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**EXCAVATION REPORT FOR
PETROLEUM RELEASE SITE
MN/DOT FACILITY
FRANCE AVENUE TRUCK STATION
3905 WEST 80TH STREET
BLOOMINGTON, MINNESOTA
MPCA LEAK #6243**

NOVA PROJECT NO.: M93-291

August 11, 1993

Prepared for:

**MINNESOTA DEPARTMENT OF
TRANSPORTATION
ENVIRONMENTAL SERVICES SECTION
TRANSPORTATION BUILDING, ROOM 124
395 JOHN IRELAND BOULEVARD
ST. PAUL, MN 55155**

Prepared by:

**NOVA ENVIRONMENTAL SERVICES, INC.
1107 HAZELTINE BOULEVARD, SUITE 400
CHASKA, MINNESOTA 55318
(612) 448-9393**



S.B. Cummings
President
J.E. Findley
Chief Executive Officer

August 11, 1993

Mr. Brian Kamnikar
Minnesota Department of Transportation
Environmental Services Section
Transportation Building, Room 124
395 John Ireland Boulevard
St. Paul, MN 55155

RE: EXCAVATION REPORT FOR
PETROLEUM RELEASE SITE
MN/DOT FACILITY
BLOOMINGTON, MINNESOTA
NOVA PROJECT NO.: M93-291
MPCA LEAK #6243

Dear Mr. Kamnikar:

INTRODUCTION

Nova Environmental Services, Inc. (Nova) is submitting the enclosed Excavation Report for Petroleum Release Sites for the MN/DOT France Avenue Truck Station facility located at 3905 West 80th Street in Bloomington, Minnesota (Figure 1). A representative of Nova was present at this site on April 23 and 26, 1993 to observe the removal of three underground storage tanks (USTs): a 460 gallon used oil UST, a 10,000 gallon diesel fuel UST and a 6,000 gallon gasoline UST. The tanks were located at two separate locations on the site (Figures 2 and 3).

UST REMOVAL

The USTs were removed using a backhoe operated by MN/DOT personnel. The USTs exhibited slight to moderate corrosion. No holes were observed in the USTs.

The tanks and piping were disposed of by Solberg Bros. of Clearwater, Minnesota.

M93-291R.001VH2

an equal opportunity employer

Suite 400 Hazeltine Gates 1107 Hazeltine Boulevard Chaska, MN 55318
612/448-9393 FAX 448-9572

SOIL MONITORING AND SAMPLING

The excavated soil and the soil exposed along the sidewalls and bottom of the two UST excavations were monitored for the presence of organic vapors with an HNU photoionization detector (PID), in accordance with MPCA guidelines for headspace screening. The PID was equipped with a 10.2 eV bulb, and was calibrated to an isobutylene standard. Vapor sample locations are shown in Figures 2 and 3.

Soil samples were also collected for laboratory analysis. Soil samples were placed in containers supplied by the contract laboratory, and were kept on ice in a cooler in the field and during transportation to the laboratory. The soil samples were analyzed by Twin City Testing Corporation of St. Paul, Minnesota. For each soil sample, testing parameters included some combination of the following:

- Diesel Range Organics
- Gasoline Range Organics
- Benzene, Ethyl Benzene, Toluene, Xylenes (BETX)
- Methyl Tertiary Butyl Ether (MTBE)
- Volatile Organic Compounds (VOCs) by Minnesota Department of Health (MDH) Method 456D
- RCRA Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)
- Polychlorinated Biphenyls (PCBs)

Used Oil UST:

Petroleum-impacted soil was observed adjacent to the fill pipe and removal pipe associated with the used oil tank. The impacted soil was limited to the area on top of the UST. Approximately 15 cubic yards of petroleum-impacted soil was excavated and stockpiled on the site. PID readings ranged from 4 to 11 ppm. Organic vapors were not detected in soil samples collected from the final base and sidewalls of the excavation.

DRO was detected at a concentration of 20,000 ppm in the soil sample from the used oil UST stockpile. DRO was not detected in soil samples collected from the base and sidewalls of the excavation.

PCBs (2 ppm), and 11 VOCs (0.017 to 0.340 ppm) were detected in the soil sample collected from the used oil UST stockpile. These analytes were not detected in soil samples collected from the base of the excavation.

Barium, chromium and lead were detected in soil samples collected from the used oil UST stockpile and from the base of the used oil UST excavation. The metal concentrations (2.7 to 42 ppm) were within ranges characteristic of natural soils (Table 1).

Based on field observations, organic vapor monitoring results, and laboratory data, total excavation of impacted soil was achieved for the used oil UST excavation.

Diesel Fuel UST:

Petroleum-impacted soil was detected adjacent to the bottom of the east end of the diesel fuel UST. The diesel and gasoline dispensers were located near the east end of the tanks. Organic vapor readings ranged from 2 to 11 ppm. Organic vapors were either not detected or below 5 ppm in soil samples collected from the final base and sidewalls of the diesel fuel UST excavation.

Approximately 150 cubic yards of petroleum-impacted soil was excavated from the combined diesel fuel UST/gasoline UST excavation.

DRO was detected at a concentration of 290 ppm in a sample collected from the combined diesel fuel UST/gasoline UST excavation stockpile. DRO was not detected in soil samples collected from the base and sidewalls of the diesel fuel UST excavation.

Based on field observations, organic vapor monitoring results, and laboratory data, total excavation of impacted soil was achieved for the diesel fuel UST excavation.

Gasoline UST:

A concrete pad was present beneath the gasoline UST. Petroleum-impacted soil was detected around the gasoline UST and around the perimeter of the pad. Based on field screening, organic vapor concentrations ranged from 1 to 120 ppm. Petroleum-impacted soil was excavated from around the concrete pad, to a depth approximately 2 feet below the upper surface of the pad. Organic vapors were not detected in soil samples collected from the final base (perimeter of the concrete pad) and sidewalls of the gasoline tank excavation.

Petroleum-impacted soil from the gasoline UST excavation was added to the combined diesel fuel UST/gasoline UST excavation stockpile described above.

GRO was detected at a concentration of 14 ppm in a sample collected from the combined diesel fuel UST/gasoline UST stockpile. GRO was not detected in soil samples collected from the base and sidewalls (perimeter of the concrete pad) of the gasoline UST excavation. Neither BETX nor MTBE were detected in any of the soil samples collected from the gasoline UST excavation.

Based on field observations, organic vapor monitoring results, and laboratory data, total excavation of impacted soil was achieved for the gasoline UST excavation.

MN/DOT personnel contacted the Minnesota Pollution Control Agency (MPCA) on April 26, 1993 to report the release.

GROUND WATER OBSERVATIONS

Ground water was not observed in either of the tank excavations. The waste oil UST excavation extended to a depth of approximately 7 feet below grade. The diesel fuel UST/gasoline UST excavation extended to a depth of approximately 14 feet below grade.

CONCLUSIONS AND RECOMMENDATIONS

Evidence of a petroleum release was observed during the removal of three USTs on April 26, 1993 at the MN/DOT France Avenue Truck Station facility located in Bloomington, Minnesota. Approximately 15 cubic yards of petroleum-impacted soil were stockpiled from the used oil UST excavation. Laboratory analysis of soil from the used oil UST stockpile detected DRO, PCBs and 11 VOCs. Metals were detected at concentrations characteristic of natural soils. Approximately 150 cubic yards of petroleum-impacted soil were stockpiled from the combined diesel fuel UST/gasoline UST excavation. Laboratory analysis of the stockpiled soil from this excavation detected DRO and GRO. DRO, GRO, PCBs and VOCs were not detected in soil samples obtained from the bases and sidewalls of the two excavations. Metals detected in soil samples from the excavation bases and sidewalls were within the ranges expected in natural soils.

Stockpiled soil will be moved to an off-site location for bioremediation, pending MPCA approval.

Total excavation of petroleum-impacted soil was achieved in both excavations. Ground water was not encountered in either excavation. Ground water impacts are not anticipated from the three USTs removed.

No further investigative or corrective actions are warranted at this site.

If you have any questions regarding this report, please contact us at (612) 448-9393.

Sincerely,

NOVA ENVIRONMENTAL SERVICES, INC.



Andrew G. Graham
Environmental Scientist



Eric P. Hedblom
Staff Geologist
AGG/EPH:glb

EXCAVATION REPORT FOR PETROLEUM RELEASE SITES

Fact Sheet #4

Minnesota Pollution Control Agency

LUST Cleanup Program

April 1993

Complete the information below and submit to the Minnesota Pollution Control Agency (MPCA) Tanks and Spills Section to document excavation and treatment of petroleum contaminated soil. Conduct excavations in accordance with "Excavation of Petroleum Contaminated Soil" (fact sheet #13). Please attach any available preliminary site investigation reports to this excavation report.

Attach additional pages if necessary. Please type or print clearly.

The Excavation reporting deadline is 10 months from the date of receipt of the standard letter. A shorter deadline may be established by MPCA staff for high priority sites.

I. BACKGROUND

A. *Site:* MN/DOT France Avenue Truck Station

Street: 3905 West 80th Street
City, Zip: Bloomington, MN 55437
County: Hennepin

MPCA Site ID#: 6243

B. *Tank Owner/Operator:* MN/DOT

Mailing Address: Environmental Services Section
Transportation Building, Rm 124
Street/Box: 395 John Ireland Blvd.
City/Zip: St. Paul, MN 55155
Telephone: 297-2703

C. *Excavating Contractor:* MN/DOT

Contact: Cal Lucas
Telephone: 582-1420
Tank Contractor
Certification Number: 0078

D. *Consultant:* Nova Environmental Services

Contact: Eric P. Hedblom
Street/Box: 1107 Hazeltine Blvd.
City, Zip: Chaska, MN
Telephone: (612) 448-9393

E. *Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.):* N/A

Note: *If person other than tank owner and/or operator is conducting the cleanup, provide name, address, and relationship to site on a separate attached sheet.*

II. DATES

A. *Date release reported to MPCA:* April 26, 1993

B. *Dates site work performed:*

Work Performed

Date

Excavation and Removal of Three USTs April 23 and 26, 1993

III. RELEASE INFORMATION

A. Provide the following information for all removed tanks.

Tank 1: *Capacity:* 460 Gallons
 Type: Steel
 Age: Unknown
 Condition: Slight corrosion, no holes

Product History: Used Oil

Approximate quantity of petroleum released, if known: Unknown

Cause of release: Leakage from fill pipe and used oil removal pipe

Tank 2: *Capacity:* 10,000 gallons
 Type: Steel
 Age: 1967
 Condition: Slight corrosion, no holes

Product History: Diesel Fuel

Approximate quantity of petroleum released, if known: Unknown

Cause of release: Unknown

Tank 3: *Capacity:* 6,000 gallons
 Type: Steel
 Age: 1967
 Condition: Moderate corrosion, no holes

Product History: Gasoline

Approximate quantity of petroleum released, if known: Unknown

Cause of release: Unknown

B. Provide the following information for all existing tanks.

<i>Tank Number</i>	<i>Capacity</i>	<i>Contents</i>	<i>Type</i>	<i>Age</i>
4	10,000 gallon	Diesel	Fiberglass	1992
5	8,000 gallon	Gasohol	Fiberglass	1992

C. If the release was associated with the lines or dispensers, briefly describe the problem:

Release from the used oil tank appeared to be related to the fill and removal piping. Impacted soil was found only adjacent to the fill and removal pipes.

D. If the release was a surface spill, briefly describe the problem:

N/A

IV. EXCAVATION

A. Dimensions of excavation: Tank 1: 13' Long x 6' Wide x 7' Deep
Tanks 2-3: 35' Long x 30' Wide x 14' Deep

B. Original tank backfill material (sand, gravel, etc.): Sand

C. Native soil type (clay, sand, etc.): Sand and Gravel

D. Quantity of contaminated soil removed (cubic yards): Tank 1: 15 c.y.
Tanks 2-3: 150 c.y. 150

[Note: If more than 400 cubic yards removed, please attach copy of written approval from MPCA.]

E. Was ground water encountered or was there evidence of seasonally high ground water table? At what depth?

No

F. If a soil boring was required (see fact sheet #13, "Excavation of Petroleum Contaminated Soil", "Part VI Additional Investigation) describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report.

N/A

G. If no soil boring was required, explain.

Total excavation of petroleum-impacted soil was achieved for all three USTs.

[Note: If free product was observed, contact MPCA staff immediately as outlined in "Petroleum Tank Release Reports" (Guidance Document 2).]

H. *If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? Specify, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc.*

N/A

[Note: If free product was observed, contact MPCA staff immediately as outlined in "Petroleum Tank Release Reports" (fact sheet #3). Also consult fact sheet #18, "Free Product: Evaluation and Recovery].

I. *Was bedrock encountered in the excavation? At what depth?*

No

J. *Were other unique conditions associated with this site? if so, explain.*

N/A

V. SAMPLING

A. *Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil:*

Headspace screening with HNU PID, in accordance with MPCA guidance.

B. List soil vapor headspace analysis results. Indicate sampling locations using sample codes (with sampling depths in parentheses), e.g. R-1 (2 feet), R-2 (10 feet), etc. "R" stands for "removed". Samples collected at different depths at the same location should be labeled R-1A (2 feet), R-1B (4 feet), R-1C (6 feet), etc. If the sample was collected from the sidewall or bottom after excavation was complete, label it S-1 (for sidewall) or B-1 (for "bottom"). Be sure the sample codes correspond with the site map required in Part VI, below.

<u>Sample Code</u>	<u>Soil Type</u>	<u>Reading ppm</u>	<u>Bottom/Sidewall</u>	<u>Sample Code</u>	<u>Soil Type</u>	<u>Reading ppm</u>	<u>Bottom/Sidewall</u>
SV-1	Sand	11	Stockpile	SV-19	Sand	14	Removed
SV-2	Sand	ND	Removed	SV-20	Sand	60	Removed
SV-3	Sand	ND	Removed	SV-21	Sand	20	Removed
SV-4	Sand	ND	Removed	SV-22	Sand	ND	Removed
SV-5	Sand	4	Stockpile	SV-23	Sand	ND	Bottom
SV-6	Sand	ND	Bottom	SV-24	Sand	10	Removed
SV-7	Sand	ND	Bottom	SV-25	Sand	ND	Bottom
SV-8	Sand	ND	Sidewall	SV-26	Sand	120	Sidewall
SV-9	Sand	ND	Sidewall	SV-27	Sand	ND	Sidewall
SV-10	Sand	ND	Sidewall	SV-28	Sand	ND	Bottom
SV-11	Sand	11	Removed	SV-29	Sand	10	Removed
SV-12	Sand	5	Removed	SV-30	Sand	ND	Bottom
SV-13	Sand	4	Removed	SV-31	Sand	ND	Bottom
SV-14	Sand	3.5	Removed	SV-32	Sand	ND	Bottom
SV-15	Sand	2	Removed	SV-33	Sand	ND	Sidewall
SV-16	Sand	2	Removed	SV-34	Sand	ND	Sidewall
SV-17	Sand	1	Removed	SV-35	Sand	ND	Sidewall
SV-18	Sand	4	Removed	Sv-36	Sand	ND	Sidewall

C. Briefly describe the soil sampling and handling procedures used:

Soil samples intended for laboratory analysis were placed in laboratory-supplied glassware and were kept on ice in a cooler in the field and during transportation to the laboratory. Dedicated vinyl gloves were used for collection of each sample.

D. List below the soil sample analytical results from bottom and sidewall samples (i.e., soils, left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), etc. Be sure the sample codes correspond to the site map required in part Vi. Do not include analyses from the stockpiled soils.

<u>Sample Code</u>	<u>GRO/DRO ppm</u>	<u>Ethyl-Benzene ppm</u>	<u>Benzene ppm</u>	<u>Toluene ppm</u>	<u>Xylene ppm</u>	<u>MTBE ppm</u>	<u>Lead ppm</u>
SS-3	ND	ND	ND	ND	ND	ND	3.2
SS-4	ND	ND	ND	ND	ND	ND	3.3
SS-5	ND	NA	NA	NA	NA	NA	NA
SS-6	ND	NA	NA	NA	NA	NA	NA
SS-7	ND	NA	NA	NA	NA	NA	NA
SS-9	ND	ND	ND	ND	ND	ND	NA
SS-11	ND	ND	ND	ND	ND	ND	NA
SS-12	ND	ND	ND	ND	ND	ND	NA
SS-13	ND	ND	ND	ND	ND	ND	NA
SS-14	ND	NA	NA	NA	NA	NA	NA
SS-15	ND	NA	NA	NA	NA	NA	NA
SS-16	ND	NA	NA	NA	NA	NA	NA

ND = Not Detected
NA = Not Analyzed

NOTE: ATTACH COPIES OF LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS.

VI. FIGURES

Attach the following figures to this report:

1. *Site Location Map.*
2. *Site map(s) drawn to scale illustrating the following:*
 - a. *Location (or former location) of all present and former tanks, lines, and dispensers;*
 - b. *Location of other structures (buildings, canopies, etc.);*
 - c. *Adjacent city, township, or county roadways;*
 - d. *Final extent of excavation;*
 - e. *Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), and soil borings (e.g. SB-1). Also, attach all boring logs.*
 - f. *North arrow, bar scale and map legend.*

VII. SUMMARY

Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in part VI of "Excavation of Petroleum Contaminated Soil" (fact sheet #13). If no further action is recommended, the MPCA staff will review this report following notification of soil treatment.

Based on physical observations, organic vapor monitoring, and laboratory results, total excavation of petroleum-impacted soil was achieved for all three tanks. Ground water was not encountered in the excavations. Impacts to ground water are not anticipated. Further investigation or corrective action is not warranted.

VIII. SOIL TREATMENT INFORMATION

- A. *Soil treatment method used (thermal, land application, other). If you choose "other" specify treatment method:*

MN/DOT is planning to use bioremediation at an offsite location to treat the stockpiled soil, pending MPCA approval.

- B. *Location of treatment site/facility:*

The intended treatment site is the MN/DOT storage facility in Shoreview, Minnesota.

C. *Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):*

Pending

D. *Identify the location of any stockpiled contaminated soil:*

On-site.

IX. CONSULTANT (OR OTHER) PREPARING THIS REPORT

Company Names: Nova Environmental Services, Inc.
Street/Box: 1107 Hazeltine Boulevard, Suite 400
City/Zip: Chaska, MN 55318
Telephone: (612) 448-9393
Contact: Eric Hedblom

If additional investigation is not required at the site, please mail this form and all necessary attachments to:

*(Project Manager)
Minnesota Pollution Control Agency
Hazardous Waste Division
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155*

If additional investigation is required at the site, include this form as an appendix to the Remedial Investigation/Corrective Action Design Report. Excavation reports indicating a remedial investigation (RI) is necessary will not be reviewed by MPCA staff until the RI has been completed.

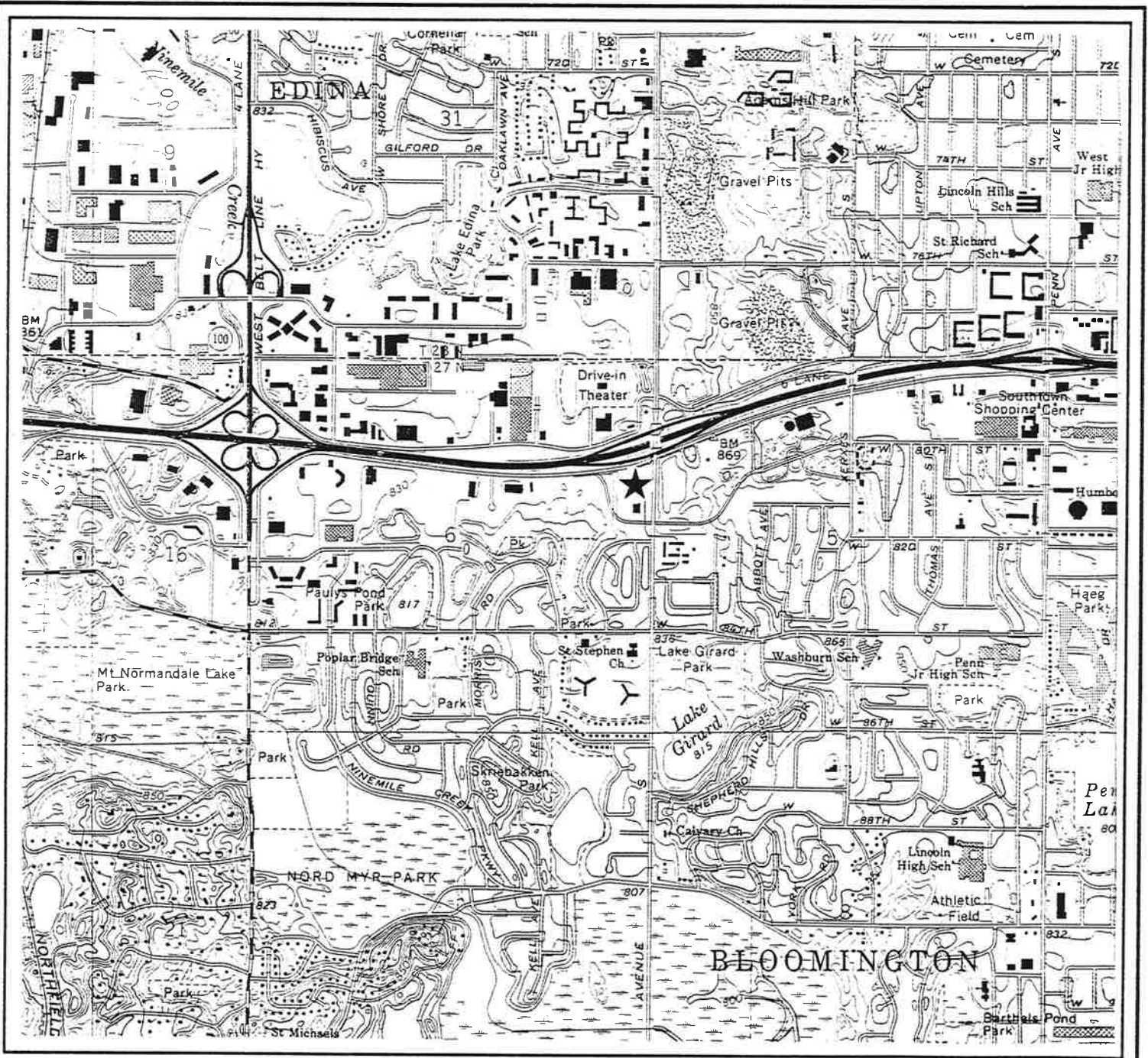
TABLE 1
TRACE CHEMICAL ELEMENT
CONTENT OF NATURAL SOIL
(ppm)

ELEMENT	SHIELDS, 1985	OVERCASH, 1979	PENDIAS, 1984
Arsenic	1-50 (5)	<1.0-93.2 (7)	---
Barium	100-3,000 (430)	100-3,000 (500)	10-3,000 (265-835)
Cadmium	0.01-0.7 (0.06)	0.01-0.7 (0.06)	0.41-0.57
Chromium	1-1,000 (100)	5-3,000 (100)	7-1,500 (50)
Lead	2-200 (10)	2-200 (10)	<10-70 (26)
Mercury	0.01-0.3 (0.03)	0.01-0.3 (0.03)	0.02-1.50 (0.17)
Selenium	0.1-2 (0.3)	0.01-2 (0.2)	<0.1-4.0 (0.31)
Silver	0.01-5 (0.05)	0.01-5 (0.1)	0.01-8

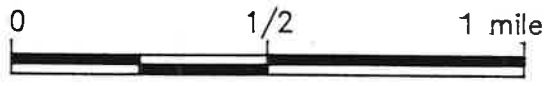
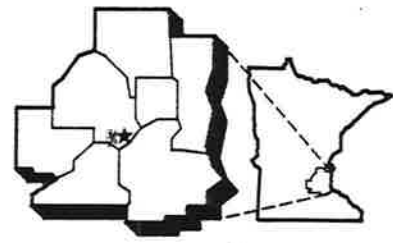
() = mean concentration

REFERENCES

- 1) Shields, E.J., 1985, Pollution Control Engineer's Handbook, Pudvan Publishing Company, Northbrook, Illinois.
- 2) Overcash, M.R. and Pal, D., 1979, Design of Land Treatment Systems for Industrial Wastes - Theory and Practice, Ann Arbor Science Publishers, Inc., Ann Arbor, Michigan.
- 3) Pendias, A.K. and Pendias, H., 1984, Trace Elements in Soils and Plants, CRC Press Inc., Boca Raton, Florida.



★ SITE LOCATION

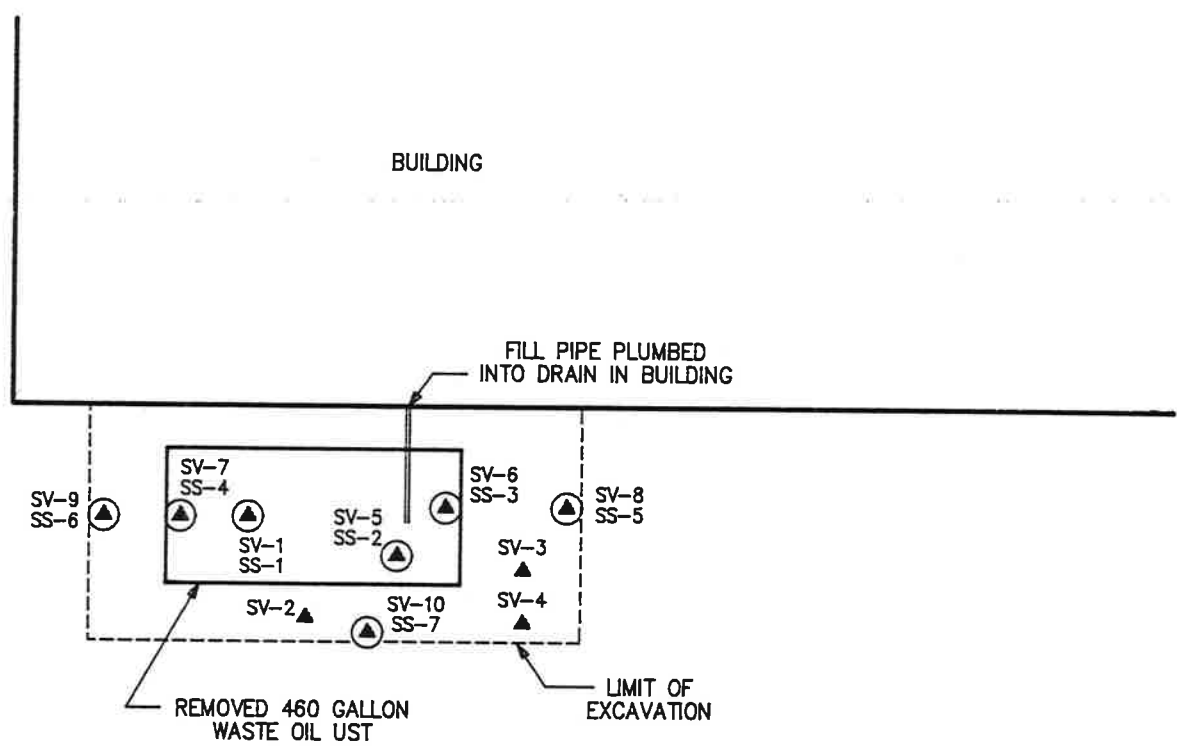


SCALE

SITE LOCATION MAP
 MN/DOT FRANCE AVENUE TRUCK STATION
 BLOOMINGTON, MINNESOTA



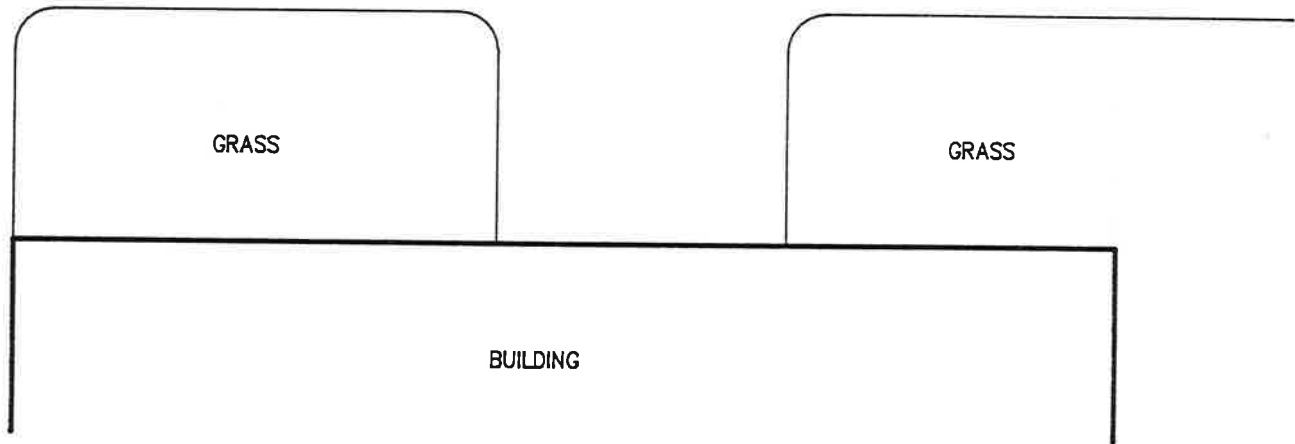
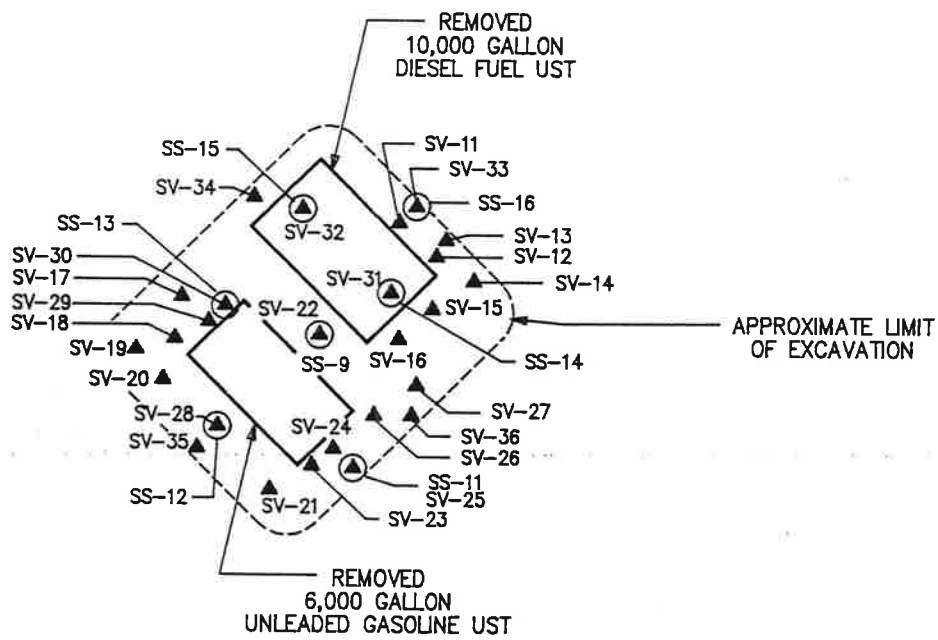
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WASTE OIL UST EXCAVATION DIAGRAM
 MN/DOT FRANCE AVENUE TRUCK STATION
 BLOOMINGTON, MINNESOTA

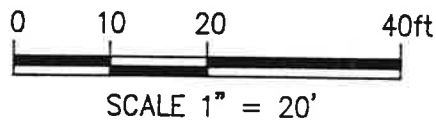
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KEY

- ▲ SOIL VAPOR
- SOIL SAMPLE



GASOLINE AND DIESEL FUEL UST EXCAVATION DIAGRAM
MN/DOT FRANCE AVENUE TRUCK STATION
BLOOMINGTON, MINNESOTA

M779/M93-291



