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Engineers and Scientists Serving the Built and Natural Environments

Initial Subsurface Assessment

Kraus-Anderson Property
Montgomery Wards Automotive Service Center
Bloomington, Minnesota

Prepared For

Kraus-Anderson

Project No. Number CMXX-98-0719
September 24, 1998

Braun Intertec Corporation

BRAUN[SM]
INTERTEC

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612-941-5600 Fax: 942-4844

Engineers and Scientists Serving the Built and Natural Environments®

September 24, 1998

Project No. CMXX-98-0719

Mr. Burt Dahlberg
Kraus-Anderson
4220 West Shakopee Road
Suite 200
Bloomington, Minnesota 55437

Dear Mr. Dahlberg:

Re: Initial Subsurface Assessment, Montgomery Wards Automotive Service Center, Bloomington, Minnesota.

In accordance with verbal authorization received from Kraus-Anderson, Braun Intertec Corporation (Braun Intertec) conducted an initial subsurface assessment of the referenced property (site). The objective of the initial subsurface assessment was to provide an initial screening of one of the recognized environmental conditions identified during our recent Phase I ESA conducted at the site.

For a complete discussion of our evaluation, please refer to the attached report.

We appreciate the opportunity to provide professional services to you for this project. If you have any questions or comments regarding this letter or the attached report, please call me at (612) 833-4750.

Sincerely,

Jon A. Carlson, PG, CHMM
Principal

Attachment: Initial Subsurface Assessment Report

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A. Introduction

A.1. Authorization

In accordance with the verbal authorization received from Kraus-Anderson (property owner), Braun Intertec Corporation (Braun Intertec) conducted a limited subsurface assessment of the Montgomery Wards automotive service center in Bloomington, Minnesota (site). A site location map is attached as Figure 1.

A.2. Project Background

Braun Intertec completed a Phase I environmental site assessment (Phase I ESA) of the site on September 24, 1998. The Phase I ESA identified an area of heavy petroleum staining approximately 25 feet long and 5 feet wide adjacent to the north side of the building as one of the recognized environmental conditions as defined by the ASTM Standard Practice E 1527-97.

Based on the findings of the Phase I ESA, Braun Intertec recommended that additional evaluation, including the collection of a soil sample from the previously identified area of heavy petroleum staining. Assessment of other recognized environmental conditions was limited because access for testing inside the facility was denied by Montgomery Wards. The soil sample collection location is illustrated in Figure 2.

A.3. Project Objective

The objective of this initial subsurface assessment was to evaluate whether soils at the site were adversely impacted by the recognized environmental condition described in Section A.2.

A.4. Scope of Services

The following work tasks were conducted at the site as part of this evaluation:

- Soils were collected from an area of heavy petroleum staining adjacent to the Montgomery Wards automotive service center building foundation from a depth of 0.5 feet below ground surface.

The site work relating to this initial subsurface assessment was conducted on September 21, 1998.

B. Initial Subsurface Assessment Results

B.1 Soil Contamination Observations

The soil samples collected were examined by a Braun Intertec environmental technician for staining and other apparent signs of contamination. In addition, the soil samples were screened for the presence of organic vapors using a photoionization detector (PID). The PID was equipped with a 10.6 electron volt lamp and calibrated to an isobutylene standard. The PID was used to test fresh surfaces of soil collected and to perform headspace analyses, as recommended by the Minnesota Pollution Control Agency (MPCA).

No PID readings greater than 10 units were recorded. However, strong petroleum hydrocarbon odors, heavy petroleum staining and a viscous petroleum texture were observed associated with collected soils.

B.2. Laboratory Chemical Analyses of Soil Samples

The soil samples were analyzed at the Braun Intertec laboratory for the presence and concentrations of diesel range organics (DRO), gasoline range organics (GRO), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), RCRA metals, and polychlorinated biphenyls (PCBs). The complete laboratory analytical report received from the Braun Intertec laboratory is attached in Appendix A.

Analytical results indicated that the following compounds were detected in exceedance of MPCA proposed soil reference values (SRVs)for unrestricted land use: diesel range organics (DRO) at 11,000 milligrams per kilogram (mg/kg), arsenic at 48 mg/kg, lead at 780 mg/kg, anthracene at 53 mg/kg, benzo(a)anthracene at 200 mg/kg, benzo(b)flouranthene at 220 mg/kg, benzo(a)pyrene at 190 mg/kg, dibenzo(a,h)anthracene at 25 mg/kg, indeno(1,2,3-cd)pyrene at 110 mg/kg and naphthalene at 8 mg/kg. MPCA SRVs were developed to be protective of human health. Exceedance of MPCA SRVs indicates that compounds are present at concentrations which present an unacceptable risk to human health (i.e., increased cancer risk). Reported compounds and MPCA SRVs are presented on Table 1.

C. Conclusions

The results of this Phase II ESA indicate that a release of petroleum hydrocarbons and heavy metals has occurred at the site. This release represents an unacceptable risk to human health (i.e., increased cancer risk).

D. Recommendations

Braun Intertec recommends that the MPCA be notified of the identified release in accordance with Minnesota Statue 115c.061. In addition, Braun Intertec recommends conducting an expanded subsurface investigation. Federal and state laws require that persons legally responsible for petroleum releases notify the MPCA of the release, investigate and, if necessary, clean up the release. According to MPCA guidance documents, the site investigation must fully define the extent and magnitude of the soil and/or groundwater contamination caused by the release.

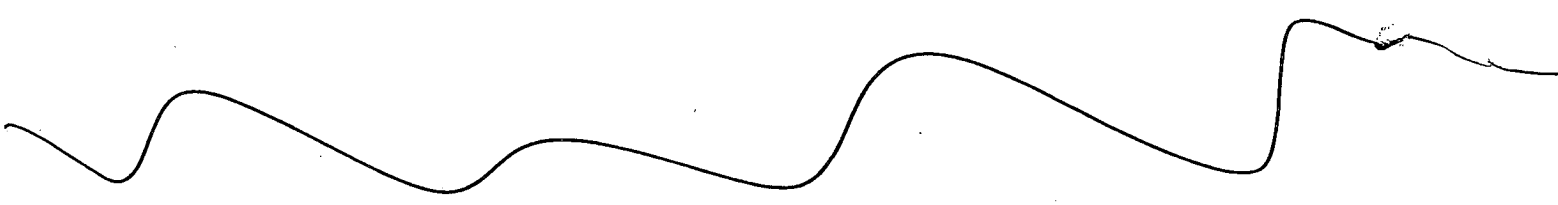
Table

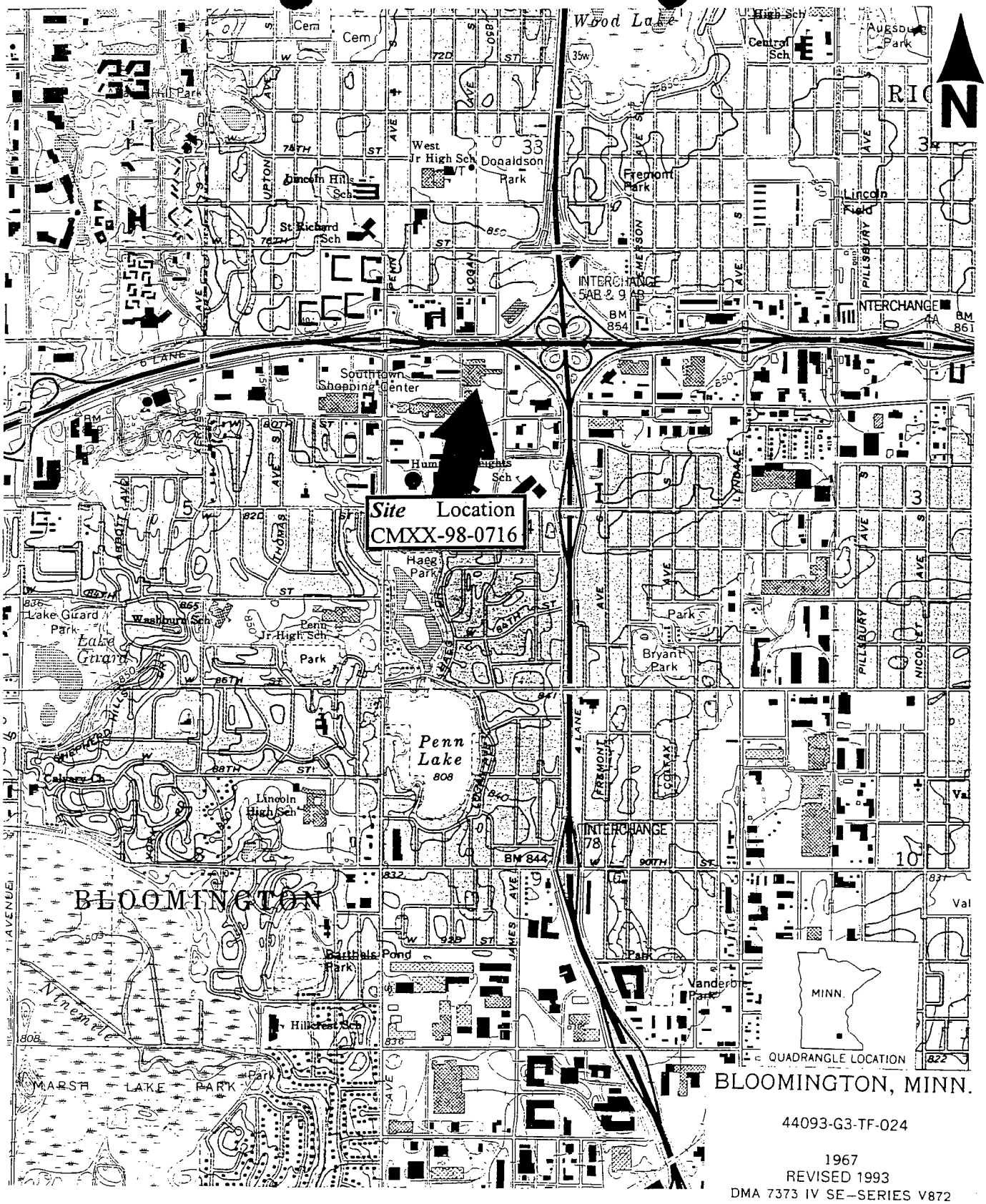
Table 1
Soil Analytical Laboratory Results

Compound	Reported Concentration	MPCA SRV
DRO	**11,000**	200*
Chloroform	0.064	2.5
Aresenic	**48**	12
Lead	**780**	400
Barium	290	2300
Cadmium	15	26
Chromium	**140**	66
Mercury	0.06	3
Acenaphthene	27	90
Anthracene	**53**	5
Benzo(a)anthracene	**200**	20
Benzo(b)fluoranthene	**220**	20
Benzo(k)fluoranthene	49	200
Benzo(g,h,i)perylene	130	NA
Benzo(a)pyrene	**190**	2
Carbazole	34	NA
Chrysene	210	2000
Dibenzo(a,h)anthracene	**25**	2
Dibenzofuran	14	NA
Fluoranthene	370	1080
Fluorene	24	1140
Indeno(1,2,3-cd)pyrene	**110**	20
2-Methylnaphthalene	6.1	NA
Naphthalene	**8.2**	2
Phenathrene	260	NA
Pyrene	340	800

Notes:
All values reported in milligrams per kilogram
NA - Not Available
DRO - diesel range organics
MPCA SRV - Minnesota Pollution Control Agency Soil Reference Values
* - proposed DRO SRV
- exceeds MPCA SRV

Figures





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***Site* Location Map**

Montgomery Wards Service Center
Southtown Mall
Bloomington, Minnesota

INT	DATE	SHEET
DRAWN BY: JMG	09/18/98	1
APP'D BY: ARL		OF
JOB NO. CMXX-98-0716		1
DWG. NO. 1	FIGURE NO.	1
SCALE 1: 24,000		

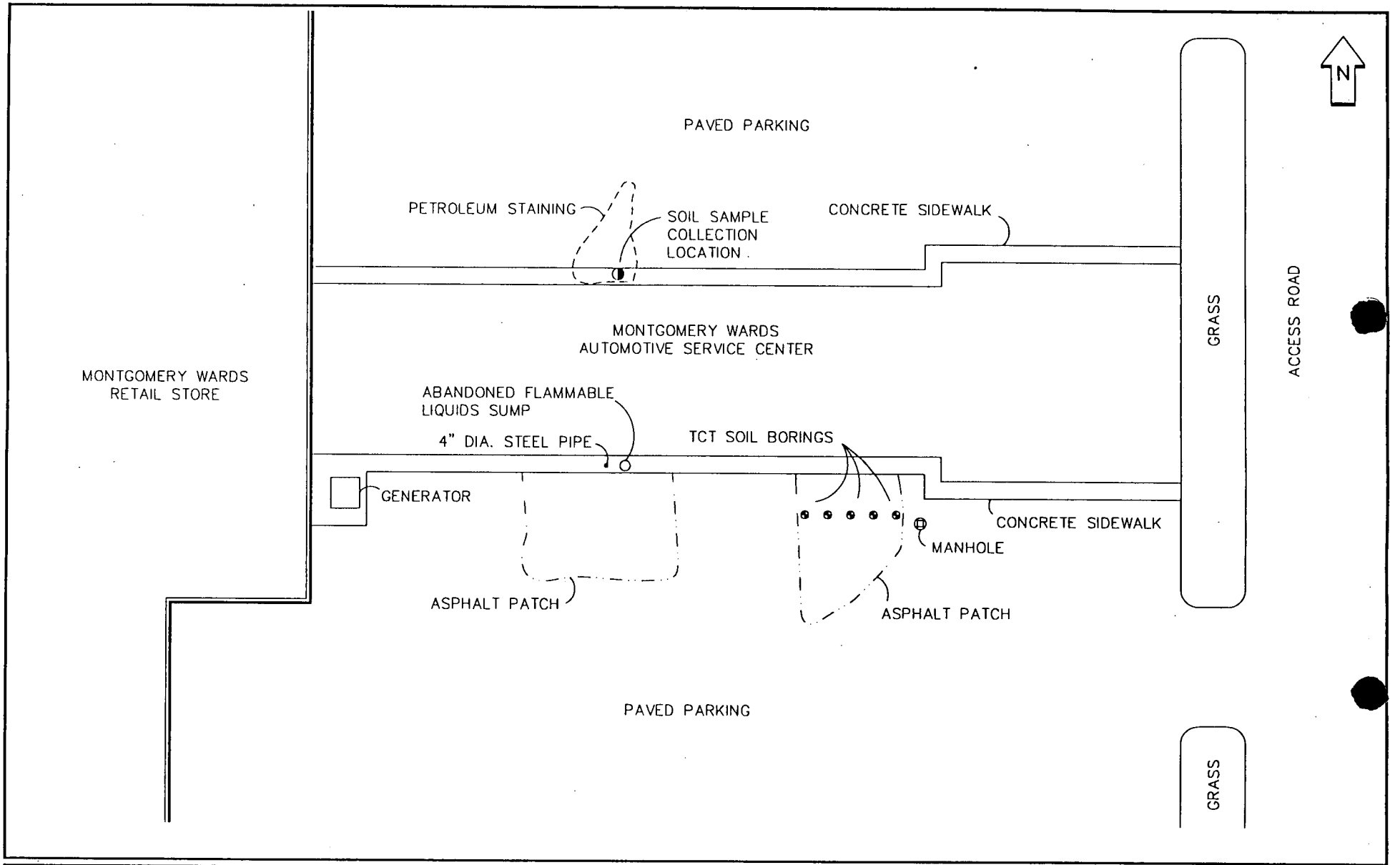

FIGURE NO. 2	INT	DATE		
	DRAWN BY: JAG	9-22-98		
	APP'D BY: MB	9-22-98		
	JOB NO. CMXX-98-0716			
	DWG. NO. MX80716	SHEET	OF	
	SCALE NONE			

SITE SKETCH
MONTGOMERY WARDS AUTOMOTIVE SERVICE CENTER
SOUTHTOWN MALL – BLOOMINGTON, MINNESOTA

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Appendix A

Analytical Laboratory Results

BRAUN℠
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September 23, 1998

Report 98-8111
Project CMXX-98-0719

Mr. Mike Berger/E2
Braun Intertec Corporation

Re: Kraus-Anderson Construction Co.

Braun Intertec Corporation received your analytical request on September 21, 1998. Analytical results are summarized on the following laboratory report.

Routine Braun Intertec Corporation QA/QC was followed. Quality control data have been reviewed.

When possible these samples will be held by the laboratory for 14 days from the date of this report. The process of disposing or returning the samples will occur at that time. Arrangements can be made for extended sample storage by contacting us at this time.

We appreciate the opportunity to meet your analytical needs. If you have any questions or would like additional information, please call Barbara Maki at 612-942-4820.

Sincerely,

Barbara J. Maki
Project Manager

Attachments
Chain of Custody
Laboratory Results

Client:	Kraus-Anderson Construction C[redacted]	**Laboratory:**	Braun Intertec Co[redacted]tion	**Date Sampled:**	09/21/98
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-01				

Client Sample ID/Description: Surface

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result		
Petroleum Hydrocarbons										
Diesel Range Organics (dry weight)	WI DRO	09/21/98	WI DRO	09/22/98	100	0.89	1000	11000	mg/kg	ho
Gasoline Range Organics (dry weight)	SW-846 5030	09/22/98	WI GRO	09/22/98	1.0	10	10	<10	mg/kg	hj
Remarks: The reporting limit (RL) was raised. A dilution of the sample was necessary due to high concentrations of this analyte.										
Gas Chromatography/Mass Spectrometry										
Acetone	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	270	1000	<1000	ug/kg	
Allyl Chloride	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	8.2	50	<50	ug/kg	
Benzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.4	50	<50	ug/kg	
Bromobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.5	50	<50	ug/kg	
Bromochloromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.4	50	<50	ug/kg	
Bromodichloromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.0	50	<50	ug/kg	
Bromoform	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	13	250	<250	ug/kg	
n-Butylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.7	50	<50	ug/kg	
Bromomethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.8	50	<50	ug/kg	
sec-Butylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.8	50	<50	ug/kg	
tert-Butylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.2	50	<50	ug/kg	
Carbon Tetrachloride	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	2.2	50	<50	ug/kg	
Chlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.2	50	<50	ug/kg	
Chloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.6	50	<50	ug/kg	
Chloroform	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	64	ug/kg	
Chloromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.2	50	<50	ug/kg	
2-Chlorotoluene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.8	50	<50	ug/kg	
4-Chlorotoluene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	<50	ug/kg	
1,2-Dibromo-3-Chloropropane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.0	50	<50	ug/kg	
1,2-Dibromoethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.6	50	<50	ug/kg	
Dibromomethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.2	50	<50	ug/kg	
Dibromochloromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.0	50	<50	ug/kg	
1,2-Dichlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.4	50	<50	ug/kg	
1,3-Dichlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.8	50	<50	ug/kg	
1,4-Dichlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.7	50	<50	ug/kg	
1,1-Dichloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.0	50	<50	ug/kg	
1,2-Dichloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	2.8	50	<50	ug/kg	
1,1-Dichloroethene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	7.0	50	<50	ug/kg	
cis-1,2-Dichloroethene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.0	50	<50	ug/kg	
trans-1,2-Dichloroethene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.6	50	<50	ug/kg	
Dichlorodifluoromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.8	50	<50	ug/kg	
Dichlorofluoromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.1	50	<50	ug/kg	
1,2-Dichloropropane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	<50	ug/kg	
1,3-Dichloropropane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.4	50	<50	ug/kg	
2,2-Dichloropropane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	8.0	50	<50	ug/kg	
cis-1,3-Dichloropropene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.4	50	<50	ug/kg	

hj The sample chromatogram indicates the presence of higher boiling hydrocarbons than is expected in a gasoline range organic (GRO) chromatogram.
ho The sample chromatogram indicates the presence of higher boiling hydrocarbons than is expected in a diesel range organic (DRO) chromatogram.

(Report continued on next page)

Client:	Kraus-Anderson Construction C[redacted]	**Laboratory:**	Braun Intertec Co[redacted]tion	**Date Sampled:**	09/21/98
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-01				

Client Sample ID/Description: Surface

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result		
1,1-Dichloropropene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.9	50	<50	ug/kg	
trans-1,3-Dichloropropene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	2.8	50	<50	ug/kg	
Ethyl Benzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.7	50	<50	ug/kg	
Ethyl Ether	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	<50	ug/kg	
Hexachlorobutadiene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	8.6	50	<50	ug/kg	
Isopropylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.8	50	<50	ug/kg	
p-Isopropyltoluene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.9	50	<50	ug/kg	
Methyl Ethyl Ketone	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	120	500	<500	ug/kg	
Methyl Isobutyl Ketone	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.1	250	<250	ug/kg	
Methyl Tertiary Butyl Ether	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.6	50	<50	ug/kg	
Methylene Chloride	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	22	250	<250	ug/kg	
Naphthalene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.8	50	<50	ug/kg	
n-Propylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.4	50	<50	ug/kg	
Styrene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.7	50	<50	ug/kg	
1,1,1,2-Tetrachloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.6	50	<50	ug/kg	
1,1,2,2-Tetrachloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.0	50	<50	ug/kg	
Tetrachloroethene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	14	100	<100	ug/kg	
Tetrahydrofuran	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	10	250	<250	ug/kg	
Toluene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.0	50	<50	ug/kg	
1,2,3-Trichlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.9	50	<50	ug/kg	
1,2,4-Trichlorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	6.0	50	<50	ug/kg	
1,1,1-Trichloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.8	50	<50	ug/kg	
1,1,2-Trichloroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	<50	ug/kg	
Trichloroethene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	4.4	50	<50	ug/kg	
Trichlorofluoromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	11	50	<50	ug/kg	
1,2,3-Trichloropropane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.5	50	<50	ug/kg	
Trichlorotrifluoroethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	7.0	50	<50	ug/kg	
1,2,4-Trimethylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	2.8	50	<50	ug/kg	
1,3,5-Trimethylbenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	3.3	50	<50	ug/kg	
Vinyl Chloride	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	14	50	<50	ug/kg	
m,p-Xylene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	12	50	<50	ug/kg	
o-Xylene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	5.4	50	<50	ug/kg	
*** Volatile Organic Surrogates ***										
Bromofluorobenzene	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	-	-	88	% rec	
1,2-Dichloroethane-d4	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	-	-	110	% rec	
Toluene-d8	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	-	-	100	% rec	
Dibromofluoromethane	SW-846 5030	09/22/98	SW-846 8260	09/22/98	1.0	-	-	100	% rec	
Semi-Volatiles (GC/MS)										
Acenaphthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.011	1.7	27	mg/kg	gb
Acenaphthylene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.01	1.7	<1.7	mg/kg	ga
Anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.0050	1.7	53	mg/kg	gb
Benzo(a)anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.0070	17	200	mg/kg	gb

ga The reporting limit (RL) was raised. A dilution of the sample was necessary due to matrix interferences.
gb The reporting limit (RL) was raised. A dilution of the sample was necessary due to high concentrations of this analyte.

(Report continued on next page)

Client:	Kraus-Anderson Construction C[redacted]	**Laboratory:**	Braun Intertec Co[redacted]tion	**Date Sampled:**	09/21/98
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-01				

Client Sample ID/Description: Surface

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result		
Benzo(b)fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.0080	17	220	mg/kg	gb
Benzo(k)fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.0080	1.7	49	mg/kg	gb
Benzo(g,h,i)perylene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.016	17	130	mg/kg	gb
Benzo(a)pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.01	17	190	mg/kg	gb
Carbazole	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.029	1.7	34	mg/kg	gb
Chrysene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.01	17	210	mg/kg	gb
Dibenzo(a,h)anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.016	1.7	25	mg/kg	gb
Dibenzofuran	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.025	1.7	14	mg/kg	gb
Fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.012	17	370	mg/kg	gb
Fluorene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.0090	1.7	24	mg/kg	gb
Indeno(1,2,3-cd)pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.016	17	110	mg/kg	gb
2-Methylnaphthalene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.031	1.7	6.1	mg/kg	gb
Naphthalene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	0.012	1.7	8.2	mg/kg	gb
Phenanthrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.0070	17	260	mg/kg	gb
Pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	250	0.0070	17	340	mg/kg	gb
*** Semi-Volatile Surrogates ***										
2-Fluorobiphenyl	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	-	0	96	% rec	
Nitrobenzene-d5	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	-	0	81	% rec	
Terphenyl-d14	SW-846 3550	09/22/98	SW-846 8270	09/23/98	25	-	0	86	% rec	
Polychlorinated Biphenyls (PCBs)										
PCB 1016	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	13	40	<40	ug/kg	
PCB 1221	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	13	40	<40	ug/kg	
PCB 1232	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	13	40	<40	ug/kg	
PCB 1242	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	13	40	<40	ug/kg	
PCB 1248	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	13	40	<40	ug/kg	
PCB 1254	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	28	83	<83	ug/kg	
PCB 1260	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	28	83	<83	ug/kg	
PCB 1268	SW-846 3540	09/22/98	SW-846 8081	09/23/98	1.0	28	83	<83	ug/kg	
Metals										
Arsenic, Total	-	-	SW-846 6010	09/23/98	5.0	0.74	11	48	mg/kg	ga
Barium, Total	-	-	SW-846 6010	09/23/98	5.0	0.16	5.0	290	mg/kg	ga
Cadmium, Total	-	-	SW-846 6010	09/23/98	5.0	0.089	2.5	15	mg/kg	ga
Chromium, Total	-	-	SW-846 6010	09/23/98	5.0	0.28	5.0	140	mg/kg	ga
Lead, Total	-	-	SW-846 6010	09/23/98	5.0	0.62	9.5	780	mg/kg	ga
Mercury, Total	-	-	SW-846 7471	09/22/98	1.0	0.006	0.02	0.06	mg/kg	
Selenium, Total	-	-	SW-846 6010	09/23/98	5.0	0.97	15	<15	mg/kg	ga
Silver, Total	-	-	SW-846 6010	09/23/98	5.0	0.17	5.0	<5.0	mg/kg	ga

ga The reporting limit (RL) was raised. A dilution of the sample was necessary due to matrix interferences.
gb The reporting limit (RL) was raised. A dilution of the sample was necessary due to high concentrations of this analyte.

(Report continued on next page)

Client:	Kraus-Anderson Construction [redacted]	**Laboratory:**	Braun Intertec Co[redacted]tion	**Date Sampled:**	
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-02				

Client Sample ID/Description: Method Blank

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Gas Chromatography/Mass Spectrometry									
Acetone	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	270	1000	<1000	ug/kg
Allyl Chloride	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	8.2	50	<50	ug/kg
Benzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.4	50	<50	ug/kg
Bromobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.5	50	<50	ug/kg
Bromochloromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.4	50	<50	ug/kg
Bromodichloromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.0	50	<50	ug/kg
Bromoform	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	13	250	<250	ug/kg
n-Butylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.7	50	<50	ug/kg
Bromomethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.8	50	<50	ug/kg
sec-Butylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.8	50	<50	ug/kg
tert-Butylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.2	50	<50	ug/kg
Carbon Tetrachloride	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	2.2	50	<50	ug/kg
Chlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.2	50	<50	ug/kg
Chloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.6	50	<50	ug/kg
Chloroform	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
Chloromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.2	50	<50	ug/kg
2-Chlorotoluene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.8	50	<50	ug/kg
4-Chlorotoluene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
1,2-Dibromo-3-Chloropropane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.0	50	<50	ug/kg
1,2-Dibromoethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.6	50	<50	ug/kg
Dibromomethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.2	50	<50	ug/kg
Dibromochloromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.0	50	<50	ug/kg
1,2-Dichlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.4	50	<50	ug/kg
1,3-Dichlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.8	50	<50	ug/kg
1,4-Dichlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.7	50	<50	ug/kg
1,1-Dichloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.0	50	<50	ug/kg
1,2-Dichloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	2.8	50	<50	ug/kg
1,1-Dichloroethene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	7.0	50	<50	ug/kg
cis-1,2-Dichloroethene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.0	50	<50	ug/kg
trans-1,2-Dichloroethene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.6	50	<50	ug/kg
Dichlorodifluoromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.8	50	<50	ug/kg
Dichlorofluoromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.1	50	<50	ug/kg
1,2-Dichloropropane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
1,3-Dichloropropane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.4	50	<50	ug/kg
2,2-Dichloropropane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	8.0	50	<50	ug/kg
cis-1,3-Dichloropropene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.4	50	<50	ug/kg
1,1-Dichloropropene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.9	50	<50	ug/kg
trans-1,3-Dichloropropene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	2.8	50	<50	ug/kg
Ethyl Benzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.7	50	<50	ug/kg
Ethyl Ether	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
Hexachlorobutadiene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	8.6	50	95	ug/kg

(Report continued on next page)

Client:	Kraus-Anderson Construction C[redacted]	**Laboratory:**	Braun Intertec Cor[redacted]ion	**Date Sampled:**	
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-02				

Client Sample ID/Description: Method Blank

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Isopropylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.8	50	<50	ug/kg
p-Isopropyltoluene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.9	50	<50	ug/kg
Methyl Ethyl Ketone	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	120	500	<500	ug/kg
Methyl Isobutyl Ketone	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.1	250	<250	ug/kg
Methyl Tertiary Butyl Ether	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.6	50	<50	ug/kg
Methylene Chloride	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	22	250	<250	ug/kg
Naphthalene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.8	50	<50	ug/kg
n-Propylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.4	50	<50	ug/kg
Styrene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.7	50	<50	ug/kg
1,1,1,2-Tetrachloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.6	50	<50	ug/kg
1,1,2,2-Tetrachloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.0	50	<50	ug/kg
Tetrachloroethene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	14	100	<100	ug/kg
Tetrahydrofuran	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	10	250	<250	ug/kg
Toluene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.0	50	<50	ug/kg
1,2,3-Trichlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.9	50	88	ug/kg
1,2,4-Trichlorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	6.0	50	<50	ug/kg
1,1,1-Trichloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.8	50	<50	ug/kg
1,1,2-Trichloroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
Trichloroethene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	4.4	50	<50	ug/kg
Trichlorofluoromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	11	50	<50	ug/kg
1,2,3-Trichloropropane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.5	50	<50	ug/kg
Trichlorotrifluoroethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	7.0	50	<50	ug/kg
1,2,4-Trimethylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	2.8	50	<50	ug/kg
1,3,5-Trimethylbenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	3.3	50	<50	ug/kg
Vinyl Chloride	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	14	50	<50	ug/kg
m,p-Xylene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	12	50	<50	ug/kg
o-Xylene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	5.4	50	<50	ug/kg
*** Volatile Organic Surrogates ***									
Bromofluorobenzene	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	-	-	97	% rec
1,2-Dichloroethane-d4	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	-	-	98	% rec
Toluene-d8	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	-	-	101	% rec
Dibromofluoromethane	SW-846 5030	09/21/98	SW-846 8260	09/21/98	1.0	-	-	100	% rec
Semi-Volatiles (GC/MS)									
Acenaphthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.011	0.067	<0.067	mg/kg
Acenaphthylene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.01	0.067	<0.067	mg/kg
Anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0050	0.067	<0.067	mg/kg
Benzo(a)anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0070	0.067	<0.067	mg/kg
Benzo(b)fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0080	0.067	<0.067	mg/kg
Benzo(k)fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0080	0.067	<0.067	mg/kg
Benzo(g,h,i)perylene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.016	0.067	<0.067	mg/kg
Benzo(a)pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.01	0.067	<0.067	mg/kg
Carbazole	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.029	0.067	<0.067	mg/kg

(Report continued on next page)

Client:	Kraus-Anderson Construction C	**Laboratory:**	Braun Intertec Cor tion	**Date Sampled:**	
Log-in:	98-8111	**Lab Contact/Phone:**	B. Maki/612-942-4820	**Date Received:**	09/21/98
Project Number:	CMXX-98-0719	**Sampler:**	Braun Intertec	**Date Reported:**	09/23/98
PO Number:		**% Moisture:**	Not Applicable		
Client Reference:		**MDL:**	Method Detection Limit		
Matrix:	Solid	**RL:**	Reporting Limit		
Lab Sample ID:	98-8111-02				

Client Sample ID/Description: Method Blank

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Chrysene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.01	0.067	<0.067	mg/kg
Dibenzo(a,h)anthracene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.016	0.067	<0.067	mg/kg
Dibenzofuran	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.025	0.067	<0.067	mg/kg
Fluoranthene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.012	0.067	<0.067	mg/kg
Fluorene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0090	0.067	<0.067	mg/kg
Indeno(1,2,3-cd)pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.016	0.067	<0.067	mg/kg
2-Methylnaphthalene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.031	0.067	<0.067	mg/kg
Naphthalene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.012	0.067	<0.067	mg/kg
Phenanthrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0070	0.067	<0.067	mg/kg
Pyrene	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	0.0070	0.067	<0.067	mg/kg
*** Semi-Volatile Surrogates ***									
2-Fluorobiphenyl	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	-	-	78	% rec
Nitrobenzene-d5	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	-	-	78	% rec
Terphenyl-d14	SW-846 3550	09/22/98	SW-846 8270	09/23/98	1.0	-	-	97	% rec

(End of Report)

BRAUN INTERTEC
Braun Intertec Corporation
6875 Washington Ave. S.
Edina, MN 55439-0108
(612) 942-4930 Fax (612) 942-4844
labservices@brauncorp.com

REQUEST FOR LABORATORY ANALYTICAL SERVICES

IMPORTANT
Date Results Requested: 24 hr.
Time turnaround
Rush Charges Authorized? X Yes ___ No
Rush / Quote # Barb M.

For Braun Intertec Use Only
Braun Intertec Project No.
CMXX-98-0719
98-8111

REPORT RESULTS TO	Contact Name Mike Berger	Project ID/Project Name Kraus Anderson	P.O. #
	Company	SEND INVOICE TO	Contact Name / Company
	Mailing Address		Address
	City, State, Zip		City, State, Zip
	Telephone # / Fax #		Telephone # / Fax #

Special Instructions and/or Specific Regulatory Requirements:
(method, limit of detection, petrofund, reporting units)

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	Metals Field Filtered Y/N	DRO	GRO	VOC	RCRA	PCB	PAH					FOR LAB USE ONLY
~~B1~~ Surface	9/21/98	15:50	Soil		5		✓	✓	✓	✓	✓	✓					98-8111
~~B2~~																	
~~B~~																	

CHAIN OF CUSTODY

Collected by: Jeannie M Goette (print)
Collector's Signature: Jeannie Goette
Relinquished by: Jeannie M Goette Date/Time 9/21/16:26
Received by: [signature] Date/Time 9/21/98 1626
Relinquished by: Date/Time
Received by: Date/Time

Evidence Tape Intact ☐ Yes ☐ No ☒ N/A
Sample Condition Upon Receipt: ☒ Acceptable ☐ Other
Temperature ______ °C ☒ Received on Ice

Comments: