001
Tag Number:
Collection Date: 11/6/01
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
MERCURY		**EPA 7471A**				Analyst: **mal**
Mercury	ND	0.133		mg/Kg-dry	1	11/7/01
ICP METALS		**EPA 6010B**				Analyst: **mal**
Antimony	1.14	1.00		mg/Kg	1	11/8/01
Arsenic	3.78	1.00		mg/Kg	1	11/8/01
Beryllium	ND	1.00		mg/Kg	1	11/8/01
Cadmium	ND	1.00		mg/Kg	1	11/8/01
Chromium	18.1	1.00		mg/Kg	1	11/8/01
Copper	14.3	1.00		mg/Kg	1	11/8/01
Lead	13.0	1.00		mg/Kg	1	11/8/01
Nickel	15.5	1.00		mg/Kg	1	11/8/01
Selenium	ND	1.00		mg/Kg	1	11/8/01
Silver	ND	1.00		mg/Kg	1	11/8/01
Thallium	ND	1.00		mg/Kg	1	11/8/01
Zinc	72.5	1.00		mg/Kg	1	11/8/01
HCID SOIL		**EPA 8015**				Analyst: **tmh**
Oil	ND	133		mg/Kg	1	11/6/01
Gasoline	ND	26.7		mg/Kg	1	11/6/01
Diesel	ND	66.7		mg/Kg	1	11/6/01
Surr: O-Terphenyl	77.2	50-150		%REC	1	11/6/01
PERCENT MOISTURE		**SM 2540**				Analyst: **smc**
% Moisture	25.0	0		wt%	1	11/6/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Lab Order: 0111038
Project: 5659-011106/Metro-Civic Drive
Lab ID: 0111038-02A

Client Sample ID: 002
Tag Number:
Collection Date: 11/6/01
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
MERCURY		**EPA 7471A**				Analyst: **mal**
Mercury	ND	0.132		mg/Kg-dry	1	11/7/01
ICP METALS		**EPA 6010B**				Analyst: **mal**
Antimony	1.16	1.00		mg/Kg	1	11/8/01
Arsenic	3.33	1.00		mg/Kg	1	11/8/01
Beryllium	ND	1.00		mg/Kg	1	11/8/01
Cadmium	ND	1.00		mg/Kg	1	11/8/01
Chromium	17.7	1.00		mg/Kg	1	11/8/01
Copper	12.0	1.00		mg/Kg	1	11/8/01
Lead	10.0	1.00		mg/Kg	1	11/8/01
Nickel	13.2	1.00		mg/Kg	1	11/8/01
Selenium	ND	1.00		mg/Kg	1	11/8/01
Silver	ND	1.00		mg/Kg	1	11/8/01
Thallium	ND	1.00		mg/Kg	1	11/8/01
Zinc	59.4	1.00		mg/Kg	1	11/8/01
HCID SOIL		**EPA 8015**				Analyst: **tmh**
Oil	ND	132		mg/Kg	1	11/6/01
Gasoline	ND	26.3		mg/Kg	1	11/6/01
Diesel	ND	65.8		mg/Kg	1	11/6/01
Surr: O-Terphenyl	140.6	50-150		%REC	1	11/6/01
PERCENT MOISTURE		**SM 2540**				Analyst: **smc**
% Moisture	24.0	0		wt%	1	11/6/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-3476** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **0111038** Run ID: **MERC_011107B** SeqNo: **95724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.1									

Sample ID: **MB-3462** Batch ID: **3462** Test Code: **EPA 8015** Units: **mg/Kg** Analysis Date: **11/6/01** Prep Date: **11/6/01**
Client ID: **0111038** Run ID: **BUTTERCUP_011106B** SeqNo: **95389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	50									
Gasoline	ND	20									
Oil	ND	100									
O-Terphenyl	115	0	100	0	115.0%	50	150	0			

Sample ID: **MB-3472** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/Kg** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **0111038** Run ID: **ICP_011108C** SeqNo: **95841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	1									
Arsenic	ND	1									
Beryllium	ND	1									
Cadmium	ND	1									
Chromium	ND	1									
Copper	ND	1									
Lead	ND	1									
Nickel	ND	1									
Selenium	ND	1									
Silver	ND	1									
Thallium	ND	1									
Zinc	ND	1									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT

Sample Duplicate

Sample ID: **0111038-02A DUP** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **002** **0111038** Run ID: **MERC_011107B** SeqNo: **95730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.1	0	0	0.0%	0	0	0	0.0%	20	

Sample ID: **0111029-02A DUP** Batch ID: **3462** Test Code: **EPA 8015** Units: **mg/Kg** Analysis Date: **11/6/01** Prep Date: **11/6/01**
Client ID: **0111038** Run ID: **BUTTERCUP_011106B** SeqNo: **95399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	67.6	0	0	0.0%	0	0	0	0.0%	20	
Gasoline	ND	27	0	0	0.0%	0	0	0	0.0%	20	
Oil	ND	135	0	0	0.0%	0	0	0	0.0%	20	
O-Terphenyl	185.1	0	135	0	137.1%	50	150	0	0.0%	0	

Sample ID: **0111038-02A DUP** Batch ID: **3462** Test Code: **EPA 8015** Units: **mg/Kg** Analysis Date: **11/6/01** Prep Date: **11/6/01**
Client ID: **002** **0111038** Run ID: **BUTTERCUP_011106B** SeqNo: **95409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	65.8	0	0	0.0%	0	0	0	0.0%	20	
Gasoline	ND	26.3	0	0	0.0%	0	0	0	0.0%	20	
Oil	ND	132	0	0	0.0%	0	0	0	0.0%	20	
O-Terphenyl	152.6	0	132	0	115.6%	50	150	0	0.0%	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT
Sample Duplicate

Sample ID: **0111038-02A DUP** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/Kg** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **002** **0111038** Run ID: **ICP_011108C** SeqNo: **95847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.15	1	0	0	0.0%	0	0	1.16	0.9%	20	
Arsenic	3.23	1	0	0	0.0%	0	0	3.33	3.0%	20	
Beryllium	ND	1	0	0	0.0%	0	0	0	0.0%	20	
Cadmium	ND	1	0	0	0.0%	0	0	0	0.0%	20	
Chromium	17.9	1	0	0	0.0%	0	0	17.7	1.1%	20	
Copper	12.1	1	0	0	0.0%	0	0	12	0.8%	20	
Lead	9.06	1	0	0	0.0%	0	0	10	9.9%	20	
Nickel	13.5	1	0	0	0.0%	0	0	13.2	2.2%	20	
Selenium	ND	1	0	0	0.0%	0	0	0	0.0%	20	
Silver	ND	1	0	0	0.0%	0	0	0	0.0%	20	
Thallium	ND	1	0	0	0.0%	0	0	0	0.0%	20	
Zinc	58.4	1	0	0	0.0%	0	0	59.4	1.7%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0111038-01A MS** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **001** **0111038** Run ID: **MERC_011107B** SeqNo: **95727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.07	0.1	1	0	107.0%	75	125	0			

Sample ID: **0111038-01A MSD** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **001** **0111038** Run ID: **MERC_011107B** SeqNo: **95728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.02	0.1	1	0	102.0%	75	125	1.07	4.8%	20	

Sample ID: **0111038-01A MS** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/Kg** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **001** **0111038** Run ID: **ICP_011108C** SeqNo: **95844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	14.9	1	50	0	29.8%	75	125	0			S,MI
Arsenic	46.9	1	50	3.78	86.2%	75	125	0			
Beryllium	45	1	50	0	90.0%	75	125	0			
Cadmium	43.7	1	50	0	87.4%	75	125	0			
Chromium	62.2	1	50	18.1	88.2%	75	125	0			
Copper	62.3	1	50	14.3	96.0%	75	125	0			
Lead	55.8	1	50	13	85.6%	75	125	0			
Nickel	58.7	1	50	15.5	86.4%	75	125	0			
Selenium	40.9	1	50	0	81.8%	75	125	0			
Silver	44.9	1	50	0	89.8%	75	125	0			
Thallium	29.7	1	50	0	59.4%	75	125	0			S,MI
Zinc	112	1	50	72.5	79.0%	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0111038-01A MSD** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/Kg** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **001** **0111038** Run ID: **ICP_011108C** SeqNo: **95845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	14.9	1	50	0	29.8%	75	125	14.9	0.0%	20	S,MI
Arsenic	46.9	1	50	3.78	86.2%	75	125	46.9	0.0%	20	
Beryllium	45	1	50	0	90.0%	75	125	45	0.0%	20	
Cadmium	43.8	1	50	0	87.6%	75	125	43.7	0.2%	20	
Chromium	62.5	1	50	18.1	88.8%	75	125	62.2	0.5%	20	
Copper	60.2	1	50	14.3	91.8%	75	125	62.3	3.4%	20	
Lead	56.3	1	50	13	86.6%	75	125	55.8	0.9%	20	
Nickel	58.8	1	50	15.5	86.6%	75	125	58.7	0.2%	20	
Selenium	41.4	1	50	0	82.8%	75	125	40.9	1.2%	20	
Silver	44.8	1	50	0	89.6%	75	125	44.9	0.2%	20	
Thallium	29.6	1	50	0	59.2%	75	125	29.7	0.3%	20	S,MI
Zinc	112	1	50	72.5	79.0%	75	125	112	0.0%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS-3476** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **0111038** Run ID: **MERC_011107B** SeqNo: **95725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.49	0.1	0.5	0	98.0%	80	120	0			

Sample ID: **LCS-3472** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/Kg** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **0111038** Run ID: **ICP_011108C** SeqNo: **95842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.8	1	50	0	91.6%	80	120	0			
Arsenic	47.4	1	50	0	94.8%	80	120	0			
Beryllium	47.6	1	50	0	95.2%	80	120	0			
Cadmium	47.3	1	50	0	94.6%	80	120	0			
Chromium	47.6	1	50	0	95.2%	80	120	0			
Copper	48.9	1	50	0	97.8%	80	120	0			
Lead	47.1	1	50	0	94.2%	80	120	0			
Nickel	47.4	1	50	0	94.8%	80	120	0			
Selenium	45	1	50	0	90.0%	80	120	0			
Silver	47.2	1	50	0	94.4%	80	120	0			
Thallium	44.3	1	50	0	88.6%	80	120	0			
Zinc	46.4	1	50	0	92.8%	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *13-Nov-01*

CLIENT: Hahn and Associates
Work Order: 0111038
Project: 5659-011106/Metro-Civic Drive

QC SUMMARY REPORT
Initial Calibration Verification Standard

Sample ID: **ICV** Batch ID: **02 HG S-11/0** Test Code: **EPA 7471A** Units: **mg/Kg** Analysis Date: **11/7/01** Prep Date: **11/6/01**
Client ID: **0111038** Run ID: **MERC_011107B** SeqNo: **95723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.02	0.1	1	0	102.0%	90	110	0			

Sample ID: **ICVLOW** Batch ID: **3472** Test Code: **EPA 6010B** Units: **mg/L** Analysis Date: **11/8/01** Prep Date: **11/8/01**
Client ID: **0111038** Run ID: **ICP_011108C** SeqNo: **95839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	.493	0.005	0.5	0	98.6%	90	110	0			
Arsenic	.494	0.005	0.5	0	98.8%	90	110	0			
Beryllium	.496	0.002	0.5	0	99.2%	90	110	0			
Cadmium	.497	0.002	0.5	0	99.4%	90	110	0			
Chromium	.484	0.005	0.5	0	96.8%	90	110	0			
Copper	.489	0.005	0.5	0	97.8%	90	110	0			
Lead	.495	0.005	0.5	0	99.0%	90	110	0			
Nickel	.494	0.005	0.5	0	98.8%	90	110	0			
Selenium	.494	0.005	0.5	0	98.8%	90	110	0			
Silver	.502	0.005	0.5	0	100.4%	90	110	0			
Thallium	.496	0.01	0.5	0	99.2%	90	110	0			
Zinc	.487	0.005	0.5	0	97.4%	90	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

ENVIRONMENTAL SERVICES LABORATORY -- GLOSSARY OF FLAGS

Qualifier	Description
AA	This sample was analyzed after the holding time had expired.
AB	The hydrocarbon pattern in this sample is not typical of gasoline.
AC	The hydrocarbon pattern in this sample is not typical of diesel.
AD	The hydrocarbon pattern in this sample is not typical of oil.
AE	The hydrocarbon pattern in this sample extends into the gasoline range.
AF	The hydrocarbon pattern in this sample extends into the diesel range.
AG	The hydrocarbon pattern in this sample extends into the oil range.
A	This analysis was performed on a VOA sample containing headspace.
B	Analyte detected in the Method Blank above the reporting level.
C	The Relative Percent Difference (RPD) for the primary result and confirmation result was greater than 40%. The higher result was reported.
D	The sample was supplied in an inappropriate container, according to method criteria.
E	This value is above the quantitation limit. It is considered an estimate.
H	The Matrix Spike/Matrix Spike Duplicate (MS/MSD) result was outside control limits. The Laboratory Control Standard/Duplicate (LCS/LCSD) result was in control validating the batch.
J	The result is above the Method Detection Limit (MDL) and below the Reporting Level (RL). It is considered an estimate.
M	The MS/MSD recoveries are not calcuable due to a high amount of analyte in sample.
MI	This indicates a high level of matrix interference affecting the spike or surrogate recovery.
N	See case narrative.
O	Detection Limits are elevated due to sample dilution. See case narrative.
Q	Further inspection of the sample confirms a non-homogenous sample matrix affecting RPD result.
R	The RPD result is outside method control limits. See other qualifiers or case narrative.
S	The spike recovery is outside method control limits. See other qualifiers or case narrative.
T	The RPD between the sample result and duplicate result was greater than 20%. The original result was less than three times the reporting level, therefore the RPD is not applicable.
X	Unable to quantitate surrogate recovery due to sample dilution.

HAHN AND ASSOCIATES, INC.
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Laboratory 011038 ESL
Lab Project No. 011038

CHAIN OF CUSTODY
Chain of Custody No. 1

Project Manager: Matt Mudge
Project No.: 5659
Project Name: Metro → Civic Drive
Collected by: Matt Mudge

Liquid with Sediment Sample
____ Test Filtrate ____ Test Sediment ____ Test Both
Multi-Phase Sample
____ Test One (which) ____ Test Separately ____ Shake

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N): Yes
Provide Preliminary Fax Results: YES

Sample Number Prefix: 5659-011106-

#Rush → by Friday!?

Quantify as necessary

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Matrix: Water	Matrix: Other	Number of Containers	NW TPH-HCID	NW TPH-Ox	PP Metals (5 EPA 1010/7000)	RUSH	Remarks
-01	001	11/6/01	15:24	Ash pit #1	X			2	X		X	X	
-02	002	↓	15:40	Ash pit #2	X			2	X		X	X	

Relinquished by	Company	Date	Time	Received by	Company
M.S. Mudge	HAHN & ASSOC				