ARCADIS GERAGHTY & MILLER

ARCADIS Geraghty & Miller, Inc.
420 North Fifth Street
Suite 1035
Minneapolis
Minnesota 55401
Tel 612 339 9434
Fax 612 336 4538

Ms. Stacy Hendry- Van Patten
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

ENVIRONMETAL

Subject:
Boker's Inc.
File Replacement
MPCA Leak Site #00008345

Minneapolis,
22 February 2000

Contact:
Scott M. Lapham

Extension:
612-373-0221

Dear Stacy:

As discussed, enclosed are the documents for your review and consideration. Let me know if you require any additional information. Attached you will find:

- Remedial Investigation Report-January 12, 1996 (Braun)
- Laboratory results dated 9/18/98 for water within the excavation at the site.
- Laboratory results dated 9/4/98 for soil from the site.
- SVE data.
- Environmental Soils Assessment Report-August 31, 1995 (Braun)

Sincerely,

ARCADIS Geraghty & Miller, Inc.

Scott M Lapham

Scott Lapham
Vice President\Office Manager

Copies:

Our ref.:
MN000400.0001/shv22200

BRAUN[SM]
INTERTEC

Engineers and Scientists
Serving the Built and
Natural Environments

Environmental Soils Assessment

Proposed Addition to the Boker's, Inc. Building
3104 Snelling Avenue
Minneapolis, Minnesota

Prepared For

Tillitt & Associates, Inc.

Project Number CMXX-95-0340
August 31, 1995

Braun Intertec Corporation

BRAUN INTERTEC

Braun Intertec Corporation
1345 Northland Drive
Mendota Heights, Minnesota 55120-1141
612-683-8700 Fax: 683-8888

Engineers and Scientists Serving the Built and Natural Environments

August 31, 1995

Project No. CMXX-95-0340

James Tillitt
Tillitt & Associates, Inc.
219 North 2nd Street, Suite 207
Minneapolis, Minnesota 55401

Dear Mr. Tillitt:

Re: Environmental Soils Assessment, Proposed Addition to the Boker's, Inc. Building, 3104 Snelling Avenue, Minneapolis, Minnesota.

In accordance with your written authorization, dated May 3, 1995, Braun Intertec Corporation (Braun Intertec) conducted an environmental soils assessment of the referenced property (*Site*). Braun Intertec recently conducted a geotechnical evaluation of the *Site* for use in planning for a proposed addition to the existing *Site* building. For additional information regarding the results of the geotechnical evaluation, please refer to Braun Intertec report *A Geotechnical Evaluation Report for Tillitt & Associates, Inc., Proposed Addition to the Boker's, Inc. Building, 3104 Snelling Avenue, Minneapolis, Minnesota* (Braun Intertec Project Number BABX-95-268).

In conjunction with the geotechnical evaluation Braun Intertec was requested to evaluate soils for potential petroleum contamination at the *Site* in two areas where you indicated that petroleum underground storage tanks (USTs) were formerly located. For a complete discussion of our assessment, please refer to the attached Phase II ESA Report.

We appreciate the opportunity to provide professional services to you for this project. If you have any questions or comments regarding the contents of this letter or the attached report, please call Tom Maertens at (612) 683-8777 or Jon Carlson at (612) 683-8760.

Sincerely,

Thomas J. Maertens
Project Manager/Environmental Scientist

Jon A. Carlson, CHMM
Supervisor, Environmental Site Assessments

Attachment: Environmental Soils Assessment Report

f:\wpfiles\cmxx\95\0349\0340.R01

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A. Introduction

A.1. Authorization

In accordance with the written authorization received from Mr. James Tillitt of Tillit & Associates, Inc., dated May 3, 1995, Braun Intertec Corporation (Braun Intertec) conducted an environmental soils assessment of the Proposed Addition to the Boker's, Inc. Building, 3104 Snelling Avenue, Minneapolis, Minnesota (*Site*). A *Site* Location Map is contained in Appendix A.

A.2. Project Background

Braun Intertec recently conducted a geotechnical evaluation of the *Site* for use in planning for a proposed addition to the existing *Site* building. For additional information regarding the results of the geotechnical evaluation, please refer to Braun Intertec report *A Geotechnical Evaluation Report for Tillitt & Associates, Inc., Proposed Addition to the Boker's, Inc. Building, 3104 Snelling Avenue, Minneapolis, Minnesota,* (Braun Intertec Project Number BABX-95-268 [Geotechnical Evaluation]).

In conjunction with the Geotechnical Evaluation, Braun Intertec was requested to evaluate soils for potential petroleum contamination at the *Site* in two areas where you indicated that petroleum underground storage tanks (USTs) were formerly located.

A.3. Project Objective

The objective of this Phase II ESA was to evaluate whether soils at the *Site* were contaminated with petroleum products associated with the USTs formerly located at the *Site*.

A.4. Scope of Services

The following work tasks were conducted at the *Site* as part of this assessment:

- evaluation of soil samples collected from soil borings ST-1, ST-2, ST-3, and ST-9 for indications of petroleum contamination, including screening of the soil samples in the field for the presence of organic vapors with a photoionization detector (PID);
- laboratory chemical analyses of soil samples for the presence of petroleum constituents; and
- preparation of a report detailing the methods and results of our assessment.

B. Soils Evaluation

B.1. Methods

B.1.a. Soil Boring Locations. Nine standard penetration test borings (labeled ST-1 through ST-9) were completed at the *Site* during the geotechnical evaluation. Soil borings ST-1 and ST-2 were completed at the southwest and northwest corners of the proposed addition, respectively. ST-3 was completed in the former location of the UST on the western portion of the *Site* and ST-9 was completed in the former location of the UST on the eastern portion of the *Site*. A Soil Boring Locations Map is contained in Appendix B.

B.1.b. Soil Boring Procedures. The penetration test borings were performed on May 4, 1995 with a truck-mounted core and auger drill unit. All down-hole equipment was steam-cleaned prior to its use at the *Site*. Sampling for the borings was conducted in accordance with ASTM D 1586 "Penetration Test and Split-Barrel Sampling of Soils." Using this method, the bore hole was advanced with the hollow-stem auger to the desired test depth. Then a 140-pound hammer falling 30 inches drove a standard, 2-inch OD, split-barrel sampler a total penetration of 1 1/2 feet below the tip of the hollow-stem auger. The blows for the last foot of penetration were recorded and were used as an index of soil strength characteristics. Soil samples were collected from the drill cuttings and/or at 2 1/2-foot vertical intervals to the termination depths of the borings, which ranged from 5.0 feet below land surface (bls) to 15.0 feet bls.

B.1.c. Soil Classification. For more information on soil classification at the *Site* please refer to the Geotechnical Evaluation.

B.1.d. Soil Contamination Screening. The soil samples retrieved from the split-barrel sampler were examined visually by an environmental geologist for unusual staining, odors and other apparent signs of petroleum contamination. In addition, the soil samples from borings ST-1, ST-2, ST-3, and ST-9 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 a benzene standard. The PID was used to test fresh surfaces of soil retrieved in the split-barrel sampler and to perform a jar-headspace method of analyses.

The jar-headspace analytical procedure is used to field-screen organic vapor levels in soils. The procedure consists of half-filling a clean, 250-milliliter jar with a soil sample. The jar is

quickly covered with a sheet of clean aluminum foil and tightly sealed with a threaded cap. Headspace development proceeds for at least 10 minutes. The jar is shaken vigorously for 15 seconds, both at the beginning and the end of the headspace development period. After headspace development, the jar lid is removed and the PID probe is inserted through the foil seal to one-half the headspace depth. The highest reading observed on the PID is then recorded.

B.1.e. Soil Sampling Procedures. As indicated in Section A.2. and B.1.d., only soil samples from ST-1, ST-2, ST-3, and ST-9 were screened for the presence of organic vapors. As discussed in Section B.2.b. field-screening of soil borings ST-1 and ST-9 did not indicated the presence of petroleum contamination and thus were not selected for laboratory analysis. One soil sample was collected from soil boring ST-2 at a depth of 1.0 foot to 2.0 feet below land surface (bls) and two soil samples were collected from soil boring ST-3 at 12.5 and 20.0 feet bls for laboratory chemical analyses. The soil samples collected from the bore holes were collected from a zone of elevated PID readings and/or the base of the borehole. The samples were placed in clean, laboratory-supplied jars, which were sealed with Teflon®-lined threaded caps. The jars were then labeled and transported to the Braun Intertec laboratory under refrigerated conditions using Braun Intertec chain-of-custody procedures.

The soil samples from ST-3 were analyzed at the Braun Intertec laboratory for the presence and concentrations of benzene, ethyl benzene, toluene and xylenes (BETX), and total petroleum hydrocarbons (TPH). The soil sample from ST-2 was analyzed for the presence and concentrations of TPH, the volatile organic compounds (VOCs) included in the Minnesota Department of Health 466A list of parameters, polychlorinated biphenyls (PCBs) and the eight Resource Conservation and Recovery Act (RCRA) metals.

All of the analyses were performed using United States Environmental Protection Agency or other recognized standard procedures. The laboratory data were reviewed prior to release and all quality control guidelines were met. Specific information regarding the standard operating procedures, detection limits and quality control measures is available upon request.

B.2. Results

B.2.a. Soils Encountered. For information on soils encountered at the *Site* please refer to the Geotechnical Evaluation.

B.2.b. Soil Contamination Observations. Petroleum-like odors were noted in soil samples collected from the soil borings ST-2 and ST-3. As indicated in the Geotechnical Evaluation, petroleum-like odors were also noted during the soil boring operations for ST-4 and ST-6 at a depth of approximately 12.0 feet bls. No petroleum-like odors or organic vapors were detected from soil borings ST-1 or ST-9. Organic vapors were also detected emanating from soil borings ST-2 and ST-3 when screened with the PID. Organic Vapor Field Data Sheets are contained in Appendix C, and a summary of the headspace PID readings is contained in Table 1 below.

Table 1
Organic Vapor Data
(headspace PID readings in ppm)

Sample Depth (feet)	ST-1	ST-2	ST-3	ST-9
1.0-2.0	NS	172	NS	NS
2.5	ND	7.9	ND	ND
5.0	ND	1.9	ND	ND
7.5	ND	ND	ND	ND
10.0	ND	ND	ND	ND
12.5	ND	ND	10.9	ND
15.0	ND	ND	4.8	ND
20.0	NS	ND	5.0	NS

NS = no sample collected from that depth
ND = no organic vapors detected

B.2.c. Laboratory Chemical Analyses. Laboratory chemical analyses of the soil samples detected the presence of petroleum constituents in the soil sample collected from the 1.0-foot to 2.0-foot bls sampling interval of ST-2. The solvent-related VOCs cis-1,2-dichloroethylene, trans-1,2-dichloroethylene and 1,1,2-trichloroethylene were also identified in ST-2. Above-normal metal concentrations and PCBs were also detected at ST-2. However, based on the concentrations detected, the ST-2 soil sample is not characteristically hazardous for PCBs. In addition hazardous concentrations of the RCRA metals are unlikely to leach from the soil sample.

Chemical analyses of the soil samples collected from ST-3 did not detect the presence of BETX or TPH at concentrations greater than or equal to the laboratory detection limits. A summary of the laboratory chemical analyses results is provided below in Table 2. The complete laboratory analyses results are contained in Appendix D.

Table 2
Summary of Soil Chemical Analyses Results
(all results in mg/kg)

Compound	ST-2
	1.0'-2.0'
n-Butylbenzene	25
sec-Butylbenzene	4.4
tert-Butylbenzene	3.3
cis-1,2-Dichloroethylene	160
trans-1,2-Dichloroethylene	9.9
isopropylbenzene	1.3
Naphthalene	1.8
n-Propylbenzene	8.6
Toluene	0.12
1,1,2-Trichlorethylene	66
1,2,4-Trimethylbenzene	10
1,3,5-Trimethylbenzene	6.0
Xylenes	2.82
Total Petroleum Hydrocarbons as fuel oil	3100 *
PCB 1254	49
Arsenic	28
Barium	260
Cadmium	1.0
Chromium	140
Lead	180 *
Mercury	0.03
Selenium	<30
Silver	<1.2

mg/kg = parts per million
NA = not analyzed

C. Conclusions

Based on the results of the ESA, it appears that a petroleum release has occurred at the *Site* in the vicinity of ST-2. However, the results of the chemical analyses indicated that non-petroleum-related solvent compounds and PCBs were also present with the petroleum constituents detected in the soil sample collected from ST-2. Metals were identified at concentrations above the average naturally occurring concentrations in soil (Torey). This suggests that a used chlorinated solvent and/or used oil release may have occurred at this location.

Petroleum-like odors and organic vapors were also detected emanating from soil boring ST-3 during the field screening. However, BETX and TPH were not detected at concentration greater than or equal to the laboratory method detection limit. In addition, as indicated in the Geotechnical Evaluation, petroleum-like odors were also noted during the soil boring operations for ST-4 and ST-6.

Additional soil borings and an evaluation of the *Site* groundwater would be necessary to further evaluate the extent of contamination at the *Site*. Based on the results of that additional *Site* evaluation, the Minnesota Pollution Control Agency (MPCA) may require remediation of contaminated soils and groundwater, if present, at the *Site*.

D. Release Notification

On May 5, 1995, Braun Intertec notified Tillitt & Associates, Inc. of an apparent release at the *Site*. Tillitt & Associates, Inc. authorized Braun Intertec to notify Boker's Inc. and the MPCA of the apparent release. Those parties were notified on May 5, 1995. The MPCA assigned the *Site* Leaksite ID Number LEAK00008345.

E. Assessment Limitations

The analyses and conclusions submitted in this report are based on our field observations and the results of laboratory chemical analysis of soil samples collected from the soil borings completed for this project. Neither the groundwater flow direction nor the quality of the groundwater at the *Site* were evaluated, as those services were beyond the Scope of Services for this project.

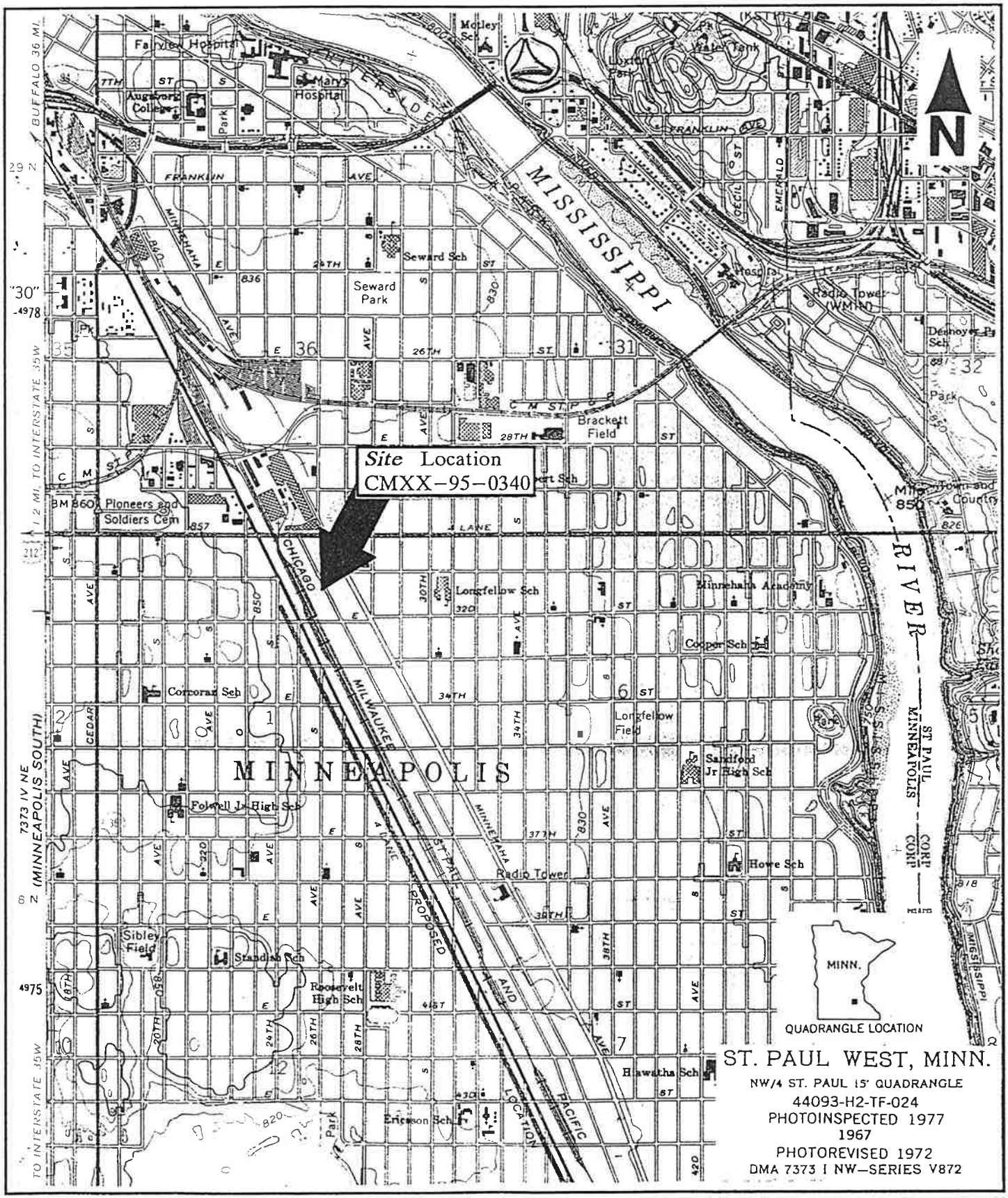
In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession practicing in the same location. No other warranty is made or intended.

F. References

Torey, "Sludge Disposal by Landspreading Techniques," Pollution Technology Review No. 53, Torrey.

Appendix A

Site Location Map



ST. PAUL WEST, MINN.

NW/4 ST. PAUL 15' QUADRANGLE

44093-H2-TF-024

PHOTOINSPECTED 1977

1967

PHOTOREVISED 1972

DMA 7373 I NW—SERIES V872

BRAUN INTERTEC

Site **Location Map**

Environmental Soils Assessment

Proposed Addition to the Boker's, Inc. Building

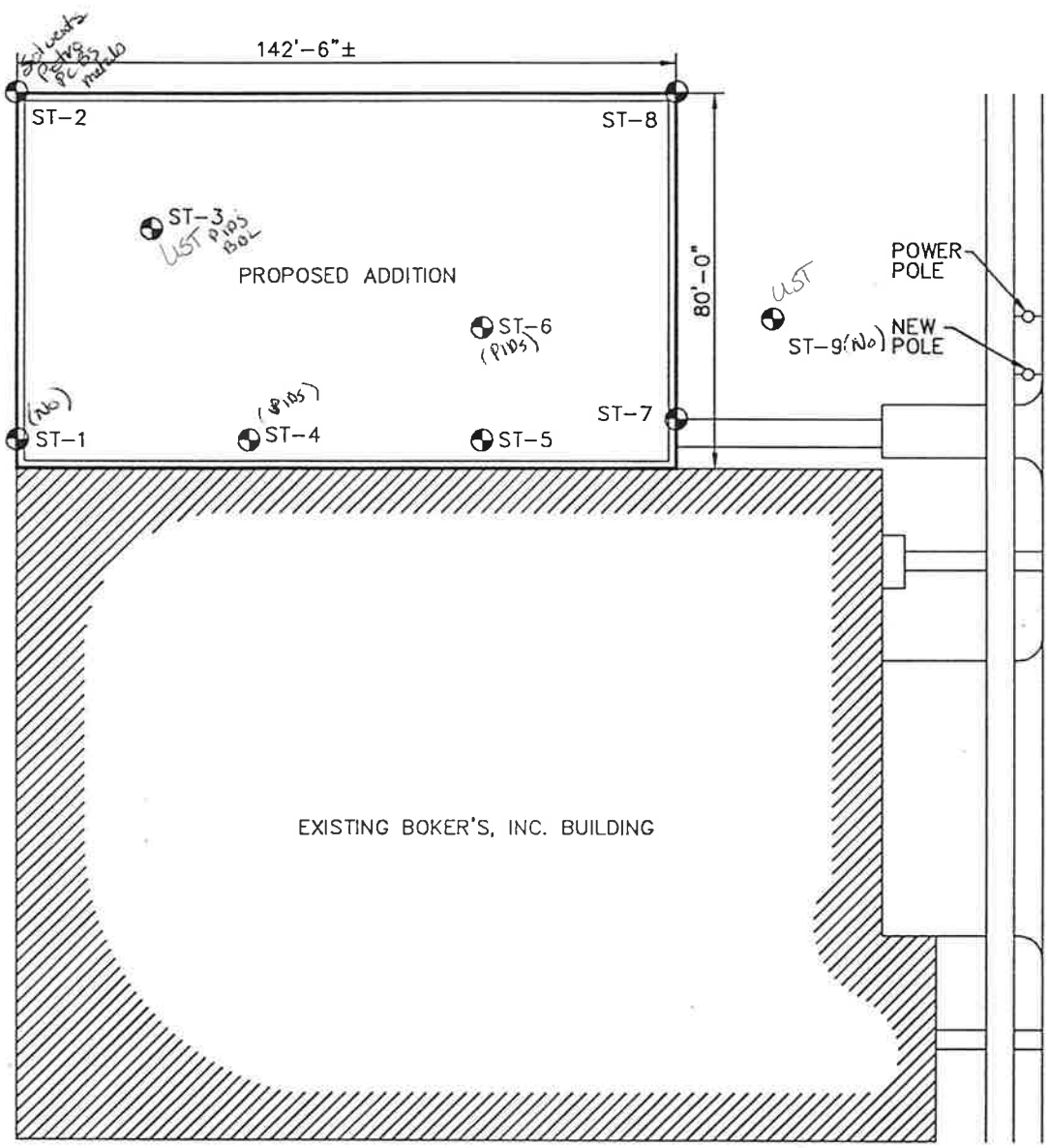
3104 Snelling Avenue

Minneapolis, MN

INT	DATE	SHEET
DRAWN BY: KLB	8-29-95	
APP'D BY: TJM		OF
JOB NO. CMXX-95-0340		
DWG. NO. 1	FIGURE NO.	
SCALE 1:24,000	1	

Appendix B

Soil Boring Locations Map



● – DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

N

20' 0 40'

SCALE 1"=40'

BRAUN INTERTEC

SOIL BORING LOCATION SKETCH
PROPOSED BOKER'S ADDITION
3104 SNELLING AVENUE
MINNEAPOLIS, MINNESOTA 55406

INT	REVISION	SHEET
DRAWN BY: JAG	5-9-95	1
APP'D BY: TJM	6-20-95	OF
JOB No. CMXX-95-0340		1
DWG. No. AB5268		FIGURE NO.
SCALE 1"=40'		1

Appendix C

Organic Vapor Field Data Sheets

Organic Vapor Field Data Sheet

Boring Identification: ST-1 *Project No.:* CMXX-95-0340 *Date:* 5/4/95

Weather Conditions: Sunny, 70°

Field Personnel: Steve Braun

Auger Steam Cleaned: *Yes* _____ *No* _____

Sampler Cleaned Between Samples: *Yes* X *No* _____

Method: Alconox & water rinse

Detector: *FID:* _____ *PID:* *10.0eV* _____
10.2eV _____
10.6eV X
11.7eV _____
11.8eV _____

Calibration: *Gas:* Isobutylene
Date: 5/4/95

Depth (feet)	Auger (ppm)	Split Spoon (ppm)	Headspace (ppm)	Notes/Geology
2.5			0	
5.0			0	
7.5			0	
10.0			0	
12.5			0	
15.0			0	
20.0			0	

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Organic Vapor Field Data Sheet

Boring Identification: ST-2 *Project No.:* CMXX-95-0340 *Date:* 5/4/95

Weather Conditions: Sunny, 70°

Field Personnel: Steve Braun

Auger Steam Cleaned: *Yes* _____ *No* _____

Sampler Cleaned Between Samples: *Yes* X *No* _____

Method: Alconox & water rinse

Detector: *FID:* _____ *PID:* *10.0eV* _____
10.2eV _____
10.6eV X
11.7eV _____
11.8eV _____

Calibration: *Gas:* Isobutylene
Date: 5/4/95

Depth (feet)	Auger (ppm)	Split Spoon (ppm)	Headspace (ppm)	Notes/Geology
0 - 2			172	
2.5			7.9	
5.0			1.9	
7.5			0	
10.0			0	
12.5			0	
15.0			0	
20.0			0	

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Organic Vapor Field Data Sheet

Boring Identification: ST-3 *Project No.:* CMXX-95-0340 *Date:* 5/4/95

Weather Conditions: Sunny, 70°

Field Personnel: Steve Braun

Auger Steam Cleaned: *Yes* _____ *No* _____

Sampler Cleaned Between Samples: *Yes* X *No* _____

Method: Alconox & water rinse

Detector: *FID:* _____ *PID:* *10.0eV* _____
10.2eV _____
10.6eV X
11.7eV _____
11.8eV _____

Calibration: *Gas:* Isobutylene
Date: 5/4/95

Depth (feet)	Auger (ppm)	Split Spoon (ppm)	Headspace (ppm)	Notes/Geology
2.5			0	
5.0			0	
7.5			0	
10.0			0	
12.5			10.9	
15.0			4.8	
20.0			5.0	

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Organic Vapor Field Data Sheet

Boring Identification: ST-9 *Project No.:* CMXX-95-0340 *Date:* 5/4/95

Weather Conditions: Sunny, 70°

Field Personnel: Steve Braun

Auger Steam Cleaned: *Yes* _____ *No* _____

Sampler Cleaned Between Samples: *Yes* X *No* _____

Method: Alconox & water rinse

Detector: *FID:* _____ *PID:* *10.0eV* _____
10.2eV _____
10.6eV X
11.7eV _____
11.8eV _____

Calibration: *Gas:* Isobutylene
Date: 5/4/95

Depth (feet)	Auger (ppm)	Split Spoon (ppm)	Headspace (ppm)	Notes/Geology
2.5			0	
5.0			0	
7.5			0	
10.0			0	
12.5			0	
15.0			0	
20.0			0	

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Appendix D

Soil Chemistry Report

BRAUN[SM]
INTERTEC

Braun Intertec Corporation
6875 Washington Avenue South
P.O. Box 39108
Minneapolis, Minnesota 55439-0108
612-941-5600 Fax: 942-4844

Engineers and Scientists Serving the Built and Natural Environments®

May 17, 1995

Project CMXX-95-0340
Report 95-1225

Mr. Tom Maartens
Braun Intertec Corporation

Re: Tillet & Assoc.
Boker's, Inc.

Braun Intertec Corporation received your analytical request on May 4, 1995. Analytical results are summarized on the following laboratory report.

Routine Braun Intertec Corporation QA/QC was followed. Quality control data have been reviewed. No anomalies were encountered in the analysis of these samples.

We appreciate the opportunity to meet your analytical needs. If you have any questions or need additional information, please call Thomas Wagner at 612-942-4932.

Sincerely,

Thomas P. Wagner
Project Manager

Dirk W. Hoogenboom
Quality Assurance Coordinator

Attachments
Chain of Custody
Laboratory Results

Client:	Tillet & Assoc.	**Laboratory:**	Braun Intertec Corporation	**Date Sampled:**	05/04/95
Log-in:	95-1225	**Lab Contact/Phone:**	T. Wagner/612-942-4932	**Date Received:**	05/04/95
Project Number:	CMXX-95-0340	**Sampler:**	Braun Intertec	**Date Reported:**	05/17/95
Matrix:	Solid	**% Moisture:**	Not Applicable		
Lab Sample ID:	95-1225-01	**MDL:**	Method Detection Limit		
		RL:	Reporting Limit		

Client Sample ID/Description: ST-3 12.5'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Petroleum Hydrocarbons									
Total Hydrocarbons as Fuel Oil	SW-846 5030	05/13/95	SW-846 8015	05/13/95	1	10	10	<10	mg/kg
Total Hydrocarbons as Gasoline	SW-846 5030	05/13/95	SW-846 8015	05/13/95	1	10	10	<10	mg/kg

(Report continued on next page)

Client:	Tillet & Assoc.	**Laboratory:**	Braun Intertec Corporation	**Date Sampled:**	05/04/95
Log-in:	95-1225	**Lab Contact/Phone:**	T. Wagner/612-942-4932	**Date Received:**	05/04/95
Project Number:	CMXX-95-0340	**Sampler:**	Braun Intertec	**Date Reported:**	05/17/95
Matrix:	Solid	**% Moisture:**	Not Applicable		
Lab Sample ID:	95-1225-02	**MDL:**	Method Detection Limit		
		RL:	Reporting Limit		

Client Sample ID/Description: ST-3 20.0'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Petroleum Hydrocarbons									
Total Hydrocarbons as Fuel Oil	SW-846 5030	05/13/95	SW-846 8015	05/13/95	1	10	10	<10	mg/kg
Total Hydrocarbons as Gasoline	SW-846 5030	05/13/95	SW-846 8015	05/13/95	1	10	10	<10	mg/kg

(Report continued on next page)

Client: Tillet & Assoc.
Log-in: 95-1225
Project Number: CMXX-95-0340
Matrix: Solid
Lab Sample ID: 95-1225-03

Laboratory: Braun Intertec Corporation
Lab Contact/Phone: T. Wagner/612-942-4932
Sampler: Braun Intertec
% Moisture: Not Applicable
MDL: Method Detection Limit
RL: Reporting Limit

Date Sampled: 05/04/95
Date Received: 05/04/95
Date Reported: 05/17/95

Client Sample ID/Description: ST-2 1'-2'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Volatile Organic Compounds									
Acetone	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	5.0	5.0	<5.0	mg/kg
Allyl Chloride	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Benzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.03	0.03	<0.03	mg/kg
Bromobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Bromochloromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Bromodichloromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Bromoform	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Bromomethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
n-Butylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	25	mg/kg
sec-Butylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	4.4	mg/kg
tert-Butylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	3.3	mg/kg
Carbon Tetrachloride	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Chlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Chlorodibromomethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Chloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Chloroform	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Chloromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.5	0.5	<0.5	mg/kg
2-Chlorotoluene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
4-Chlorotoluene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2-Dibromo-3-Chloropropane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	1.0	1.0	<1.0	mg/kg
1,2-Dibromoethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Dibromomethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.5	0.5	<0.5	mg/kg
1,2-Dichlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,3-Dichlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,4-Dichlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1-Dichloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2-Dichloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1-Dichloroethylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
cis-1,2-Dichloroethylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.02	0.02	160	mg/kg
trans-1,2-Dichloroethylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.02	0.02	9.9	mg/kg
Dichlorodifluoromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Dichlorofluoromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2-Dichloropropane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,3-Dichloropropane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
2,2-Dichloropropane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1-Dichloro-1-propylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
cis-1,3-Dichloro-1-propylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
trans-1,3-Dichloro-1-propylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Ethyl Benzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.03	0.03	<0.03	mg/kg
Ethyl Ether	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Hexachlorobutadiene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg

(Report continued on next page)

Client: Tillet & Assoc.
Log-in: 95-1225
Project Number: CMXX-95-0340
Matrix: Solid
Lab Sample ID: 95-1225-03

Laboratory: Braun Intertec Corporation
Lab Contact/Phone: T. Wagner/612-942-4932
Sampler: Braun Intertec
% Moisture: Not Applicable
MDL: Method Detection Limit
RL: Reporting Limit

Date Sampled: 05/04/95
Date Received: 05/04/95
Date Reported: 05/17/95

Client Sample ID/Description: ST-2 1'-2'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Isopropylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	1.3	mg/kg
Isopropyltoluene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Methyl Ethyl Ketone	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.5	0.5	<0.5	mg/kg
Methyl Isobutyl Ketone	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Methyl Tertiary Butyl Ether	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Methylene Chloride	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	1.0	1.0	<1.0	mg/kg
Naphthalene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	1.8	mg/kg
n-Propylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	8.6	mg/kg
Styrene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1,1,2-Tetrachloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1,2,2-Tetrachloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Tetrachloroethylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Tetrahydrofuran	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.5	0.5	<0.5	mg/kg
Toluene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.03	0.03	0.12	mg/kg
1,2,3-Trichlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2,4-Trichlorobenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1,1-Trichloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1,2-Trichloroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,1,2-Trichloroethylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.05	0.05	66	mg/kg
Trichlorofluoromethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2,3-Trichloropropane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
Trichlorotrifluoroethane	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
1,2,4-Trimethylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	10	mg/kg
1,3,5-Trimethylbenzene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	6.0	mg/kg
Vinyl Chloride	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.1	0.1	<0.1	mg/kg
m,p-Xylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.03	0.03	0.82	mg/kg
o-Xylene	SW-846 5030	05/15/95	MDH 466A	05/15/95	1	0.03	0.03	2.0	mg/kg

(End of Report)

BRAUN[SM] INTERTEC

Chain Of Custody - ECS

Log-In Report # 1-15

Page _____ of _____

Rush # _____

Exception Rate _____

Site Identification	Client Identification
BOKER'S INC.	TILLET & ASSOC.

a = soil c = solid e = lube or filter
b = water d = liquid f = sludge
o = other a

Project Manager TOM MARTENS
Sampled By: STEVE BRAUN
Temperature Upon Receipt ☐ Received on Ice °C ___
Condition Upon Receipt ☐ Good ☐ Other

Evidence Tape Intact ☐ Yes ☐ No ☐ NA
WI LUST Project ☐ Yes ☐ No
Are samples in compliance with soil movement regulations ☐ Yes ☐ No ☐ NA

Project #: CMXX95-0340 **Task #:**

Sample No. (Lab Use Only)	Sample Identification	Collection Date	Collection Time	Sample Matrix Code	Bottle type and number: VOA 40ml (60 ml)	Metals (Filtered)	Metals (Unfiltered)	General	Nutrient	IL HCl	IL Generals	Tubes/OVM	Other	Analysis/Remarks (OK'd JAC)
95-1225-01	ST-3 12.5'	5/4/95		a	1									[redacted] TMH THC
02	ST-3 20.0'	↓		a	1									THC
03	ST-2 1'-2'	↓		a	1									VOC'S

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time	Received By:
Steve Braun	5/4/95	1500	Tom Martens	Tom Martens	/ /		Steve Braun
Steve Braun	5/4/95	1600	Received for Laboratory By: Cavin Thiny	Date 5/4/95	Time 1615	Comments:	

BRAUN SM
INTERTEC

Braun Intertec Corporation
6875 Washington Avenue South
P.O. Box 39108
Minneapolis, Minnesota 55439-0108
612-941-5600 Fax: 942-4844

Engineers and Scientists Serving the Built and Natural Environments®

June 8, 1995

Project CMXX-95-0340
Report 95-1389

Mr. Tom Maartens
Braun Intertec Corporation

Re: Tillet & Assoc.
Boker's, Inc.

Braun Intertec Corporation received your analytical request on May 4, 1995. Analytical results are summarized on the following laboratory report.

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

We appreciate the opportunity to meet your analytical needs. If you have any questions or need additional information, please call Thomas Wagner at 612-942-4932.

Sincerely,

Thomas P. Wagner
Project Manager

Dirk W. Hoogenboom
Quality Assurance Coordinator

Attachments
Chain of Custody
Laboratory Results

Client:	Tillet & Assoc.	**Laboratory:**	Braun Intertec Corporation	**Date Sampled:**	05/04/95
Log-in:	95-1389	**Lab Contact/Phone:**	T. Wagner/612-942-4932	**Date Received:**	05/04/95
Project Number:	CMXX-95-0340	**Sampler:**	Braun Intertec	**Date Reported:**	06/08/95
Matrix:	Solid	**% Moisture:**	Not Applicable		
Lab Sample ID:	95-1389-01	**MDL:**	Method Detection Limit		
		RL:	Reporting Limit		

Client Sample ID/Description: ST-3 12.5'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result	
Volatile Organic Compounds									
Benzene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05	mg/kg
Ethyl Benzene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05	mg/kg
Toluene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05	mg/kg
m,p-Xylene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05	mg/kg
o-Xylene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05	mg/kg

(Report continued on next page)

Client:	Tillet & Assoc.	**Laboratory:**	Braun Intertec Corporation	**Date Sampled:**	05/04/95
Log-in:	95-1389	**Lab Contact/Phone:**	T. Wagner/612-942-4932	**Date Received:**	05/04/95
Project Number:	CMXX-95-0340	**Sampler:**	Braun Intertec	**Date Reported:**	06/08/95
Matrix:	Solid	**% Moisture:**	Not Applicable		
Lab Sample ID:	95-1389-02	**MDL:**	Method Detection Limit		
		RL:	Reporting Limit		

Client Sample ID/Description: ST-3 20.0'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result
Volatile Organic Compounds								
Benzene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05 mg/kg
Ethyl Benzene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05 mg/kg
Toluene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05 mg/kg
m,p-Xylene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05 mg/kg
o-Xylene	SW-846 5030	05/13/95	SW-846 8020	05/13/95	1	0.05	0.05	<0.05 mg/kg

(Report continued on next page)

Client: Tillet & Assoc.
Log-in: 95-1389
Project Number: CMXX-95-0340
Matrix: Solid
Lab Sample ID: 95-1389-03

Laboratory: Braun Intertec Corporation
Lab Contact/Phone: T. Wagner/612-942-4932
Sampler: Braun Intertec
% Moisture: Not Applicable
MDL: Method Detection Limit
RL: Reporting Limit

Date Sampled: 05/04/95
Date Received: 05/04/95
Date Reported: 06/08/95

Client Sample ID/Description: ST-2 1'-2'

Compound	Extract Method	Extract Date	Analysis Method	Analysis Date	Dilution Factor	MDL	RL	Sample Result		
Petroleum Hydrocarbons										
Total Hydrocarbons as Fuel Oil	SW-846 5030	05/22/95	SW-846 8015	05/22/95	1	10	10	3100	mg/kg	fb
Polychlorinated Biphenyls (PCBs)										
PCB 1016	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1221	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1232	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1242	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1248	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1254	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	49	mg/kg	
PCB 1260	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
PCB 1268	SW-846 3540	05/19/95	SW-846 8081	06/02/95	1	1.0	1.0	<1.0	mg/kg	fm
Metals										
Arsenic, Total	-	-	SW-846 6010	05/26/95	10	2	20	28	mg/kg	ga
Barium, Total	-	-	SW-846 6010	05/26/95	10	1.0	10	260	mg/kg	ga
Cadmium, Total	-	-	SW-846 7130	05/23/95	1	0.60	0.60	1.0	mg/kg	
Chromium, Total	-	-	SW-846 6010	05/26/95	10	0.50	5.0	140	mg/kg	ga
Lead, Total	-	-	SW-846 6010	05/26/95	10	1.5	15	180	mg/kg	ga
Mercury, Total	-	-	SW-846 7471	06/02/95	1	0.01	0.01	0.03	mg/kg	
Selenium, Total	-	-	SW-846 6010	05/26/95	10	3.0	30	<30	mg/kg	ga
Silver, Total	-	-	SW-846 7760	05/24/95	1	1.2	1.2	<1.2	mg/kg	

fb The sample chromatogram was compared to both gasoline and fuel oil standard chromatograms. It more closely matches the fuel oil chromatogram.
fm PCB's were calculated as PCB 1254.
ga The reporting limit (RL) was raised. A dilution of the sample was necessary due to matrix interferences.

(End of Report)

BRAUN[SM] INTERTEC

Chain Of Custody - ECS

Relog of 95-1225

received 05/04/95

Log-in Report # 95-1389

Page 1 of 1

Rush #

Exception Rate

Site Identification	Client Identification
Baker's Inc.	Tillet & Assoc.

a = soil c = solid e = lube or filter
b = water d = liquid f = sludge
o = other

Project Manager Tom Maartens
Sampled By: Steve Braun
Temperature Upon Receipt ☐ Received on Ice °C
Condition Upon Receipt ☐ Good ☐ Other

Evidence Tape Intact ☐ Yes ☐ No ☐ NA
WI LUST Project ☐ Yes ☐ No
Are samples in compliance with soil movement regulations ☐ Yes ☐ No ☐ NA

Project #: CMX+ 95 0340 **Task #:**

Sample No. (Lab Use Only)	Sample Identification	Collection Date	Collection Time	Sample Matrix Code	Bottle type and number: VOA 40ml. 60 ml.	Metals (Filtered)	Metals (Unfiltered)	General	Nutrient	IL HCl	IL Generals	Tubes/OVM	Other	Analysis/Remarks
95-1389 -01	ST-3 12.5'	5/4/95		9	1									BetX (Pull from THC 95-1225-01)
-02	ST-3 20.0'	↓		9	1									BetX (Pull from THC 95-1225-02)
-03	ST-2 1'-2'	↓		9	1									TPH, PCB's, 8rcra

Relinquished By;	Date	Time	Received By:	Relinquished By:	Date	Time	Received By:
Relinquished By:	Date	Time	Received for Laboratory By: Amber E Ebert	Date 5/8 1995	Time 15:42	Comments: CofC by TPL	

Braun Intertec Corporation, Inc. 6875 Washington Avenue, Shipping and Receiving, Minneapolis, MN 55439 (25/04/95 ae)

Form No. Claim 1/95

ARCADIS GERAGHTY & MILLER

ARCADIS Geraghty & Miller, Inc.
105 Fifth Avenue South
Suite 350
Minneapolis
Minnesota 55401
Tel 612 339 9434
Fax 612 336 4538

Ms. Stacey Hendry-VanPatten
Minnesota Pollution Control Agency
520 North Lafayette Road
St. Paul, MN 55155-4194

ENVIRONMENTAL

Subject:
Work Plan for Limited Site Investigation
Boker's Inc., 3104 Snelling Avenue, Minneapolis, Minnesota
MPCA Leak No. 8345
ARCADIS Geraghty & Miller File No. MN000400.0001

Minneapolis, Minnesota,
6 May 1999

Contact:
Scott Lapham

Extension:
612 373 0221

Dear Ms. Hendry-VanPatten:

ARCADIS Geraghty & Miller, Inc. has prepared this work plan for a Limited Site Investigation (LSI) at the Boker's facility located in Minneapolis, Minnesota (the site). A suspected release was reported to the Minnesota Pollution Control Agency (MPCA) on September 8, 1998 during excavation and construction for a new building at the site. In a letter dated September 21, 1998, the MPCA reopened Leak No. 8345 for this site, and requested that the extent and magnitude of the reported release be defined. A copy of the MPCA letter is located in Appendix A.

This work plan is for conducting an LSI. The limited investigation, as outlined in the MPCA guidance, will entail drilling and sampling soil and groundwater at three borings, laboratory analyses of soil and groundwater samples from these borings, conducting a groundwater and vapor receptor survey, preparing a report, and project management as part of the LSI.

Background

A petroleum release was initially detected at the site in May 1995 during an Environmental Soils Assessment (ESA) for the new building. During the ESA and the remedial investigation also conducted in 1995, low levels of hydrocarbons were detected in the subsurface (Tables 1 and 2). Following the ESA and the remedial investigation, Laurie Kania of the MPCA closed the file for Leak No. 8345 as the site was considered low risk and no further action was deemed necessary.

Scope of Work

This scope of work was prepared to define the extent and magnitude of petroleum hydrocarbons as requested by the MPCA on September 21, 1998. All site activities in this proposal will be conducted in accordance with MPCA guidelines, and in

Our ref.:
g:mn0400/001//sh040799.doc

accordance with the Site Health and Safety Plan and OSHA regulations. The following tasks are included in the proposed scope of work:

Task 1. Soil/Groundwater Sampling and Analysis
Task 2. Receptor Survey
Task 3. Data Analysis
Task 4. Report Preparation

A description of these tasks and a summary of the data collected as part of each task are presented below.

Task 1. Soil/Groundwater Sampling and Analysis

The reported geology in the site vicinity consists of sand, clay and gravel deposits from ground surface to the water table. The reported and observed depth to water in the site vicinity is 20 to 40 feet below ground surface (bgs). Three soil borings will be drilled at the site to determine the presence and magnitude of hydrocarbons in soil and the extent to which groundwater is or may be impacted.

Soil Boring Location and Sample Collection

The proposed soil boring/groundwater sampling locations are illustrated on Figure 1. The first soil boring (TB-1) will be drilled on the north side of the former tank basin under the new building addition to a depth of approximately 30 feet bgs. The second and third soil borings (TB-2 and TB-3) will be drilled east and south of the existing and new building to a depth of approximately 30 feet bgs. Borings are not proposed for the western site boundary as the railroad right of way is flush with the west edge of the plant and there are buildings immediately to the west on the other side of the tracks.

Soil samples will be collected continuously from ground surface to 30 feet bgs at each boring location. Soil samples will be classified in the field using the Unified Soil Classification System. Sand, gravel and till deposits encountered from ground surface to the end-of-boring depth at each boring location will be logged for specific composition.

Soil samples will be screened in the field using photoionization detector (PID). The PID readings will be continuously monitored and recorded. A headspace reading of 10 parts per million (ppm) is considered an action limit for fuel oil, but this level should be considered only as a reference guideline and not a removal number.

The three soil samples will be analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), gasoline range organics (GRO), and diesel range organics (DRO) using the Wisconsin modified method in accordance with MPCA guidelines.

Groundwater

Groundwater will also be sampled at the same time as borings are advanced using the Geoprobe for groundwater sample collection. Groundwater samples will be collected at or near the boring termination depth of each boring through use of the Geoprobe sampler. The groundwater sampling tools will be lowered down the center of the rods following completion of soil sampling. Groundwater will be extracted by low flow pumping at the Geoprobe rig. Groundwater samples will be analyzed under the Minnesota Department of Health method 465 E for volatile organic compounds (VOCs) and DRO.

Task 2. Receptor Survey

A comprehensive survey will be conducted of potential groundwater and vapor receptors within specified distances of a reported hydrocarbon release. The groundwater receptor survey consists of identifying any drinking water wells within a one-half mile radius of the site, and identifying any residences or businesses not currently using the municipal water supply within 500-foot radius of the site.

The vapor receptor survey consists of identifying any underground utilities near the site which contain open subgrade spaces such as open lines, manholes, or vaults. The potential for hydrocarbon vapors to accumulate in these utilities will be evaluated.

Task 3. Data Analysis

The data collected as part of the LSI will be checked for quality and correctness, and will be compiled into the LSI report. These data include background site information, boring logs, laboratory analytical results, and receptor survey data. Data analysis will also include the tabulation of data and preparation of figures.

Task 4. Report Preparation

Report preparation will consist of one LSI report in accordance with MPCA guidelines. The LSI report will present all of the data collected as part of Tasks 1 and 2 above using MPCA Fact Sheet #3.24 "Remedial Investigation Report Form."

Schedule

ARCADIS Geraghty & Miller plans to commence with the drilling and sampling in May, 1999. The LSI report should be complete by August 1999.

If you have any questions regarding the LSI work plan, please do not hesitate to call me at (612) 339-9434.

Sincerely,

ARCADIS Geraghty & Miller, Inc.

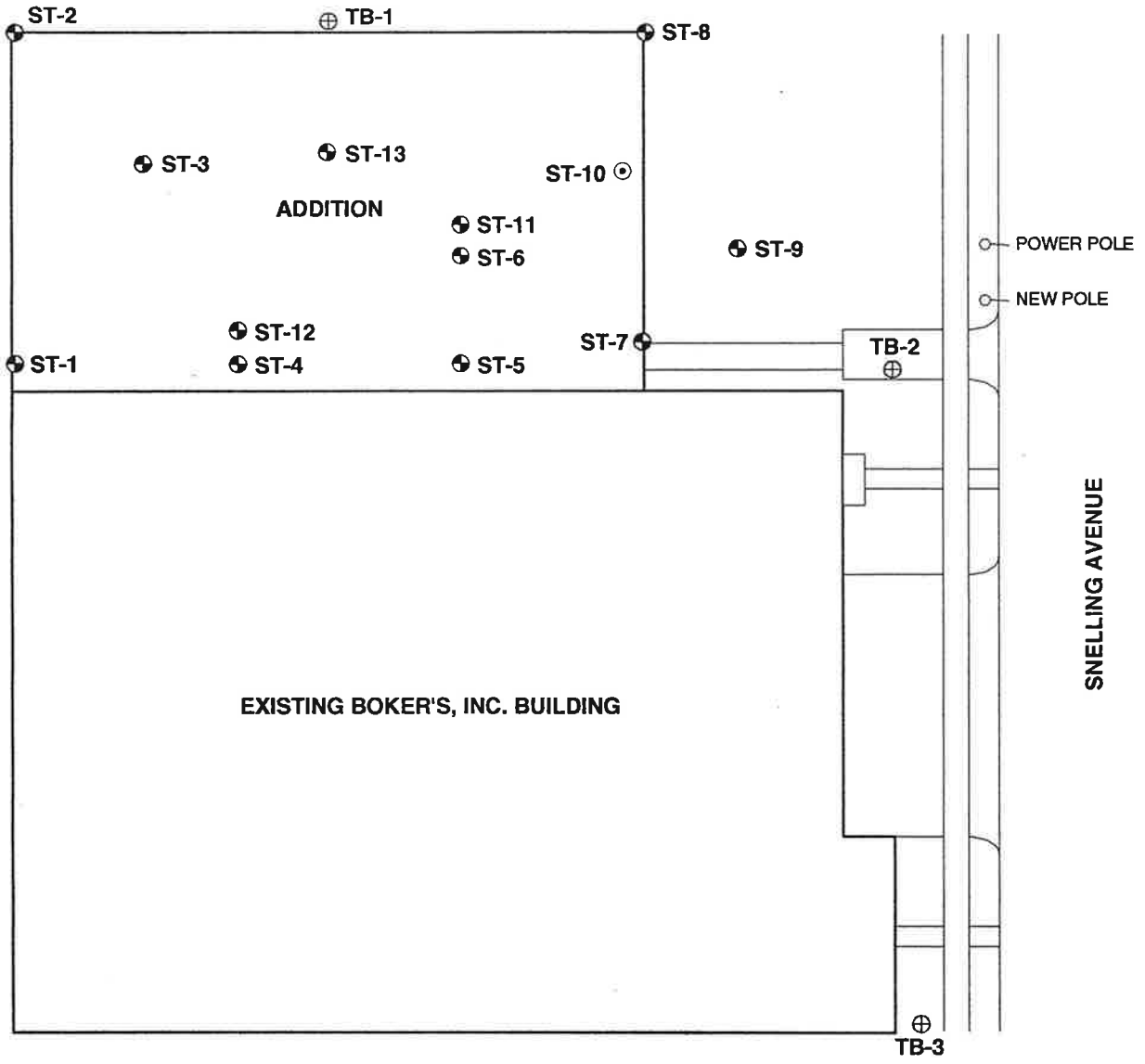
Scott M. Lapham

Scott M. Lapham
Associate

Attachments

cc: Mr. Robert Fisher - Boker's, Inc., Minneapolis, MN w/ attachements

DRAFTER: ELS | APPROVED: DLR | CHECKED: DLR | DRAWING: PROP_GEO.AI | FILE NO.: MN0400 | PN: GRAPH_OH\MINNEAPOLIS | DWG DATE: 05MAY99



LEGEND

ST-1 ◓ SOIL BORING LOCATION

ST-10 ⊙ HYDROPUNCH WATER SAMPLE/SOIL BORING LOCATION

TB-1 ⊕ PROPOSED GEOPROBE BORING LOCATION

SOURCE: Braun Intertec, 1996.

ARCADIS GERAGHTY & MILLER

PROPOSED GEOPROBE BORING LOCATIONS

BOKER'S, INC.
MINNEAPOLIS, MINNESOTA

FIGURE 1

Minnesota Pollution Control Agency

September 21, 1998

Mr. Robert Fisher
Bokers Incorporated
3104 Snelling Avenue
Minneapolis, Minnesota 55406

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Bokers Incorporated, 3104 Snelling Avenue, Minneapolis
Site ID#: LEAK00008345

Dear Mr. Fisher:

Notice of Release

The Minnesota Pollution Control Agency (MPCA) has been informed that a release of petroleum has occurred from storage tank facilities which you own and/or operate. We appreciate your timely notification so this site can be handled in an efficient manner.

Legal Obligations

Federal and state laws require that persons legally responsible for storage tank releases notify the MPCA of the release, investigate the release and, if necessary, clean up the release. A person is considered legally responsible for a tank release if the person owned or operated the tank either during or after the release, unless specifically exempted under the law. If you believe that you are not legally responsible for this storage tank release, please contact the project manager listed below.

If you are not legally responsible for the release, but hold legal or equitable title to the property where the release occurred, you may volunteer to take corrective action. Responsible persons and volunteers who take corrective action may be eligible for reimbursement for a major portion of the costs of corrective action. The legislature has established the Petroleum Tank Release Cleanup Account to reimburse responsible persons and volunteers. The account is administered by the Petro Board which is part of the Minnesota Department of Commerce. Final decisions regarding the amount of reimbursement are made by the Petro Board. All questions about eligibility and reimbursement should be directed to the Petrofund staff at 651/297-1119 or 651/297-4203.

Request to Take Corrective Action

The MPCA staff requests that you take steps to investigate and, if necessary, clean up the release in accordance with the enclosed MPCA fact sheets. The site investigation must fully define the extent and magnitude of the soil and/or ground water contamination caused by the release. A report (excavation report and/or remedial investigation/corrective action design (RI/CAD) which details the results of the investigation or concludes that excavation was sufficient to clean up the release must be submitted to this office within 10 months of the date of this letter. Please refer to MPCA fact sheets for information pertaining to the amount of work needed at the petroleum release site(s).

Sites with free product (free-floating petroleum), drinking water supply impacts, surface water impacts, indoor vapor impacts, fire or explosion hazards, or ground water impacts which pose a significant threat to public health or the environment, are considered high priority for staff review. If one or more of these situations apply to your site, an RI/CAD report must be submitted within 90 days. In addition, if you know or discover that there is free-product from a well, excavation, or borehole, you must notify the MPCA within 24 hours and IMMEDIATELY begin interim free product recovery.

If you have not already done so, the MPCA recommends that you hire a qualified consulting firm registered with the Petrofund staff that has experience in conducting petroleum release site investigations and in proposing and implementing appropriate corrective actions. A list of registered contractors and consultants is available from the Petrofund staff. The MPCA reserves the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled. Please note that, under Minn. R. 2890 (Supp. 1997), you must solicit a minimum of two competitive proposals on a form prescribed by the Petro Board to ensure that the consulting costs are reasonable. Questions about bidding requirements should be directed to Petrofund staff.

Required Response

MPCA staff requests a response to this letter within 30 days. Please tell us whether you intend to proceed with the requested work. If you do not respond within this time frame, the MPCA staff will assume that you do not intend to comply, in which case the MPCA Commissioner may order you to take corrective action. Failure to cooperate with the MPCA in a timely manner may result in reduced reimbursement from the Petro Board. See Minn. R. 2890 (Supp. 1997). The enclosed fact sheets will provide you with the information necessary to complete a successful investigation and cleanup. If you have any questions concerning this letter or need additional information, please contact me at 651/297-8577. Please reference the above LEAK # in all correspondence. If you are calling long distance, you may reach the MPCA St. Paul office by calling 1-800/657-3864.

Sincerely,

Stacey Hendry-VanPatten
Project Manager
Site Remediation
Metro District

SHV:kh

Enclosures

cc: Dave Ziemer, Minneapolis Pollution Control Division
Greg Lie, Hennepin County Solid Waste Officer
Scott Laphom, Arcidis Gerhaty and Miller, Minneapolis

Table 1. Summary of Compounds Detected in Soil during ESA and RI
Boker's, Inc., 3104 Snelling Avenue, Minneapolis, Minnesota

Boring ID	Depth (feet)	Date	Benzene (mg/kg)	n-Butyl Benzene (mg/kg)	sec-Butyl Benzene (mg/kg)	tert-Butyl Benzene (mg/kg)	cis-1,2 Dichloroethene (mg/kg)	trans-1,2 Dichloroethene (mg/kg)	Ethyl Benzene (mg/kg)	Isopropyl Benzene (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Propyl Benzene (mg/kg)	Toluene (mg/kg)	1,1,2 Trichloroethene (mg/kg)	1,2,4 Trimethylbenzene (mg/kg)	1,3,5 Trimethylbenzene (mg/kg)	Xylenes (mg/kg)	TPH as Gas/GRO (mg/kg)	TPH as Fuel Oil/DRO (mg/kg)	PCB 1254 (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
ST-2	1-2	04-May-95	<0.03	25	4.4	3.3	160	9.9	<0.03	1.3	---	1.8	8.6	0.12	66	10	6	2.82	---	3,100	49	28	260	1	140	180	0.03
ST-3	12.5	04-May-95	<0.05	---	---	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	<0.05	<10	<10	---	---	---	---	---	---	---
ST-3	20	04-May-95	<0.05	---	---	---	---	---	<0.05	---	---	---	---	<0.05	---	---	---	<0.05	<10	<10	---	---	---	---	---	---	---
ST-10	12.5	26-Sep-95	<0.05	---	---	---	---	---	<0.05	---	<0.1	---	---	<0.05	---	---	---	<0.05	<10	<10	---	---	---	---	---	<2.5	---
ST-11	2.5	26-Sep-95	<0.05	---	---	---	---	---	0.19	---	<0.1	---	---	<0.05	---	---	---	0.09	<10	340	---	---	---	---	---	15	---
ST-11	10	26-Sep-95	<0.05	---	---	---	---	---	<0.05	---	<0.1	---	---	<0.05	---	---	---	<0.05	<10	<10	---	---	---	---	---	11	---
ST-12	10	26-Sep-95	<0.05	---	---	---	---	---	<0.05	---	<0.1	---	---	<0.05	---	---	---	0.05	<10	1,200	---	---	---	---	---	3.7	---
ST-12	22.5	26-Sep-95	<0.05	---	---	---	---	---	<0.05	---	<0.1	---	---	<0.05	---	---	---	<0.05	<10	<10	---	---	---	---	---	7.5	---
ST-13	10	26-Sep-95	<0.05	---	---	---	---	---	<0.05	---	<0.1	---	---	<0.05	---	---	---	<0.05	<10	16	---	---	---	---	---	4.2	---

Table 2. Summary of Compounds Detected in Groundwater during RI
Boker's, Inc., 3104 Snelling Avenue, Minneapolis, Minnesota

Boring ID	Depth (feet)	Date	Benzene (ug/L)	n-Butyl Benzene (ug/L)	sec-Butyl Benzene (ug/L)	tert-Butyl Benzene (ug/L)	cis-1,2 Dichloroethene (ug/L)	trans-1,2 Dichloroethene (ug/L)	Ethyl Benzene (ug/L)	Isopropyl Benzene (ug/L)	MTBE (ug/L)	Naphthalene (ug/L)	n-Propyl Benzene (ug/L)	Toluene (ug/L)	1,1,2 Trichloroethene (ug/L)	1,2,4 Trimethylbenzene (ug/L)	1,3,5 Trimethylbenzene (ug/L)	Xylenes (ug/L)	TPH as Gas/GRO (ug/L)	TPH as Fuel Oil/DRO (ug/L)	PCB 1254 (ug/L)	Arsenic (ug/L)	Barium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Mercury (ug/L)
ST-10	14	26-Sep-95	<1	<1	<1	<1	17	0.4	<1	<1	<1	<1	<1	<1	92	<1	<1	<1	---	900	---	---	---	---	---	<2	---