AMERICAN ENGINEERING TESTING, INC.

CONSULTANTS
• GEOTECHNICAL
• MATERIALS
• ENVIRONMENTAL

March 25, 2005

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

Attn: John Bell

RE: Report of Phase II Environmental Site Assessment
South Minneapolis Apartment Project
Minneapolis, Minnesota
AET Project No. 03-02255ii.u

Dear Mr. Bell:

American Engineering Testing, Inc. has completed Environmental Assessment services at the above-referenced property in Minneapolis, Minnesota. This work was performed in accordance with our proposal agreements no. 3-04-409 and 3-05-062.

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

Sincerely,
American Engineering Testing, Inc.

Charles W. Bisek

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Senior Environmental Scientist

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SOUTH MINNEAPOLIS APARTMENT PROJECT
MINNEAPOLIS, MINNESOTA
AET Project # 03-02255ii.u

1.0 INTRODUCTION

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

1.1 Purpose

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

1.2 Scope of Services

The scope of our environmental assessment services was outlined in our December 22, 2004 (proposal no. 3-04-409) and February 1, 2005 (proposal no. 3-05-062) proposal agreements with Klodt, Inc. and includes the following items:

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

The recent standard penetration borings were done for both environmental and geotechnical purposes. A report addressing the geotechnical properties of the soils encountered in the standard penetration borings has been reported under separate cover.

1.3 Limitations and Exceptions of Assessment

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

At the time we performed our field work, both buildings were used for storage of equipment, supplies, products, etc. associated with the former occupant of the buildings. The presence of equipment, supplies, products, etc. did not allow access to all locations within the buildings.

1.4 Reliance

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

2.0 BACKGROUND

2.1 PROPERTY Description and Features

The South Minneapolis Apartment Project site is comprised of about 4.16 acres located in an industrially developed area and adjacent to a residentially developed area in Minneapolis. The location of this site is shown on Figure 1.

Development initially began at the south end of the site in about 1925. Various buildings and additions have been constructed since that time. Historical use of buildings at the site has

included a laundry, creamery, bottling company, laboratory, manufacturing, production of hair care products, production of organic fertilizer, etc. In addition, various underground storage tanks (USTs) used to store gasoline, diesel fuel, and drain oil had been in use but reportedly have since been removed. A UST used to store alcohol is still present near the southeast corner of the site.

2.2 Proposed Construction

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

2.3 Previous Environmental Assessment.

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

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

AET also prepared a Phase II ESA for the subject site. The results of that ESA were included in the report of AET project no. 03-02255ii dated February 4, 2005. The results of AETs previous Phase II ESA are incorporated in the present report.

3.0 ENVIRONMENTAL ASSESSMENT

3.1 Field Exploration Procedures

The field exploration and sampling that AET recently performed at the site was done during the period of December 21, 2004 through February 22, 2005. Specifically, seven push-probe borings, numbered GP-1 through GP-7, were done in exterior areas of the site on December 21 and 22; push-probe borings GP-8 through GP-11 and hand auger boring HA-1 were done within the large building at the site on December 22; eight standard penetration borings were drilled in exterior areas of the site between December 29, 2004 and January 4, 2005; hand auger boring HA-1A was drilled as an extension of boring HA-1 on February 21 and 22, 2005; borings GP-1A, GP-6A, GP-12, GP-13, 6A, 7A and 8A were drilled on February 22, 2005. The boring locations are shown on Figure 2. Logs of the borings are included in Appendix A.

3.2 Rational for Selecting Sampling Locations

Rationale used for selecting specific sampling locations is presented below.

- Borings GP-1, GP-1A, GP-6 and GP-6A were drilled in areas of the site where, based on historical aerial photographs, unidentified items had been stored/stockpiled.
- Borings GP-2, GP-5, GP-8, and GP-12 were drilled in areas where petroleum USTs had previously been present.
- Borings GP-3 and GP-4 were drilled in areas where drain oil USTs had previously been located.
- GP-7 was done adjacent to an existing alcohol UST.
- Boring GP-9 was drilled in the building in an area where fuel dispensing pumps had previously been present.
- Boring GP-10 was drilled in the building near a trench floor drain and boring GP-11 was drilled in the building in the vicinity of a sewer sediment trap/separator.
- Boring GP-13 was drilled near the northwest corner of the warehouse and adjacent to a diked area where organic fertilizer had previously been stored.
- Borings HA-1 and HA-1A were drilled in a dry well within the basement boiler room.

- Borings 1 through 8 were drilled at exterior locations to assess the geotechnical properties of soils throughout the site. Of these eight borings, borings 2 and 4 were drilled in areas where residences had previously been present; borings 8 and 8A were drilled along drainage ports associated with a diked area where organic fertilizer had previously been stored; boring 1 was drilled in the vicinity of the alcohol UST; the remaining borings were done at other accessible areas in the north half of the site.
- Borings 6A and 7A were drilled adjacent to previous standard penetration borings 6 and 7, respectively where near surface soil contamination was identified.

3.3 Contamination Reduction

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

3.4 Field Screening/Sample Observations

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

The PID screening results are shown in the right hand column on the soil boring logs and they are summarized in Tables 1 and 1A.

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

3.5 Soil Sampling

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

3.6 Soil Sample Collection for Chemical Analysis

Soil samples were collected and submitted to Legend Technical Services, Inc. (Legend) for appropriate analysis to characterize these materials. Laboratory analysis of soil samples included diesel range organics (DRO), gasoline range organics (GRO), benzene, ethyl benzene, toluene, and xylene (BETX), volatile organic compounds (VOCs), RCRA metals, cyanide, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), nitrogen, and pH.

DRO Sampling

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

GRO, BETX, and VOC Sampling

Soil samples were collected using clean disposable gloves. Samples were collected in appropriate containers. Approximately 25 grams of soil were placed in a tared 60 ml GRO/BETX vial containing 25 ml of purge and trap grade methanol. After the vial threads were wiped clean, the cap was sealed and the vial shaken and checked for leakage. Sampling was generally performed in accordance with EPA Method SW-845 5035.

RCRA Metal and Cyanide Sampling

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

PCB Sampling

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

PAH Sampling

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

Nitrogen & Total Kjeldahl Nitrogen & pH Sampling

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

General Information Regarding Soil Sampling

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

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

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

4.0 BORING RESULTS

Refer to the logs of the soil borings for soil profiles, observations, and PID screening results at the individual boring locations. The results of the PID screening results are also summarized in Tables 1 and 1A. The boring logs are included as Appendix A. Appendix B contains sheets describing terminology used on the boring and test pit logs.

Presented below is a brief summary of subsurface conditions encountered in the borings. PID readings, obvious odors, and visual evidence of contamination are also discussed.

4.1 Push-Probe Borings

Fill ranging from 3' to about 11½' thick was encountered in these borings. The fill is comprised of silty sand, lean clay, and sand. Pieces of bituminous and/or concrete were observed in fill from borings GP-1, GP-2, GP-3, and GP-9. Possible cinders were noted in fill between the 2' and 2½' depth in boring GP-12. Soil encountered below the fill is fine alluvium (lean clay) or coarse alluvium (sand).

Petroleum odors were noted in fill samples collected from borings GP-1, GP-7, and GP-9.

PID readings ranged from 0.0 ppm to 24.5 ppm in samples recovered from the push-probe borings.

Groundwater was not encountered in the push-probe borings.

4.2 Hand Auger Borings

Silty sand fill was encountered to 2½' in hand auger boring HA-1. Poorly graded sand with gravel was encountered between 2½' and the boring termination depth of 7'.

No apparent petroleum/fuel odors associated with the recovered soil samples were noted.

PID readings of 0.0 ppm to 22.3 ppm were recorded in fill samples recovered from the hand auger borings.

Groundwater was not encountered in the hand auger borings.

4.3 Standard Penetration Borings

Fill ranging from ½' to about 2' thick was encountered in these borings. The fill includes bituminous pavement at the surface, aggregate base, and lean clay. The fill is underlain by alluvial soils (clays and sands) and till (clayey sand).

No apparent petroleum/fuel odors associated with the recovered soil samples were noted.

PID readings ranged from 0.0 ppm to 0.7 ppm in samples recovered from the standard penetration borings.

Groundwater was measured in these borings at depths of 26' or more below the ground surface.

5.0 LABORATORY ANALYTICAL RESULTS-SOIL

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

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

concentrations to the Minnesota Department of Agriculture Nitrogen Cleanup Goals (CGs). SRVs, SLVs, CGs, and Action Levels are included, where appropriate, in Tables 2 through 7.

5.1 DRO

The results of DRO analysis performed on forty six soil samples identified DRO at concentrations above the "action level" in four samples. Two of these samples were fill soils collected from boring HA-1 which was drilled in the dry well located within the boiler room. The other two samples were near surface samples from boring GP-12. The laboratory noted the results in the DRO range in these four samples are primarily due to overlap from heavy oil range product.

DRO was measured at concentrations above the reporting limit but below the "action level" in ten samples collected in the following areas: borings GP-1, GP-1A, GP-6 and GP-6A, which were drilled in areas where historical aerial photographs showed items stored/stockpiles; boring GP-9 which was drilled in the area of former fuel pumps; boring GP-10 which was drilled adjacent to a trench drain in the production area; boring GP-12 which was drilled in an area where a UST was previously located; boring GP-13 which was drilled adjacent to the diked area where organic fertilizer was previously stored; boring 6 which was drilled east of the southeast corner of the building located in the northwest corner of the site; boring 7 which was drilled in the northwest corner of the site; boring 8 which was drilled near dike drainage ports associated with a diked area where organic fertilizer had previously been stored. With the exception of the samples analyzed from borings GP-6 and GP-9 in which the detected DRO is most likely associated with fuel oil/diesel fuel, the laboratory noted results in the DRO range in samples from borings GP-1, GP-1A, GP-6A, GP-12, GP-13, HA-1, 6, 7, and 8 are primarily due to overlap from heavy oil range product and samples from borings GP-6A, GP-10, 6, and 8 do not display a fuel oil pattern. The laboratory also indicated the pattern of the chromotograms of DRO detected in borings 6, 7, and 8 is likely not associated with fuel oil/diesel fuel but more likely polynuclear aromatic hydrocarbons (PAHs).

DRO was measured below the laboratory reporting limit in the remaining thirty two samples submitted for analysis.

5.2 GRO

The results of GRO analysis performed on seven soil samples did not identify GRO above the laboratory reporting limit in any of the samples analyzed.

5.3 BETX

One BETX constituent, xylene, was detected above the laboratory reporting limit in one of the five samples submitted for BETX analysis. Xylene was detected in a sample collected from boring GP-9 which was drilled in the area of former fuel pumps. However, the concentration of xylene measured in this sample was below the established SRV/SLV.

5.4 VOCs

VOCs were not detected above the laboratory reporting limit in ten of the eleven samples submitted for analysis.

One VOC - trichlorofluoromethane (Freon 11) - was detected at 0.97 mg/kg in coarse alluvial soils collected from boring 1, which was drilled near the southeast corner of the main building. This VOC was also detected in the QA/QC trip blank at a concentration of 0.49 mg/kg. The detected concentration of trichlorofluoromethane is well below the established SRV and SLV of 67 and 22 mg/kg, respectively.

Because alcohol is not included on the standard VOC list of analytes, we requested the laboratory to include tentatively identifiable compounds (tics) in the analysis performed on samples collected from the area of the alcohol UST (GP-7 and 1), the areas of borings done within the building where alcohol was used (GP-9, GP-10, GP-11, HA-1 and HA-1A), and boring 8 which was drilled near dike drainage ports associated with a diked area where organic fertilizer had previously been stored. No non-target analytes were identified by method 8260.

Method 8260 can be used to quantitate most volatile organic compounds that have a boiling point of less than 200C, such as low molecular weight halogenated hydrocarbons, aromatics, ketones, nitriles, acetates, acrylates, ethers, and sulfides. The typical quantitation limit for these compounds in a soil sample is approximately 0.25 mg/kg. Low molecular weight alcohols can also be identified by method 8260 with an estimated quantitation limit in the range of 5.0 to 20 mg/kg.

5.5 Metals

Except for one sample, the metals which were analyzed for were not detected above the laboratory reporting limit or they were detected below established SRVs and SLVs.

Total chromium was measured at a concentration of 26 mg/kg in a sample collected from boring GP-10 at a depth corresponding to slightly below the bottom of the trench drain in the production area. This value is below the SRV (71 mg/kg) and above the SLV (18 mg/kg) for hexavalent chromium, and it is well below both the SRV and SLV for trivalent chromium. The laboratory was unable to determine whether the chromium present in the soil sample is hexavalent or trivalent. Our experience is that hexavalent chromium is seldomly encountered.

5.6 PCBs

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

5.7 PAHs

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

5.8 Nitrogen and pH

Total Kjeldahl Nitrogen (TKN) was detected in a sample collected from boring GP-6 which was drilled in an area of the site where, based on historical aerial photographs, unidentified items had been stored/stockpiled, in samples collected from borings 8, 8A, and GP-13, which were drilled

adjacent to a diked area where organic fertilizer had previously been stored. In all cases the detected concentrations of TKN are below established Cleanup Goals.

The results of pH determinations indicate the pH of the samples tested are neutral to basic.

6.0 CONCLUSIONS/RECOMMENDATIONS

The Phase II Environmental Site Assessment performed by AET to date has documented contamination at the site. Some of the contamination appears to be petroleum related, though some non-petroleum contaminants were also identified. The owner of the site should be made aware of the contamination and the contamination should be reported to the Minnesota Duty Officer. Please contact us if you want us to notify the Duty Officer on behalf of the owner.

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

We recently completed a pre-demolition asbestos containing material (ACM) survey of the building at the site. The contents of the building had not been completely removed at the time we performed the ACM survey. We recommend that after the contents of the building are removed, we perform a walk through to identify locations of surface staining, waste traps/separators, etc. that were not accessible or visible at the time of the walk through performed as part of the Phase I ESA and at the time of the ACM survey. Based on observations performed at the time of the re-walk through, additional subsurface sampling within the buildings may be recommended.

7.0 CLOSURE

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

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

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

Table 1
Summary of PID Screening
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in ppm)

Boring Number	Depth (ft)					
	0-2	2-4	4-6	6-8	8-10	10-12
GP-1	0.0	0.0	5.0	0.0	0.0	0.0
GP-1A	0.4	0.6	0.4	-	-	-
GP-2	0.5	1.2	1.5	6.5	0.2	0.2
GP-3	0.3	0.2	2.5	4.5	4.0	20.
GP-4	1.5	5.0	1.5	3.0	1.0	1.5
GP-5	1.5	2.0	5.5	6.0	1.5	1.5
GP-6	4.0	.05	1.0	1.0	0.0	0.0
GP-6A	0.5	0.4	-	-	-	-
GP-7	5.9	7.0	2.0	2.0	1.6	2.0
GP-8	0.5	0.5	1.0	2.0	1.0	1.0
GP-9	0.5	0.5	24.5	1.5	-	-
GP-10	0.5	1.0	1.0	1.0	0.5	0.5
GP-11	0.0	0.0	1.0	0.5	0.0	0.0
GP-12	0.4	0.3	0.6	0.5	0.4	0.3
GP-13	0.5	0.4	-	-	-	-
HA-1	0.0	-	-	-	-	0.0
HA-1A	0.01/0.2*	0.5/3.2*	22.3/0.4*	0.5**	-	-

- Indicates sample not screened with PID
* PID readings of top half of sample/bottom half of sample
** Boring terminated at 7'.

Table 1A
Summary of PID Screening
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in ppm)

Boring Number	Depth (ft)									
	0-2	2-4	4½-6	7-8½	9½-11	12-13½	14½-16	19½-21	24½-26	29½-31
1	0.1	0.3	0.7	0.6	0.1	0.0	-	-	-	-
2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0
3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
5	0.0	0.4	0.0	0.0	0.0	0.0	-	-	-	-
6	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-
6A	0.2	0.3	0.2	-	-	-	-	-	-	-
7	0.4	0.0	0.0	0.0	0.0	0.0	-	-	-	-
7A	0.2	0.2	0.2	-	-	-	-	-	-	-
8	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-
8A	0.5	0.5	0.4	-	-	-	-	-	-	-

- Indicates sample not screened with PID

Table 2
Summary of DRO Analysis
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in mg/kg)

Boring Number	Depth (ft)	DRO	Action Level
GP-1	4-6	35 (LI)	50
	8-10	ND	50
GP-1A	0-2	32 (LI)	50
GP-2	6-8	ND	50
GP-3	6-8	ND	50
GP-4	6-8	ND	50
GP-5	6-8	ND	50
GP-6	4-6	16	50
	8-10	ND	50
GP-6A	0-2	18 (A, LI)	50
	2-4	ND	50
GP-7	4-6	ND	50
	8-10	ND	50
GP-8	6-8	ND	50
GP-9	4-6	14	50
	6-8	ND	50
GP-10	2-4	11 (A)	50
	6-8	ND	50
GP-11	4-6	ND	50
	8-10	ND	50
GP-12	2-2½	21 (LI)	50
	11½-12	ND	50
GP-13	0-2	**99** (LI)	50
	2-4	**110** (LI)	50
HA-1	0-½	**80** (LI)	50
	2-2½	**280** (LI)	50
HA-1A	4½-5	ND	50
	6½-7	ND	50
1	4½-6	ND	50
	12-13½	ND	50
2	0-2	ND	50
3	0-2	ND	50
4	2-4	ND	50
5	2-4	ND	50
6	0-2	10 (A,LI)	50
	12-13½	ND	50
6A	2-4	ND	50
	4-6	ND	50
7	0-2	46 (LI)	50
	12-14	ND	50
7A	2-4	ND	50
	4-6	ND	50
8	0-2	24 (A,LI)	50
	12-13½	ND	50
8A	2-4	ND	50
	4-6	ND	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.
Bold indicates DRO measured above Action Level.

Table 3
Summary of GRO and BETX Analysis
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in mg/kg)

Boring Number	Depth (ft)	GRO	BETX
GP-1	4-6	ND	NA
GP-2	6-8	ND	ND
GP-5	6-8	ND	ND
GP-7	0-2	ND	NA
GP-8	6-8	ND	ND
GP-9	4-6	ND	Xylene @ 0.099*
	6-8	ND	NA
GP-12	11½-12	ND	NA
5	2-4	ND	ND

*: The SRV and SLV for xylene are 110 and 45mg/kg, respectively.

NA: Not Analyzed

ND: Not Detected above Laboratory Reporting Limit.

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

Boring Number	Depth (ft)	VOCs	Trichlorofluoromethane
GP-3	6-8	ND	
GP-4	6-8	ND	
GP-6	4-6	ND	
GP-7	4-6	ND (1)	
	8-10	ND (1)	
GP-9	4-6	ND (1)	
	6-8	ND (1)	
GP-10	2-4	ND (1)	
	6-8	ND (1)	
GP-11	4-6	ND (1)	
	8-10	ND (1)	
GP-12	11½-12	ND	
HA-1	0-½	ND (1)	
HA-1A	4½-5	ND (1)	
	6½-7	ND (1)	
1	12-13½	(1)	0.97*
7	0-2	ND	
8	0-2	ND (1)	

*: 0.49 mg/kg detected in trip blank; the SRV and SLV for trichlorofluoromethane are 67 and 22 mg/kg, respectively.

ND: Not Detected above Laboratory Reporting Limit.
(1) VOC analysis included tentatively identfiable compounds (tics)

Table 5
Summary of Metals Analysis
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in mg/kg)

Boring Number	Depth (ft)	Arsenic	Barium	Cadmium	Chromium	Cyanide	Lead	Mercury	Selenium	Silver
GP-1	4-6	2.8	49	ND	10	NA	9.8	ND	ND	ND
GP-2	6-8	NA	NA	NA	NA	NA	2.5	NA	NA	NA
GP-3	6-8	1.6	34	ND	5.2	NA	2.4	ND	ND	ND
GP-4	6-8	2.8	83	ND	11	NA	5.6	ND	ND	ND
GP-5	6-8	NA	NA	NA	NA	NA	6.1	NA	NA	NA
GP-6	4-6	9.4	140	0.34	23	ND	11	ND	ND	ND
	8-10	1.1	36	ND	5.3	NA	2.6	ND	ND	ND
GP-8	6-8	NA	NA	NA	NA	NA	2.5	NA	NA	NA
GP-9	4-6	NA	NA	NA	NA	NA	24	NA	NA	NA
GP-10	2-4	11	130	ND	26	NA	14	ND	ND	ND
	6-8	1.9	44	ND	5.4	NA	3.0	ND	ND	ND
GP-11	4-6	2.2	47	ND	5.9	NA	3.3	ND	ND	ND
	8-10	1.3	34	ND	4.8	NA	2.4	ND	ND	ND
GP-12	2-2½	1.8	28	ND	12	NA	6.6	ND	ND	ND
	11½-12	NA	NA	NA	NA	NA	11	NA	NA	NA
7A	0-2	13	130	ND	19	NA	15	ND	ND	ND
8	0-2	6.4	100	ND	15	ND	28	ND	ND	ND
SRV		10	1200	35	≥71	62	400	0.7	170	170
SLV		15.1	842	4.4	≥18	10	525	1.6	1.5	3.9

NA: Not Analyzed
ND: Not Detected above Laboratory Reporting Limit.
SRV: Residential Soil Reference Value
SLV: Soil Leaching Value

Table 6
Summary of PCB Analysis
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in mg/kg)

Boring Number	Depth (ft)	PCBs
GP-3	6-8	ND
GP-4	6-8	ND
GP-6	4-6	ND
GP-6A	0-2	ND
	4-6	ND
GP-10	2-4	ND
	6-8	ND
GP-11	4-6	ND
	8-10	ND
7A	0-2	ND
8	0-2	ND

ND: Not Detected above Laboratory Reporting Limit.

Table 7
Summary of Nitrogen Analysis and pH Determinations
South Minneapolis Apartment Project
Minneapolis, MN
AET No. 03-02255.ii.u
(results in mg/kg)

Nitrogen Results

Boring Number	Depth (ft)	TKN	CG
GP-6	4-6	544 mg/kg	1000 mg/kg
GP-13	0-2	462 mg/kg	5000 mg/kg
1	12-13½	ND	1000 mg/kg
8	0-2	16 mg/kg	1000 mg/kg
8A	0-2	134 mg/kg	1000 mg/kg

Note: cleanup goal is 5000 mg/kg in upper 2' and 1000 mg/kg for soil below the 2'
ND: Not Detected above Laboratory Reporting Limit.
CG: Cleanup Goal

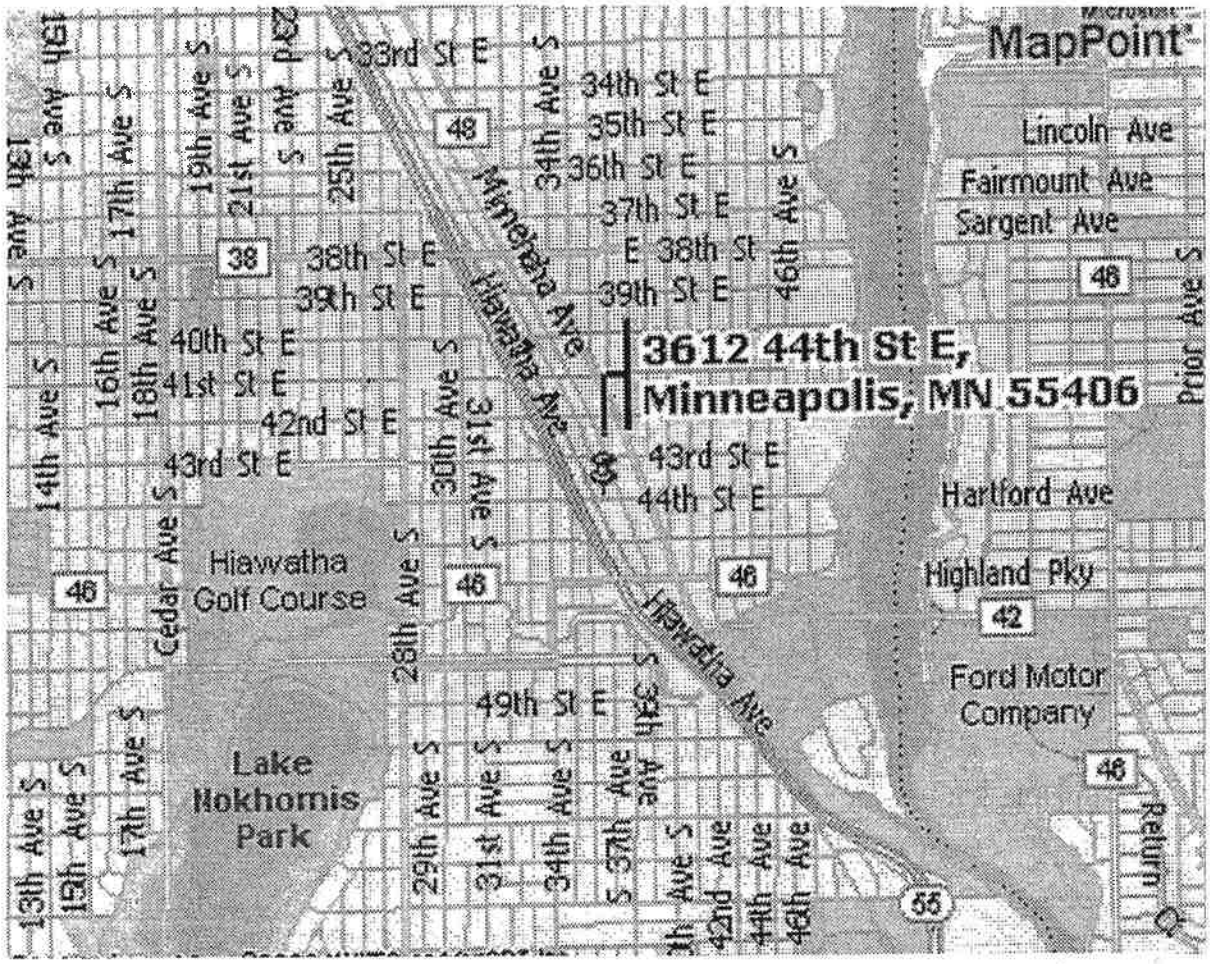
pH Determinations

Boring Number	Depth (ft)	pH
GP-6	4-6	8.4
GP-10	2-4	7.1
	6-8	9.0
GP-11	4-6	10.0
	8-10	9.8
8	0-2	8.1

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

Boring Number	Depth (ft)	PAHs
GP-1A	4-6	ND
GP-12	2-2½	ND
6A	0-2	ND
7A	0-2	ND
8A	0-2	ND

ND: Not Detected above Laboratory Reporting Limit.



N

AMERICAN ENGINEERING TESTING, INC.	PROJECT:	So. Minneapolis Apartment Project, Minneapolis, MN		AET #03-02255
	SUBJECT:	PROPERTY Location Map		DATE Jan-05
	SCALE: None	DRAWN BY:	CHECKED BY: CBish	FIGURE 1

Appendix A

Boring Logs

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-1 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	FILL, mostly silty sand with gravel, some bituminous, brown to dark brown	FILL									0.0
2				F/M	MC	48					
3											0.0
4	FILL, sandy lean clay, brown, slight petroleum odor at about 4' to 6' (CL) [may be fine alluvium]	FINE ALLUVIUM OR FILL									
5											5.0
6				M	MC	36					
7											0.0
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									0.0
10				M	MC	40					
11											0.0
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/21/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-1A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1	FILL, mostly class 5 gravel, tan, frozen to 2½'	FILL									0.4
2	ORGANIC CLAY, black (CL)	TOPSOIL		F/M	MC	48					
3											0.6
4	LEAN CLAY, brown (CL)	WEATHERED SOIL									
5	POORLY GRADED SAND, fine grained, light brown (SP)	COARSE ALLUVIUM		M	MC	24					0.4
6	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-6' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **PS** CA: **BT** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-2 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	FILL, mostly silty sand with gravel, some bituminous, brown to dark brown	FILL									0.5
2				F	MC	48					
3											1.2
4	FILL, lean clay, brown to dark brown (CL) [may be fine alluvium]	FINE ALLUVIUM OR FILL									
5											1.5
6				F/M	MC	40					
7											6.5
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									0.2
10				M	MC	36					
11											0.2
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**
BORING COMPLETED: **12/21/04**							
CC: **BT** CA: **AZ** Rig: **77**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-3 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1											0.3
2				F/M	MC	48					
3	FILL, mostly silty sand with gravel, some bituminous, brown to dark brown	FILL									0.2
4											
5											2.5
6				M	MC	40					
7											4.5
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									4.0
10				M	MC	40					
11											2.0
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/21/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-4 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	FILL, moslty silty sand with gravel, light brown	FILL		F/M	MC	48					1.5
2											
3	FILL, sandy lean clay, gravel, black										5.0
4											
5	FILL, sandy lean clay, gravel, gray to brown										1.5
6				M	MC	42					
7											3.0
8											
9											1.0
10	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM		M	MC	40					
11											1.5
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/21/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-5 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1											1.5
2				F/M	MC	48					
3	FILL, silty sand, gravel, some sandy lean clay, brown to dark brown	FILL									2.0
4											
5											5.5
6				M	MC	40					
7											6.0
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									1.5
10				M	MC	48					
11											1.5
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-12' Geoprobe	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
			None	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/21/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-6 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1 – 2 –	FILL, mostly silty sand with gravel, brown to dark brown	FILL		F/M	MC	48					4.0
3 – 4 – 5 –	FILL, lean clay, brown to dark brown (CL) [may be fine alluvium]	FINE ALLUVIUM OR FILL									0.5 1.0
6 – 7 – 8 – 9 –	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM		M	MC	48					1.0 0.0
10 – 11 –				M	MC	40					0.0
12 –	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/22/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-6A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1 –	FILL, mostly silty sand and gravel, black and brown, frozen to 2½'	FILL									0.5
2 –				F/M	MC	48					
3 –	LEAN CLAY, brown (CL)	WEATHERED SOIL OR FILL									0.4
4 –	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-4' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **PS** CA: **BT** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-7 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1 – 4	FILL, silty sand, gravel, dark brown to brown, slight petroleum odor	FILL		F/M	MC	48					5.9 7.0
5 – 6	FILL, lean clay, brown to dark brown (CL) [may be fine alluvium]	FINE ALLUVIUM OR FILL		M	MC	48					2.0
7 – 11	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM		M	MC	30					2.0 1.6 2.0
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/22/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-8 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
	6" CONCRETE										
1	FILL, silty sand, gravel, black										0.5
2				M	MC	48					
3	FILL, silty sand and sandy lean clay										0.5
4											
5		FILL									1.0
6				M	MC	40					
7	FILL, sand, medium to fine grained, brown to dark brown, little silt										2.0
8											
9											1.0
10				M	MC	40					
11	SAND, medium grained, brown (SP)	COARSE ALLUVIUM									1.0
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/22/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-9 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
	6" CONCRETE										
1											0.5
2				F	MC	36					
3											0.5
4	FILL, mostly silty sand, gravel, sandy lean clay, brown to dark brown, some concrete debris, petroleum odor at 4' to 6'	FILL									
5											24.5
6				M	MC	40					
7											1.5
8	SAND, medium to fine grained, brown [maybe fill] (SP)	COARSE ALLUVIUM ~~OR FILL~~									
	END OF BORING OBSTRUCTED AT 8'										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-8' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/22/04**								
CC: **BT** CA: **AZ** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-10 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
	6" CONCRETE										
1											0.5
2				M	MC	40					
3	FILL, sandy lean clay, brown to dark brown	FILL									1.0
4											
5											1.0
6				M	MC	46					
7											1.0
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									0.5
10				M	MC	40					
11											0.5
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**
BORING COMPLETED: **12/22/04**							
CC: **BT** CA: **AZ** Rig: **77**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-11 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	14" CONCRETE										0.0
2				M	MC	30					
3	FILL, mostly sand, medium grained, sandy lean clay	FILL									0.0
4											
5											1.0
6				M	MC	30					
7											0.5
8											
9	SAND, medium to fine grained, brown (SP)	COARSE ALLUVIUM									0.0
10				M	MC	36					
11											0.0
12	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-12' Geoprobe	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
			None	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **12/22/04**								
CC: **BT** CA: **AZ** Rig: 77								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-12 (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

SURFACE ELEVATION: **Not Determined**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1											0.4
2				F/M	MC	48					
3											0.3
4											
5											0.6
6	FILL, mostly silty sand with gravel, some dark organic at about 2' to 2½', possible cinders, brown and black, frozen to 2½'	FILL		M	MC	48					
7											0.5
8											
9											0.4
10				M	MC	36					
11											0.3
12	LEAN CLAY, brown (CL)	FINE ALLUVIUM									
	END OF BORING										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-12' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**
BORING COMPLETED: **2/22/05**							
CC: **PS** CA: **BT** Rig: **77**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **GP-13 (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1											0.5
2	FILL, mostly silty sand with gravel and some sandy clay, black	FILL		F/M	MC	48					
3											0.4
4	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-4' Geoprobe	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
			None	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **PS** CA: **BT** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **HA-1 (p. 1 of 1)**

PROJECT: **So. Mpls. Apt. Project near E43rd St & Snelling Ave.; Mpls, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	FILL, mostly silty sand with gravel, brown to dark brown	FILL		M	HA						0.0
2											0.0
	END OF HAND AUGER										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-2½' Hand Auger			**None**	**Taken**	**Refer To**	**"MC"**	**Column**
BORING COMPLETED: **12/22/04**							
CC: **BT** CA: **AZ** Rig:							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **HA-1A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1 – 2	NOT SAMPLED REFER TO LOG OF BORING NO. HA-1										
3 – 4	POORLY GRADED SAND WITH GRAVEL, brown (SP) [may be fill]	COARSE ALLUVIUM OR FILL		M	HA						3.2
4 – 5				M	HA						22.3
5 – 6	POORLY GRADED SAND WITH GRAVEL, brown (SP)	COARSE ALLUVIUM		M	HA						0.4
6 – 7				M	HA						0.5
7	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-7' Hand Auger			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **AZ** CA: **BT** Rig:								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **1 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

SURFACE ELEVATION: **100.4**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	4.5" Bituminous pavement			F	SU						0.1
	5" Crushed limestone base, brown	FILL		F	SU						
2	FILL, mostly sandy lean clay, a little gravel, dark brown to brown, frozen to 1.5'			F	SU						
3	SILTY SAND, fine grained, brown, moist, loose (SM)	COARSE ALLUVIUM	6	M	SS	18					0.3
4	LEAN CLAY WITH SAND, brown, firm, a lense of fat clay (CL)	FINE ALLUVIUM									
5			10	M	SS	15					0.7
6	SAND WITH SILT, fine grained, brown, moist, loose (SP-SM)										
7											
8	SAND, a little gravel, fine to medium grained, light brown, moist, loose to medium dense (SP)		6	M	SS	16					0.6
9											
10			13	M	SS	8					0.1
11											
12											
13			13	M	SS	10					0.0
14											
15	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP)	COARSE ALLUVIUM	27	M	SS	14					
16											
17											
18											
19											
20	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)		18	M	SS	16					
21											
22											
23											
24	SAND WITH GRAVEL, medium to fine grained, brown, moist, medium dense (SP)										
25			14	M	SS	18					
26	CLAYEY SAND, a little gravel, brown, stiff (SC)										
27											
28		TILL									
29	CLAYEY SAND, a little gravel, gray, stiff (SC)										
30			9	M	SS	18					
31	**END OF BORING**										

DEPTH: DRILLING METHOD

0-29½' 3.25" HSA

BORING COMPLETED: **1/4/05**

CC: **DS** CA: **BL** Rig: **33C**

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
1/4/05	**11:50**	**31.0**	**29.5**	**30.4**		**None**

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **2 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: 98.7 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
0	1.5" FILL, mostly silty sand with gravel and pieces of bituminous, dark brown, frozen	FILL		F	SU						0.0
1	4" Crushed limestone base, brown, frozen	FILL OR FINE ALLUVIUM		F	SU						
2	FILL, mostly lean clay, brown, frozen to 1"			M	SU						
3	LEAN CLAY, light brown, stiff to very stiff, lenses of fat clay (CL)	FINE ALLUVIUM	11	M	SS	22					0.0
5	SAND, fine to medium grained, light brown, moist, medium dense (SP)		22	M	SS	16					0.1
7			17	M	SS	16					0.0
9	SAND, a little gravel, fine to medium grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	15	M	SS	16					0.1
12			19	M	SS	18					0.0
15			36	M	SS	16					0.0
19	CLAYEY SAND, a little gravel, gray, a little brown mottled, stiff (SC)		12	M	SS	18					0.0
20	CLAYEY SAND, a little gravel, gray, stiff (SC)	TILL			TW	22	14	123.8			
24				M							
25	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, dense (SP)		32	▼	SS	8					0.1
28		COARSE ALLUVIUM									
29	SAND, fine to medium grained, brown, waterbearing, medium dense (SP)		19	W	SS	12					0.0
31	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-29½' 3.25" HSA	**1/3/05**	**1:35**	**31.0**	**29.5**	**27.9**		**26.1**
	1/4/05	**10:25**	**31.0**	**29.5**	**27.5**		**26.1**
BORING COMPLETED: **1/4/05**							
CC: **DS** CA: **BL** Rig: **33C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **3 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: 99.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	5" Crushed limestone base, brown, frozen FILL, mostly lean clay, a little gravel, dark brown, frozen to 1'	FILL FILL OR TOPSOIL		F	SU						0.0
3	LEAN CLAY, light brown, stiff, lenses of fat clay (CL)	FINE ALLUVIUM	9	M	SS	20					
5	SAND, fine grained, light brown, moist, medium dense (SP)		22	M	SS	12					0.0
8	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)	COARSE ALLUVIUM	20	M	SS	14					0.1
10			13	M	SS	15					0.0
13			22	M	SS	16					0.0
15	GRAVELLY SAND, fine to medium grained, brown, moist, medium dense (SP/GP)		19	M	SS	16					0.0
20	CLAYEY SAND, a little gravel, brown, very stiff (SC)	TILL	19	M	SS	16					0.0
25	SAND, a little gravel, fine to medium grained, brown, moist to about 27' then waterbearing, medium dense to dense (SP)	COARSE ALLUVIUM	24	M	SS	14					0.0
30			41	W	SS	16					0.0
31	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-29½' 3.25" HSA	**1/3/05**	**12:05**	**31.0**	**29.5**	**28.0**		**26.9**
BORING COMPLETED: **1/3/05**							
CC: **DS** CA: **BL** Rig: **33C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **4 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: 99.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	FILL, mostly silty sand with gravel and pieces of concrete, brown	FILL									
2	4" Gravel base, brown, frozen	TOPSOIL		F	SU						0.0
3	LEAN CLAY, dark brown, frozen to 1' (CL)										
4	LEAN CLAY, brown mottled, stiff, lenses of fat clay (CL)		11	M	SS	14					0.0
5	LEAN CLAY, light brown, stiff, lenses of fat clay (CL)	FINE ALLUVIUM									
6			11	M	SS	20	34				0.0
7											
8	SAND, fine to medium grained, light brown, moist, medium dense (SP)		21	M	SS	16					0.0
9											
10			22	M	SS	15					0.0
11											
12	SAND WITH GRAVEL, fine to medium grained, brown, moist, medium dense (SP)										
13			25	M	SS	14					0.0
14											
15	SAND, a little gravel, fine to medium grained, brown, moist to about 26.5' then waterbearing, medium dense (SP)	COARSE ALLUVIUM	22	M	SS	14					0.0
16											
17											
18											
19											
20			18	M	SS	14					0.0
21											
22											
23											
24											
25			27	M/W ▼	SS	16					0.1
26											
27											
28											
29	GRAVELLY SAND, fine to medium grained, brown, waterbearing, dense (SP)										
30			47	W	SS	16					0.0
31	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-29½' 3.25" HSA	**1/3/05**	**10:55**	**31.0**	**29.5**	**27.8**		**26.4**
BORING COMPLETED: **1/3/05**							
CC: **DS** CA: **BL** Rig: **33C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **5 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

SURFACE ELEVATION: **100.7**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
0	2.5" Bituminous pavement			F	SU						0.0
1	4.5" Crushed limestone base, light brown, frozen to 7"	FILL		M	SU						
2	FILL, mostly sandy lean clay, a little gravel, dark gray	TOPSOIL OR FINE			SU						
3	LEAN CLAY, dark brown, stiff (CL)		15	M	SS	18					0.4
4	LEAN CLAY, brown mottled, stiff (CL)	FINE ALLUVIUM									
5	LEAN CLAY, light brown, stiff, lenses of fat clay (CL)										
6			10	M	SS	18					0.0
7											
8	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)		20	M	SS	18					0.0
9											
10											
11	SAND, a little gravel, medium to fine grained, brown, moist, medium dense (SP)		15	M	SS	18					
12											
13			11	M	SS	18					
14											
15	GRAVELLY SAND, fine to medium grained, brown, moist, very dense (SP)	COARSE ALLUVIUM	55	M	SS	10					
16											
17											
18											
19											
20	SAND WITH GRAVEL, medium to fine grained, light brown, moist, dense to medium dense (SP)		39	M	SS	15					
21											
22											
23											
24											
25			29	M	SS	15					
26											
27											
28				▼							
29	SAND, fine to medium grained, light brown, waterbearing, medium dense (SP)										
30			29	W	SS	18					
31	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-29½' 3.25" HSA	**12/29/04**	**12:40**	**31.0**	**29.5**	**28.7**		**28.1**	
BORING COMPLETED: **12/29/04**								
CC: **DS** CA: **BL** Rig: **33C**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **6 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: 100.9 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
1	2.5" Bituminous pavement 6.5" Crushed limestone base, light brown, frozen to 9"	FILL		F M	SU SU SU						0.0
2	FILL, mostly lean clay, dark gray										
3	LEAN CLAY, black to dark brown (CL)		15	M	SS	20					0.0
4	LEAN CLAY, dark brown and brown mottled to brown, stiff (CL)	FINE ALLUVIUM									
5											
6	LEAN CLAY, light brown, firm, laminations of fat clay (CL)		8	M	SS	20	32				0.0
7											
8	SAND WITH SILT, fine to medium grained, brown, moist, medium dense (SP-SM)		20	M	SS	18					0.0
9											
10			15	M	SS	16					0.0
11	SAND, fine to medium grained, light brown, moist, loose, a lense of lean clay at about 13.5' (SP)										
12											
13			5	M	SS	16					0.0
14											
15			40	M	SS	16					
16	GRAVELLY SAND, fine to medium grained, brown, moist, dense (SP)	COARSE ALLUVIUM									
17											
18											
19											
20			26	M	SS	16					
21	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense to dense (SP)										
22											
23											
24											
25			32	M	SS	16					
26											
27											
28				▼							
29	SAND, fine to medium grained, brown, moist to about 28.5' then waterbearing, dense (SP)										
30			33	W	SS	16					
31	**END OF BORING**										

DEPTH: DRILLING METHOD **0-29½' 3.25" HSA**

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
12/29/04	**2:00**	**31.0**	**29.5**	**28.7**		**28.5**

BORING COMPLETED: **12/29/04**

CC: **DS** CA: **BL** Rig: **33C**

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **6A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1	FILL, mostly class 5 gravel	FILL									0.2
2	ORGANIC LEAN CLAY, black (OL)	TOPSOIL		F/M	MC	48					
3											0.3
4	LEAN CLAY, brown (CL)	WEATHERED SOIL OR FINE ALLUVIUM		M	MC	36					0.2
5											
6	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-6' Geoprobe	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
			None	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **PS** CA: **BT** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 03-02255 LOG OF BORING NO. 7 (p. 1 of 1)

PROJECT: Proposed South Minneapolis Apartment Project; Minneapolis, MN

SURFACE ELEVATION: 100.6

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
0	2.75" FILL, mixture of weathered bituminous and silty sand, black	FILL		F	SU						0.4
1	3.75" Crushed limestone base, light brown, frozen to 7"	TOPSOIL		F	SU						
2	LEAN CLAY, black (CL/OL)			M	SU						
3	LEAN CLAY, gray and brown mottled, firm (CL)	FINE ALLUVIUM	8	M	SS	22					0.0
4	LEAN CLAY, brown, firm (CL)										
5	SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)		16	M	SS	18					0.0
6											
7	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)										
8			11	M	SS	18					0.0
9											
10			12	M	SS	20					0.0
11											
12			15	M	SS	18					0.0
13											
14	SAND WITH GRAVEL, possible cobbles, medium to coarse grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	28	M	SS	18					
15											
16											
17											
18											
19											
20			28	M	SS	14					
21											
22											
23	SAND, a little gravel, medium to fine grained, light brown, moist to about 28' then waterbearing, dense to medium dense (SP)										
24											
25			33	M	SS	18					
26											
27				▼							
28											
29											
30			26	W	SS	1					
31	**END OF BORING**										

DEPTH:	DRILLING METHOD
0-29½'	3.25" HSA

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
12/30/04	10:50	31.0	29.5	28.5		27.9

BORING COMPLETED: 12/30/04

CC: DS CA: BL Rig: 33C

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **7A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
	FILL, mostly class 5 gravel, tan, frozen to 2½'	FILL									0.2
1	ORGANIC CLAY, black (OL)	TOPSOIL									
2				F/M	MC	48					
3	LEAN CLAY, brown (CL)	FINE ALLUVIUM									0.2
4											
5	POORLY GRADED SAND, fine grained, brown (SP)	COARSE ALLUVIUM		M	MC	30					0.2
6	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-6' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**	
BORING COMPLETED: **2/22/05**								
CC: **PS** CA: **BT** Rig: **77**								

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **8 (p. 1 of 1)**

PROJECT: **Proposed South Minneapolis Apartment Project; Minneapolis, MN**

SURFACE ELEVATION: **100.5**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	PID (ppm)
0	1.25" Bituminous pavement	FILL		F	SU						0.0
1	3.5" Crushed limestone base, light brown, frozen"	TOPSOIL		F	SU						
2				M	SU						
3	FILL, mostly sandy lean clay, grayish brown, frozen	FINE ALLUVIUM	19	M	SS	18					0.0
4	LEAN CLAY, black, frozen to 1' (CL/OL)										
5	FAT CLAY, brown, very stiff (CH)										
6	SAND WITH SILT, fine to medium grained, brown, moist, loose (SP-SM)		9	M	SS	16					0.0
7											
8	SAND, a little gravel, fine to medium grained, brown, moist, loose to medium dense (SP)		10	M	SS	20					0.0
9											
10			17	M	SS	12					0.0
11											
12	SAND, a little gravel, medium to coarse grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	17	M	SS	16					0.0
13											
14											
15	GRAVELLY SAND, fine to medium grained, brown, moist, dense (SP)		49	M	SS	12					
16											
17											
18											
19	CLAYEY SAND, a little gravel, brown, very stiff (SC)										
20			21	M	SS	18					
21											
22											
23	CLAYEY SAND, a little gravel, gray, stiff (SC)	TILL									
24											
25			10	M	SS	22					
26											
27				▼							
28					TW	0					
29	SAND, a little gravel, medium to fine grained, brown, waterbearing, medium dense (SP)	COARSE ALLUVIUM									
30			14	W	SS	18					
31	**END OF BORING**										

DEPTH: DRILLING METHOD

0-29½' 3.25" HSA

BORING COMPLETED: **1/3/05**

CC: **DS** CA: **BL** Rig: **33C**

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
1/3/05	**9:35**	**31.0**	**29.5**	**28.5**		**27.5**

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **03-02255** LOG OF BORING NO. **8A (p. 1 of 1)**

PROJECT: **South Minneapolis Apartment Project; Minneapolis, MN**

DEPTH IN FEET	SURFACE ELEVATION: **Not Determined** MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	XRF	PID (ppm)
1 – 2 –	FILL, mostly silty sand with gravel, light brown and dark brown, frozen to 2½'	FILL		F/M	MC	48					0.5
3 –	ORGANIC CLAY, black (OL)	TOPSOIL									0.5
4 –	LEAN CLAY, brown (CL)	WEATHERED SOIL									
5 –	POORLY GRADED SAND, fine to medium grained, brown (SP)	COARSE ALLUVIUM		M	MC	24					0.4
6 –	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-6' Geoprobe			**None**	**Taken**	**Refer To**	**"MC"**	**Column**
BORING COMPLETED: **2/22/05**							
CC: **PS** CA: **BT** Rig: **77**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG