

CONSULTANTS
• GEOTECHNICAL
• MATERIALS

ENVIRONMENTAL

April 27, 2005

Minneapolis, MN 50 Groveland Terrace, Suite A Klodt, Inc. 55403

PLR/SF SECTION MAR RECIEVE **2** ∞ 2006

Attn: John Bell

RE: Supplemental Report of Phase II Environmental Site Assessment South Minneapolis Apartment Project

AET Project No. 03-02255ii.sup Minneapolis, Minnesota

Dear Mr. Bell:

performed in accordance with our proposal agreement no. 3-05-133. services at the above-referenced property in Minneapolis, Minnesota. American Engineering Testing, Inc. has completed additional Environmental Assessment This work was

questions regarding the information presented in this report, or if we can be of additional service, please contact me. We appreciate the opportunity to have been of service to you on this project. If you have any

Sincerely,

American Engineering Testing, Inc

Charles W. Bisek

Senior Environmental Scientist

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- Boring Location Map

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- ₩. Boring Logs
 Push Probe Environmental Sampling Methods (2)
- Laboratory Analytical Reports and Chain-of-Custody Records

SUPPLEMENTAL REPORT OF PHASE II ENVIRONMENTAL SOUTH MINNEAPOLIS APARTMENT PROJECT MINNEAPOLIS, MINNESOTA AET Project # 03-02255ii.sup SITE ASSESSMENT

1.0 INTRODUCTION

Apartment Project site in Minneapolis, Minnesota. that American Engineering Testing, Inc. (AET) conducted at the proposed South Minneapolis This report contains the results of additional Phase II Environmental Site Assessment services

1.1 Purpose

characterize the subsurface soils at the subject site. The purpose of performing the additional Phase II Environmental Site Assessment services is to

1.2 Scope of Services

no. 3-05-133) proposal agreement with Klodt, Inc. and includes the following items: The scope of our environmental assessment services was outlined in our April 6, 2005 (proposal

- Clear underground utilities through the Gopher State One Call system.
- proposed boring locations. Subcontract with a private utility locator to clear private underground utilities at the
- Perform GeoprobeTM (push probe) borings at the site.
- probe borings with a photoionization detector (PID) for the presence of organic vapors Provide an environmental technician to screen soil samples recovered from the push
- Submit representative soil samples collected from the borings to the laboratory for
- Prepare a written report summarizing the results of field work and laboratory analysis

1.3 Limitations and Exceptions of Assessment

sampling as part of recently proposed scope of services. related to recognized environmental conditions not identified in the Phase I ESA, not made service, there may be localized contamination at the site that we cannot ascertain and for which known to us previously or not reasonably discoverable at the time of our field exploration and we will not be responsible, given this Scope of Assessment Work. Such contamination could be You should be aware that, even though we follow the current ASTM standard practice for this

1.4 Reliance

exclusive use of Klodt, Inc. for specific application to the site. This Supplemental Report of Phase II Environmental Site Assessment has been prepared for the

2.0 BACKGROUND

2.1 PROPERTY Description and Features

residentially developed area in Minneapolis. The location of this site is shown on Figure 1. Snelling Avenue between 43rd and 44th Street in an industrially developed area and adjacent to a The South Minneapolis Apartment Project site is comprised of about 4.16 acres located west of

since been removed. tanks (USTs) used to store gasoline, diesel fuel, and drain oil had been in use but reportedly have care products, production of organic fertilizer, etc. included a laundry, creamery, bottling company, laboratory, manufacturing, production of hair additions have been constructed since that time. Development initially began at the south end of the site in about 1925. A UST used to store alcohol is still present near the southeast corner of the Historical use of buildings In addition, various underground storage Various buildings at the site and has

2.2 Proposed Construction

underground structures will be transported off-site for disposal have underground parking/garages. Excess soil generated in conjunction with excavating these apartment buildings, along with some retail development. The buildings proposed at the site will We understand plans include demolishing the buildings that currently exist and constructing

2.3 Previous Environmental Assessment.

recognized environmental conditions associated with the subject property report of AET Project No. 03-02255 dated January 19, AET previously performed a Phase I ESA for the site, the results of which were included in the , 2005. AET identified the following

- Former spills.
- manufacturing facility. Use of buildings as a laundry, creamery, car shop, machine shop, repair building, and
- USTs, dispensing pumps, associated piping, and oil burners.
- Floor drains, associated separators and piping, and dry well.

This report is considered an extension of, and a supplement to, the previous Phase II report. services were summarized in the report of AET project no. 03-02255ii.u dated March 25, 2005 AET also performed Phase II ESA services at the subject site. The results of the Phase II ESA

3.0 ENVIRONMENTAL ASSESSMENT

3.1 Field Exploration Procedures

of the main building; five push-probe borings, numbered GP-14 within the main building; and push-probe boring GP-19 was done in the smaller building in the Specifically, boring GP-13A was done near previous boring GP-13 north of the northwest corner The field exploration and sampling that AET recently performed was done on April 7, 2005. through GP-18, were done

are shown on Figure 2. Logs of the recent borings are included in Appendix A. northwest corner of the site. The locations of the recent borings, as well as the previous borings

Rational for Selecting Sampling Locations

Rationale used for selecting specific sampling locations is presented below

- Boring main building and adjacent to a diked area where organic fertilizer had previously been GP-13A was drilled near former Boring no. 13 near the northwest corner of the
- Boring the main building GP-14 was drilled adjacent to a trench drain in the former "production" area of
- building, Boring GP-15 was drilled adjacent to a shallow pit in the former "production" area of the
- GP-16 was done adjacent to a sewer sediment trap/separator in the main building
- Boring building manufactured fungicides for Ringer Corporation and near a trench drain in the main GP-17 was drilled adjacent ਠ the room in which the previous tenant
- associated with a floor drain is present. Boring GP-18 was drilled near the northwest corner of the main building near a cleanout
- building near the northwest corner of the site Boring GP-19 was performed adjacent to a sewer sediment trap/separator in the smaller

3.3 Contamination Reduction

Appendix B for contamination reduction procedures followed conjunction with performing the borings, prior ಕ beginning and during field operations. steam cleaning and/or cleaning procedures were Refer to the sheets included in

3.4 Field Screening/Sample Observations

sheets included in Appendix B for screening procedures. detector (PID) equipped with a 10.6 electron volt (eV) lamp. Soil samples collected from the borings were screened in the field with a photoionization Refer to the previously described

environmental assessments were included in Table 1 and 1A in the previous reports.) logs and they are summarized in Table 1B. The results of the recent PID screening are shown in the right hand column on the soil boring (PID screenings performed as part of previous

boring logs are attached as Appendix A. presence of debris. The samples were also visually observed for evidence of contamination, obvious odors, and the If present, evidence of contamination, odors, etc. was noted on the logs. The

3.5 Soil Sampling

conjunction with borings. Refer to the attached sheets included in Appendix B for information concerning soil sampling in

3.6 Soil Sample Collection for Chemical Analysis

copper, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and diesel range organics (DRO), volatile organic compounds (VOCs), RCRA metals, potassium, appropriate analysis to characterize these materials. Laboratory analysis of soil samples included Soil samples were collected and submitted to Legend Technical Services, Inc. (Legend) for sulfates

DRO Sampling

were placed in a tared 60 ml vial. Soil samples were collected using clean disposable gloves. Approximately 25 grams of soil/fill moisture determination Another container was completely filled and submitted for

VOC Sampling

generally performed in accordance with EPA Method SW-846 5035 wiped clean, the cap was sealed and the vial shaken and checked for leakage. GRO/BETX vial containing 25 ml of purge and trap grade methanol. appropriate containers. Soil samples were collected using clean disposable Approximately 25 grams of gloves. soil were Samples placed in a tared 60 ml After the vial threads were were collected Sampling was Ħ

RCRA Metals, Potassium, and Copper Sampling

was filled with soil. Soil remaining on the threads was wiped off and the lid secured Soil sample collection was done using clean disposable gloves. A 100 to 250 ml plastic bottle

PCB Sampling

containers Soil samples were collected using clean disposal gloves. Samples were collected in appropriate

PAH Sampling

Soil sample collection was done using clean disposable gloves. Soil remaining on the threads was wiped off and the lid secured. A 60 ml glass jar was filled with

Sulfate Sampling

appropriate containers samples were collected using clean disposable gloves. Samples were collected Ħ.

General Information Regarding Soil Sampling

used for analytical testing. made to expose fresh soil. disposable gloves, clean spatulas, etc.) was used. To minimize the possibility of cross contamination, dedicated sampling equipment (clean new Soil previously used for soil screening or for classification was not Prior to collecting samples, a fresh cut was

record which accompanied the samples of person collecting the sample. number, sample location and depth, time and date sampled, analysis to be completed and name At the time of collection, sample jars were labeled with the following information: This information was also entered on the chain-of-custody **AET** project

chain-of-custody forms, for chemical analysis soil samples were placed in a chilled cooler and delivered to Legend, accompanied with

4.0 BORING RESULTS

contains sheets describing terminology used on the boring logs the individual boring locations. Refer to the logs of the soil borings for soil profiles, observations, and PID screening results The boring logs are included as Appendix A. Appendix M

clay) or coarse alluvium (sand). comprised of silty sand and lean clay. Pieces of bituminous, glass, and/or bricks were observed fill from borings GP-16 and GP-17. basic soil profile encountered in the recent borings is Soil encountered below the fill is fine alluvium (lean fill over alluvial soils. The fill is

samples recovered from the push-probe borings As shown on the boring logs and in Table 1B, PID readings ranged from 0.0 ppm to 0.9 ppm in

Groundwater was not encountered in the push-probe borings.

5.0 LABORATORY ANALYTICAL RESULTS-SOIL

through 8 were included in previous reports.) Legend laboratory reports and chain-of-custody records are attached as Appendix C. site are summarized in Tables 2A, 4A through 6A and 8A and discussed below. results of laboratory analysis performed on soil samples that AET collected at the subject The complete (Tables 2

Tables 2A, 4A through 6A and 8A are predominantly sandy. "action level" contamination, we compared the measured DRO/GRO concentrations to the MPCA established contaminants identified, including DRO and GRO. within the soil to leach to the groundwater. SRVs and SLVs have not been established for all the health is concluded to exist. The Tier 1 SLVs are used to assess the potential for contaminants representative site contaminant concentration exceeds the SRV, unacceptable risk to human assumption that human exposure to the contaminants occurs in a residential setting. Tier 1 soil leaching values - SLVs (updated 11-2-99). Residential SRVs are based on the borings, we compared the detected concentrations of identified analytes to Minnesota Pollution To assess the magnitude of soil contamination identified in samples collected from the recent soil Control Agency (MPCA) established residential soil reference values – SRVs (1999 version) and of 50 ppm hydrocarbon contamination for petroleum release sites where the soils SRVs, SLVs, and Action Levels are included, where appropriate, in To assess the magnitude of DRO/GRO When a

<u>5.1 DRO</u>

samples are adjacent to the room in which the previous tenant manufactured fungicides and near a trench indicated the DRO detected in the sample from boring GP-17 does not display a fuel oil pattern reporting limit but below the "action level" in upper soil samples collected from boring GP-15 the main building near a cleanout associated with a floor drain. in the upper sample collected from boring GP-18 which was drilled near the northwest corner of (drilled adjacent to a shallow pit in the former "production" area) and boring GP-17 (drilled Ten soil samples were submitted for DRO analysis. DRO was detected above the "action level" in the primarily due to overlap from heavy oil range product. main building). The laboratory noted the results in the DRO range DRO was measured above the In addition, the laboratory in all three

5.2 VOCs

previous tenant manufactured fungicides and near a trench drain in the main building sample collected from boring GP-17 which was drilled adjacent to the room samples submitted for analysis. One VOC constituent was detected above the laboratory reporting limit in one of the seven Trichloroethene was measured at 0.30 mg/kg in the upper soil Ħ. which the

5.3 Metals

laboratory reporting limit or they were detected below established SRVs and SLVs Except for three samples, the metals that were analyzed for were not detected above

associated with a floor drain). and at concentrations of 14 and 15 mg/kg in the upper and lower depth samples, respectively, Arsenic was measured at a concentration of 10 mg/kg in the upper sample collected from boring from boring GP-18 (drilled near the northwest corner of the main building near a GP-14 (drilled adjacent to a trench drain in the former "production" area of the main building) cleanout

manufactured fungicides and near a trench drain in the main building) is within this range sample from native soils is 400 to 30,000 mg/kg. Chemistry of Hazardous Materials by J. Dragun indicates the typical range of potassium in SRV and SLV have not been established for potassium. boring GP-17 (drilled adjacent The concentration of potassium measured in the upper soil to the room Information published in The ij. which the previous tenant Soil

5.4 PCBs

PCBs were not detected above the laboratory reporting limit in the six samples submitted for analysis

5.5 PAHs

analysis PAHs were not detected above the laboratory reporting limit in the six samples submitted for

5.6 Sulfate

concentration of sulfate found to occur in natural soils. (drilled adjacent to the room in which the previous tenant manufactured fungicides and near a Sulfate was measured at 57 mg/kg in the soil upper soil sample collected from boring GP-17 drain in the main building). This concentration is within the normal background

6.0 CONCLUSIONS/RECOMMENDATIONS

made aware of the contamination and if the contamination has not already been reported to the Minnesota Duty Officer, it should be. Please contact us if you want us to notify the Duty Officer though some non-petroleum contaminants were also identified. The owner of the site should be on behalf of the owner. level contamination at the site. The Phase II Environmental Site Assessment performed by AET to date has documented low Some of the contamination appears to be petroleum related,

from the site will need to be disposed at an appropriate facility, i.e., the impacted soils will most Impacted soils excavated in conjunction with re-development activities that need to be removed likely need to be disposed at a landfill versus being re-used at another residential or commercial

7.0 CLOSURE

practicing in this area, under similar budgetary and time constraints that level of skill and care ordinarily exercised by other members The services performed by AET for this project have been conducted in a manner consistent with of the profession currently

immediately contacted to review these conditions and determine if there are any material impacts on any of our conclusions and recommendations. If conditions differing from those identified in this report are encountered, AET should be

8.0 SIGNATURES

Report Prepared By: American Engineering Testing, Inc.

Charles W. Bisek

Sr. Environmental Scientist

Report Reviewed By:

American Engineering Testing, Inc.

Robert A. Kaiser

Vice President, Environmental Division

GP-13A Number Boring GP-14 GP-19 GP-17 GP-18 GP-16 GP-15 0.6 0.8 0.8 0.0 0.6 0.9 0-2South Minneapolis Apartment Project **Summary of PID Screening** Minneapolis, MN AET No. 03-02255 0.9 0.8 0.7 2-4 0.8 0.6 0.8 0.0 (results in ppm) Table 1B 0.0 0.9 0.8 0.8 0.8 0.8 0.9 4-6 Depth (ft) 0.8 0.8 0.0 0.8 0.7 6-8 0.7 0.8 8-10 0.0 0.7 0.8 0.7 10-12 0.7 0.0 0.4 0.8

45

South Minneapolis Apartment Project **Summary of DRO Analysis** AET No. 03-02255 Minneapolis, MN Table 2A

Boring Number GP-15 **GP-13A** GP-19 GP-18 GP-17 GP-14 GP-16 Depth (ft) 11-12 11-12 1-2 5-6 7-8 7-8 1-2 7-8 1-2 7-8 (results in mg/kg) 16 (A, LI) ND 68 (LI) 14 (LI) DRO H N B H Y H **Action Level** 50 50 50 50 50 50

ND: Not Detected above Laboratory Reporting Limit.

LI: Results in the DRO range are primarily due to overlap from a heavy oil range product.

A: Sample does not display a fuel oil pattern. Sample contains several discreet peaks.

South Minneapolis Apartment Project Summary of VOC Analysis AET No. 03-02255 (results in mg/kg) Minneapolis, MN Table 4A

Boring Number	Depth (ft)	VOCs	Trichloroethene
GP-14	1-2	ND	
GP-15	5-6	ND	
GP-16	7-8	ND	
CB 17	1-2		0.30*
OT-1/	7-8	ND	
GP-18	1-2	ND	
GP-19	7-8	ND	
: The Residential S	RV and Tier	1 SLV for to	The Residential SRV and Tier 1 SLV for trichloroethene are 29 and 0.14
ng/kg, respectively.			

^{.*}

ND: Not Detected above Laboratory Reporting Limit.

South Minneapolis Apartment Project Summary of Metals Analysis AET No. 03-02255 Minneapolis, MN Table 5A

(results in mg/kg)

									_
Boring Number	GP-14	GP-15	GP-16	GP-17	GD_18	C1 -10	GP-19	SRV	SLV
Depth (ft)	1-2	5-6	7-8	1-2	1-2	7-8	7-8		
Arsenic	10	1.5	2.1	5.8	14	15	1.8	10	15.1
Barium	110	43	40	77	140	160	26	1200	842
Cadmium	ND	ND	ND	ND	0.39	ND	ND	35	4.4
Chromium	27	5.7	4.1	16	17	17	4.1	≥71	≥18
Copper	NA	NA	NA	18	NA	NA	NA	100	400
Lead	13	6.5	2.7	13	18	11	2.3	400	525
Potassium	NA	NA	NA	890	NA	NA	NA	NE	H
Mercury	ND	ND	ND	ND	ND	ND	ND	0.7	1.6
Selenium	ND	ND	ND	ND	ND	ND	ND	170	1.5
Silver	ND	ND	ND	N	A	A	ND	170	3.9

ND: Not Detected above Laboratory Reporting Limit. NA: Not Analyzed

NE: Not Established

SRV: Residential Soil Reference Value

SLV: Tier 1 Soil Leaching Value

Boring Number GP-17 GP-19 GP-18 GP-16 GP-15 GP-14 Summary of PCB Analysis South Minneapolis Apartment Project AET No. 03-02255 (results in mg/kg) Minneapolis, MN Depth (ft) Table 6A 7-8 1-2 7-8 5-6 1-2 **PCBs** ¥ A Ð A A H

ND: Not Detected above Laboratory Reporting Limit.

Table 8A
Summary of PAH Analysis
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255
(results in mg/kg)

Q1 17	GP_10	GP-18	GP-16	GP-15	GP-14	GP-13A	Boring Number
/=0	8 7	1-2	7-8	5-6	1-2	11-12	Depth (ft)
		ND	ND	ND	ND	ND	PAHs

ND: Not Detected above Laboratory Reporting Limit.

3				The second secon
CHECKED BY:	DRAWN BY:	None	SCALE:	TESTING, INC.
	ocation Map	PROPERTY Location Map	SUBJECT:	ENGINEERING
t, Minneapolis, MIN	So. Minneapolis Apartment Project, Minneapolis, Min	So. Minneapol	PROJECT:	AMEDICAN

13th Ave 5		14th Ave S	2 9VA 11EL 2 9VA 11EL
19th Ave S 17th Ave S		16th 18th A	A LAND TIXE T
- 5	Cédar Av 일품	"金井	19th Ave S 21st Ave S
Lake Nokhornis Park	Hiawatha Golf Course	186414 St E 43rd St E 43rd St E	S and pass See 25th Ave S
Carto Allico Talla, Mile	8 T 28th Ave S		学算 25th Ave S タッ サー
31st Ave S <u>8</u>		2 avA diOC any 1918 any 1918	34th Ave S
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44th Ave 500	⁽³⁾ [8]	Milmed 494 S.F.	10
46th Ave			
_8	n (番	# ₹	
Company	highland Pkoy	MN 55406 Harlord Ave	MapPoir Lincoln Av Fairmount Ave Sargent Ave
	i S	å 1 å 1	apPoint
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AET #03-02255

DATE Jan-05

FIGURE 1



AET JOB NO: 03-02255	*		·	LOG	OF BO	LOG OF BORING NO.	Î	GP-13A	3A (p.	. 1 of 1)	
PROJECT: So. Mpls. Apt.	. Project near E43rd St & Snelling Ave.; Mpls, MN	E43rd	St & Snel	ling /	Ave.	Mpls,	M				
DEPTH SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	EVATION: Not Determined MATERIAL DESCRIPTION		GEOLOGY	z	MC	SAMPLE TYPE	REC IN.	WC L	& LABORATORY DEN LL PL	ATORY PL	PID
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3	2		FILL						.2		0.7
4 -											
5 - FILL, mostly silty sand, clay layer at 6', brown	ay layer at 6', brown								_		0.8
6					×	MC	36				
7 –											0.7
88			4)
9 – POORLY GRADED SAND, medium grained,	D, medium grained,		COARSE				,				0.7
10 _ 010 WIT (01)					Į	1410					
11											0.4
END OF BORING											
								<u> </u>			
DEPTH: DRILLING METHOD		WATE		SURE	ŒNTS		-1		NOTE	NOTE: REFER TO	R TO
0-12' Geoprobe	DATE TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	H	DRILLING FLUID LEVEL		WATER LEVEL	THE	THE ATTACHED	TED
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CC: MS	BORING COMPLETED:		0-8'	DEPTH:	ox	7 -	6	4 3	1 - 2 -		DEPTH IN FEET	PROJECT:	AET JOB INC.
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COMPLETED: 4/7/05 CC: MS CA: BT Rig: 77	BORING		0-12' Geoprobe	DEPTH: DRILLING METHOD	END OF BORING	10 -	 POORLY GRADED SAND, medium grained, brown (SP) 	6	4 6	2 – FILL, mostly silty sand with gravel, dark brown	CONCRETE SLAB	DEPTH NOT SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	PROJECT: So. Mpls. Apt.	ATT 100 NO. 03_02755
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S CA: BT Rig: 77				12' Geoprobe	TH: DRILLING METHOD	END OF BORING			grained, brown to light brown (SP)				,	FILL, sandy lean clay, dark brown		FILL, mostly silty sand and gravel, some glass pieces at 2½, brick, brown to dark brown	CONCRETE SLAB \FILL, possible bituminous, gravel, black	SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	CT: So. Mpls. Apt.	AET JOB NO: 03-02255
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THI	TERMINOLOGY ON	EXPLANATION OF	SHEET	THE A.	NOTE: REFER TO													DEN LL PL		
THIS LOG	OLOGY	IATION	SHEETS FOR AN	THE ATTACHED	REFER													-		(p. 1 of 1)
	NO.	QF	Ž	ED	TO		0.7		0.7		0.8		0.9		0.8	1	0,8	PID (ppm)		



CC: MS	BORING				DEPTH:	0	0 7 6	л 4 и 2 н 1 1 1 1	-	DEPTH IN FEET	PROJECT:	AET JOB NO:
S CA: BT Rig: 77			-	0-8' Geoprobe	TH: DRILLING METHOD	END OF BORING	POORLY GRADED SAND, medium grained, brown (SP)	FILL, mostly silty sand, gravel and sandy clay, brown, brick pieces at 3½'	CONCRETE SLAB	SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	CT: So. Mpls. Apt.	DB NO: 03-02255
				DATE			D, medium į	avel and san		EVATION: Not Determin MATERIAL DESCRIPTION	1.1	
				TIME			grained,	ıdy clay,		ned	near E	
			None	SAMPLED DEPTH	WATE						43rd	
		-	Taken	CASING DEPTH	WATER LEVEL MEASUREMENTS		COARSE	FILL		GEOLOGY	Project near E43rd St & Snelling Ave.; Mpls, MN	
	1		Refer To		ASURE					z	lling	100
			r To	CAVE-IN DEPTH	MENT		Z	Z		MC	Ave.	3 OF B
			"MC"	DRILLING FLUID LEVEL	S		MC	MC		SAMPLE TYPE	Mpls,	LOG OF BORING NO.
-	+						48	30		N.C.	N	
			Column	WATER LEVEL						FIELD & DE		GP-17
Н	TERM	EXPL,	SHE	THE	NOTE					DEN LL		7 (p.
THIS LOG	TERMINOLOGY ON	EXPLANATION OF	SHEETS FOR AN	THE ATTACHED	NOTE: REFER TO				-	ATORY		1 of 1)
٩	NO AE	OF OF	RAN	HED	R TO		0.8	0.9	0.8	PID (ppm)		1)



CC: MS	BORING COMPLETED:			0	DEPTH:	o	7 6	S 4 U	2		DEPTH IN FEET	PROJECT:	AET JOB NO:	
S CA: BT Rig: 77	ETED: 4/7/05			0-8' Geoprobe	TH: DRILLING METHOD	END OF BORING	POORLY GRADED SAND, fine to medium grained, brown (SP)	LEAN CLAY, brown (CL)	FILL, mostly silty sand, gravel, and sandy clay, dark brown	CONCRETE SLAB	SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	So. Mpls. Apt.	Ĭ.	
				DATE TIME			D, fine to medium		avel, and sandy clay		EVATION; Not Determined MATERIAL DESCRIPTION	Project near E43rd St & Snelling Ave.; Mpls, MN		
			None	SAMPLED DEPTH	WATE							E43rd		
			Taken	CASING DEPTH	WATER LEVEL MEASUREMENTS		COARSE ALLUVIUM	FINE ALLUVIUM	FILL		GEOLOGY	St & Snel		
			Refer To	CAVE-IN DEPTH	ASURE						Z	ling /	LOG	
_			To		ÆNTS		×	2	Z		MC	Ave.,	OF BC	
			"MC"	DRILLING FLUID LEVEL				МС		MC		SAMPLE TYPE	Mpls,	LOG OF BORING NO.
-			a				48		46		REC N.		ĺ	
			Column	WATER LEVEL							WC D		GP-18	
1111	TERMINOLOGY ON	EXPLANATION OF	SHEETS	THE AI	NOTE: I						FIELD & LABORATORY TESTS WC DEN LL PL PD (ppm)		(p.	
TITIS LOO	OLOGY (IATION (SHEETS FOR AN	THE ATTACHED	NOTE: REFER TO		0				FL L		1 of 1)	
	- S	웃		0	Ó		0.8	0.8	0.6	١	PID (ppm)		l	



cc: Ms	BORING COMPLETED:		0-12'	DEPTH:	EJ	: ::	10 —	8 – PC		6 –	5	4 –		2 1	Q	DEPTH IN FEET	Ğ	1 1 3 0 1 10
	4/7/05		Geoprobe	DRILLING METHOD	END OF BORING			POORLY GRADED SAND, medium grained, brown (SP)					FILL, mostly silty sand with gravel, brown		CONCRETE SLAB	SURFACE ELEVATION: Not Determined MATERIAL DESCRIPTION	So. Mpls. Apt.	
			DATE TIME					D, medium grain					th gravel, brown			EVATION: Not Determined MATERIAL DESCRIPTION	. Project near E43rd St	
		None	Š	WATER													ar E43rd S	
		Taken	1	WATER LEVEL MEASUREMENTS				COARSE ALLUVIUM					FILL			GEOLOGY	St & Snel	
		Refer To	CAVE-IN DEPTH	SUREME			Z			Z				X		N MC	ling Av	
		o "MC"	EL	NTS			MC			MC				MC		SAMPLE TYPE	& Snelling Ave.; Mpls, MN	
		Column		-1			36			24				12		REC FIELD &	MN	
THIS LOG	TERMINOLOGY ON	EXPLANATION OF	1	NOTE: REFER TO												WC DEN LL PL (ppm)		
L	NO A	Ž OF	HED	R TO			0.8	0.8	0.7) I	0.8		0.8			(ppm)		1