Preferred Id: 6312
Interest Name: HILLSBORO COURT APARTMENTS
Address: 2731 HILLSBORO AVE N

City: NEW HOPE
State: MN
Zip: 55427
Phone:

Interest Remarks

05/19/94: CSR - INADEQUATE. Failed to register tanks by 12/01/87. JS

06/15/94: CLM talked to Rob Goltz at Nova. I requested that they submit the second round of ground water samples.

1/12/96: SCT- Spoke with Rob Goltz at Nova. Requested that they advance a worst case boring through the old tank basin. They should take a water sample from the shallow perched zone, seal off the perched water and continue down until they reach clean soil (assumming that they fine unsaturated conditions below the perched layer. Rob will be confirming this conversation with a letter.

12/23/00: CLM talked with Ben Steinberg, he is a co-owner of the site (753-544-0007). He and the other owners took over the site in 1994. All of our correspondense has gone to the previous owner. Ben gave me the new contact and address for future correspondense. I faxed him a letter from Nova that outlined the additional work that needed to be completed at the site. Ben said he would then look into the matter.

3/21/01: CLM reviewed the additional site investigation. A worst case probe was advanced at the site. Soil samples were collected at 10 and 25 feet. A ground water sample could not be collected due to slow ground water rechanrge. The soil sample were non-detect for DRO and GRO. The site will be closed.

MINNESOTA POLLUTION CONTROL AGENCY
TANKS AND SPILLS SECTION
PETROLEUM TANK RELEASE REPORT

Report Taken By: EEB

Date/Time Occurred:

Date/Time Reported: 5/13/93

Date/Time Discovered: 5/13/93

LEAK# 6312 | **PROJECT MANAGER:** CLM | **USTIS #** 17611

CALLER
Name: Dave Gosen / Rob Goltz
Phone: 448-7343
Relationship to site:
Neva

SITE
Name: Hillsboro Court Apartments
Street: 2731 Hillsboro Ave. N.
City: New Hope Zip: 55427
County: Hennepin Region: M/S

TANK OPERATOR
Name:
Street:
City: Zip:
Contact Person:
Phone:

TANK OWNER
Name: Steven Scott Management Co.
Street: 6005 Wayzata Blvd
City: Mpls St.: Zip: 55416
Contact Person: Steve Schachtman
Phone: 544-5228

Own tanks/product/property?
Share in profits?
Control over inventory, maintenace and tank decisions?

SITUATION
Material Released/Amount: fuel oil

Source of Release: UST

Release Discovery: consultant told by Schachtman before 5/13/93

TANK INFORMATION

Contents	Size	Age	Removed	Condition	Registered
	8K #				

State or Federal
Notification prior to removal:
Excavation Contractor:
Consultant:

SOIL

5/10/93: Removal scheduled 5/12/93
5/13/93: " re- " 5/17/93

Contaminated soil excavated:
Was it a total excavation:
Vapor readings: ~70 ppm
Soil samples:
Borings:
Native soil type: clay
Stockpiled properly/disposal arranged:
Other:

WATER
Groundwater in excavation:

Free product present:

Depth to groundwater: 9-11'

City water/wells private/municipal:

Surface water:

VAPORS
Sewers/buildings:

SITE INFORMATION
Description of area:

Previous release(s):

INSTRUCTION GIVEN	**CONTACTS**
Hire consultant	Local Fire/Police
Submit report	Local Officials
Staff will call	Regional Staff
Contact staff	Other

CONCLUSIONS AND OTHER RELATED INFORMATION

5/13/93: Spoke w/ Rob Goltz (NOVA). Discovered the tank had been improperly abandoned in place. Fire Marshall was unaware of this and said the tank had to be removed. Removal rescheduled for 5/17/93. The tank is full of water and petroleum contaminated sand (70 ppm).

Tanks - Edwin

6312
CLM

MINNESOTA DUTY OFFICER INCIDENT REPORT

Report taken by: Bob-46 Date: 4-26-93 Time: 1304 Record #

CALLER

Name: Dave Gosen
Firm/Agency: Nova Environmental Services
Address: 1107 Hazeltine Blvd.
City: Chaska State: MN
County: Zip: 55318
Phone (Day): 612- 448-9393
Phone (Eve):

REPORTED SOURCE/RESPONSIBLE PARTY

Contact: Steve Schachtman
Firm/Agency: Stephen Scott Management Co.
Address: 6005 Wayzata Blvd.
City: Mpls State: MN
County: Zip: 55416
Phone (Day): 544-5228
Phone (Eve):

INCIDENT SPECIFICS Incident Date: 4-26-93 Time: morning hours
Location of Incident: Hillsboro Court Apartments, New Hope, Hennepin Co.
Legal: Section: Township: Range:
Material(s) and Quantity fuel oil contaminated soil, unk. amt.
Area Affected: Air / Surface Water / Ground Water / (Soil) / Asphalt / Concrete
Sanitary Sewer / Storm Sewer / Tile Line
Other Info on Affected Area:
General Description of Area: Urban / Rural / (Residential) / Commercial / Industrial
Has material escaped from facility or facility property? Yes / No / (Unknown)
Has the released material been contained? Yes / (No) / Unknown

Incident Narrative
(Spill) / Air Release / Equip Malfnct / Shutdown / Sewage Bypass / Dumping / Complaint
Unconfirmed report of underground tank leak at apartment complex. Property management Co. Contacted Nova and told them they have a leak. Nova to follow-up with tests.

Was there local emergency response to this incident? Yes / (No) / Unknown
IS THIS A BUSINESS OR GOVERNMENT FACILITY REPORTING IN COMPLIANCE WITH SARA TITLE III, SECTION 304? Yes / (No) / Unknown
(If YES, complete the SARA Title III Supplement)

DUTY OFFICER NOTIFICATIONS (Agency, Name, Time)	
PCA Edwin - Tanks	
PCA Tanks - (fax)	
SERC IO Mail	
FM IO Mail	

Minnesota Pollution Control Agency

March 29, 2001

Mr. Ben Steinberg
Hillsboro Court LLC
Golden Hills Office Center
701 Xenia Lane, Suite 250
Golden Valley, MN 55416

RE: Petroleum Tank Release Site File Closure
Site: Hillsboro Court Apartments 2731 Hillsboro Avenue, New Hope
Site ID#: LEAK00006312

Dear Mr. Steinberg:

We are pleased to let you know that the Minnesota Pollution Control Agency (MPCA) staff has determined that your investigation and/or cleanup has adequately addressed the petroleum tank release at the site listed above. Based on the information provided, the MPCA staff has closed the release site file.

Closure of the file means that the MPCA staff does not require any additional investigation and/or cleanup work at this time or in the foreseeable future. Please be aware that file closure does not necessarily mean that all petroleum contamination has been removed from this site. However, the MPCA staff has concluded that any remaining contamination, if present, does not appear to pose a threat to public health or the environment under current conditions.

The MPCA reserves the right to reopen this file and to require additional investigation and/or cleanup work if new information, changing regulatory requirements or changed land use make additional work necessary. If you or other parties discover additional contamination (either petroleum or nonpetroleum) that was not previously reported to the MPCA, Minnesota law requires that the MPCA be immediately notified.

You should understand that this letter does not release any party from liability for the petroleum contamination under Minn. Stat. ch. 115C (2000) or any other applicable state or federal law. In addition, this letter does not release any party from liability for nonpetroleum contamination, if present, under Minn. Stat. ch. 115B (2000), the Minnesota Superfund Law.

The monitoring wells for this site should be abandoned in accordance with the Minnesota Department of Health Well Code, Chapter 4725. If you choose to keep the monitoring wells, the Minnesota Department of Health will continue to assess a maintenance fee for each well.

Please note that as a result of performing the requested work you may be eligible to apply to the Petroleum Tank Release Compensation Fund (Petrofund) for partial reimbursement of the costs you have incurred in investigating and cleaning up this petroleum tank release. The Petrofund is administered by the Petroleum Tank Release Compensation Board (Petro Board) and the Minnesota Department of Commerce. To learn more about who is eligible for reimbursement, the type of work that is eligible for reimbursement, and the amount of reimbursement available, please contact Petrofund staff at 651/297-1119 or 1-800/638-0418.

If future development of this property or the surrounding area is planned, it should be assumed that petroleum contamination may still be present. If petroleum contamination is encountered during future development work, the MPCA staff should be notified immediately.

For specific information regarding petroleum contamination that may remain at this leak site, please call the Leaking Underground Storage Tank File Request Program at 651/297-8499. The MPCA fact sheet *Request to Bill for Services Performed* must be completed prior to arranging a time for file review.

Thank you for your response to this petroleum tank release and for your cooperation with the MPCA to protect public health and the environment. If you have any questions regarding this letter, please call me at 651/297-8580.

Sincerely,

Chris McLain
Project Manager
Site Remediation Section
Metro District

CLM:tf

cc: Valerie Leone, New Hope City Clerk
Dave Jaeger, Hennepin County Solid Waste Officer
Charles Losby, Nova Consulting Group
Mark Hoffman, Minnesota Department of Health
Minnesota Department of Commerce Petrofund Staff

Minnesota Pollution Control Agency

February 25, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Schachtman
Steve Scott Management
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope
Site ID# LEAK00006312

Dear Mr. Schachtman:

On May 13, 1993, the Minnesota Pollution Control Agency (MPCA) staff was notified that a release of petroleum occurred from storage tank facilities that you own and/or operate at the site referenced above.

This is to inform you that the MPCA staff has not received the information requested in our conversation with your consultant on January 12, 1996. In order for the MPCA staff to complete its review of your file, this information must be submitted within 150 days of receipt of this letter.

Please submit the requested report or respond in writing to indicate your intentions for further action at this site. If your response is not received by the MPCA within 30 days after receipt of this letter, MPCA staff will assume you do not intend to comply with this request. **In this event, the MPCA Commissioner will issue an order for you to take corrective action at the site**. If you do not comply with the Commissioner's order, it may be enforced in court or alternatively, the MPCA could spend its own money cleaning up the release and than seek to recover its costs from you through legal action. Other possible courses of action against responsible parties who refuse to cooperate with this agency include, but are not limited to, a reduction to future Petroleum Tank Release Compensation Account reimbursements to which you are might otherwise be entitled, and substantial civil penalties for failure to comply.

Please refer to MPCA fact sheets for information regarding the scope of investigations required at petroleum release sites. MPCA staff requires that the site investigation fully define the extent and magnitude of soil and ground water contamination caused by the release. We reserve the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled.

If you have any questions concerning this letter or need additional information, please call me at 612/297-8580. Please reference the above LEAK # in all correspondence.

Sincerely,

Chris McLain
Project Manager
Metro Site Remediation Section

CLM:tf

cc: Robert Goltz, Nova Environmental, Chaska

Minnesota Pollution Control Agency

September 19, 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Schachtman
Steve Scott Management
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope
Site ID# LEAK00006312

Dear Mr. Schachtman:

On May 13, 1993, the Minnesota Pollution Control Agency (MPCA) staff was notified that a release of petroleum occurred from storage tank facilities that you own and/or operate at the site referenced-above.

This is to inform you that the MPCA staff has not received the information requested in our conversation with your consultant on January 12, 1996. In order for the MPCA staff to complete its review of your file, this information must be submitted within 150 days of receipt of this letter. **This is MPCA second and final requests for this information. Failure to comply with this requirement may result in reduced reimbursement from the Petrofund and will result in an enforcement action taken against you by the MPCA.**

Please submit the requested report or respond in writing to indicate your intentions for further action at this site. If your response is not received by the MPCA within 30 days after receipt of this letter, MPCA staff will assume you do not intend to comply with this request. In this event, the MPCA Commissioner may order you to take corrective action at the site. If you do not comply with the Commissioner's order, it may be enforced in court or alternatively, the MPCA could spend its own money cleaning up the release and than seek to recover its costs from you through legal action. Other possible courses of action against responsible parties who refuse to cooperate with this agency include, but are not limited to, a reduction to future Petroleum Tank Release Compensation Account reimbursements to which you are might otherwise be entitled, and substantial civil penalties for failure to comply.

Please refer to MPCA fact sheets for information regarding the scope of investigations required at petroleum release sites. The MPCA staff requires that the site investigation fully define the extent and magnitude of soil and ground water contamination caused by the release. The MPCA the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled.

If you have any questions concerning this letter or need additional information, please call me at 612/297-8580. Please reference the above LEAK # in all correspondence.

Sincerely,

Chris McLain
Project Manager
Cleanup Unit I
Tanks and Emergency Response Section

CLM:lh

cc: Robert Goltz, Nova Environmental, Chaska

Minnesota Pollution Control Agency

June 26, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Schachtman
Steve Scott Management
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope
Site ID# LEAK00006312

Dear Mr. Schachtman:

On May 13, 1993, the Minnesota Pollution Control Agency (MPCA) staff was notified that a release of petroleum occurred from storage tank facilities that you own and/or operate at the site referenced above.

This is to inform you that the MPCA staff has not received the information requested in our conversation with your consultant on January 12, 1996. In order for the MPCA staff to complete its review of your file, this information must be submitted within 150 days of receipt of this letter. Failure to comply with this requirement may result in reduced reimbursement from the Petrofund and/or enforcement action taken against you by the MPCA.

Please submit the requested report or respond in writing to indicate your intentions for further action at this site. If your response is not received by the MPCA within 30 days after receipt of this letter, MPCA staff will assume you do not intend to comply with this request. In this event, the MPCA Commissioner may order you to take corrective action at the site. If you do not comply with the Commissioner's order, it may be enforced in court or alternatively, the MPCA could spend its own money cleaning up the release and than seek to recover its costs from you through legal action. Other possible courses of action against responsible parties who refuse to cooperate with this agency include, but are not limited to, a reduction to future Petroleum Tank Release Compensation Account reimbursements to which you are might otherwise be entitled, and substantial civil penalties for failure to comply.

Please refer to MPCA fact sheets for information regarding the scope of investigations required at petroleum release sites. MPCA staff requires that the site investigation fully define the extent and magnitude of soil and ground water contamination caused by the release. We reserve the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled.

If you have any questions concerning this letter or need additional information, please call me at 612/297-8580. Please reference the above LEAK # in all correspondence.

Sincerely,

Chris McLain
Project Manager
Cleanup Unit III
Tanks and Emergency Response Section

CLM:tf

cc: Robert Goltz, Nova Environmental, Chaska

CLM

Nova
Environmental Services, Inc.

S.B. Cummings
President

J.E. Findley
Chief Executive Officer

January 15, 1996

Minnesota Pollution Control Agency
Tanks and Spills Section
Steve Thompson
520 Lafayette Road
St. Paul, Minnesota 55155-4194

RE: ADDITIONAL INVESTIGATION
HILLSBORO COURT APARTMENTS
NEW HOPE, MINNESOTA
SITE ID: 6312

Dear Mr. Thompson:

As we discussed on January 12, 1996, Nova Environmental Services, Inc. (Nova) concurs that an additional soil boring is necessary at the above referenced site to define the vertical extent of petroleum impacted soil and ground water. One soil boring will be advanced at the location of the former underground storage tank and a ground water sample collected of the perched water. The soil boring will continue through the tank basin until non saturated soil is encountered and non impacted soil is detected. It is assumed that the soil boring will be advanced to a depth not greater than 30 feet. The samples will be analyzed for Diesel Range Organics (DRO) and Benzene, Ethyl Benzene, Toluene and Xylene (BETX). Soil will be screened using a HNU photoionization detector and the Minnesota Pollution Control Agency jar head space method.

The location of the soil boring will be as close as possible to the former underground storage tank but may not be directly in the tank basin due to location of overhead wiring.

Laboratory analysis results and recommendations for further work will be forwarded to the MPCA when available. If you have any questions please call me at (612) 448-9393.

Sincerely,

NOVA ENVIRONMENTAL SERVICES, INC.

Robert G. Goltz
Environmental Scientist

RGG:slh

pc: Steve Schachtman, Steven Scott Management

Nova
Environmental Services, Inc.

TRANSMITTAL LETTER

1107 Hazeltine Boulevard, Suite 400 Chaska, Minnesota 55318
Phone: (612) 448-9393 Fax: (612) 448-9572

TO: Minnesota Pollution Control Agency
Hazardous Waste / Tanks and Spills
Chris McLain
520 Lafayette Rd.
St. Paul, MN 55155

DATE: 2/23/94
PROJECT NO. M93-445
RE: Leak # 6312
Hillsboro Court Apts
New Hope, MN

We are sending you:

- ☐ Originals
- ☐ Blueprints
- ☐ Specifications
- ☒ Reports
- ☐ Copy of Letter
- ☐ Proposal
- ☐ Invoices
- ☐ Other _____
- ☐ Enclosed
- ☐ Separate Cover
- ☐ Mail ☐ Express

Number of Copies	Description
1	PTR Investigation Report

RECEIVED
FEB 25 1994
MPCA, HAZARDOUS WASTE DIVISION

- ☐ For your approval
- ☐ For your information
- ☒ For your review and comment
- ☐ As requested
- ☐ Other _____

REMARKS:

We are continuing to monitor the site and will forward results [redacted] when available. Please let us know if you agree with the conclusions

pc:

Sincerely, Robert G Goltz

CLM

Minnesota Pollution Control Agency

July 28, 1993

Mr. Steve Schachtman
Steve Scott Management
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

Dear Mr. Schachtman:

RE: Contaminated Soil Corrective Action Plan Approval
Site: Hillsboro Court Apartments, New Hope
Site ID#: LEAK00006312

7-21-93

The Minnesota Pollution Control Agency (MPCA) has received the monthly log from the thermal treatment facility that has accepted the petroleum contaminated soil from the above-referenced site. This submittal, along with the "Application to Treat Petroleum Contaminated Soil", if signed by the responsible person and the authorized thermal treatment unit representative, constitutes an acceptable form of a soil corrective action plan and is hereby approved by the MPCA staff.

This approval qualifies you under Minn. Stat. § 115c.09, subd. 2(a)(1) (Supp. 1991) to be eligible for Petrofund reimbursement of eligible cleanup costs incurred up to the date of this letter. Application for reimbursement must be made directly to the Petrofund. The Petro Board makes the final decision on reimbursement. Reimbursement decisions are based on factors such as the adequacy of cleanup, reasonableness of cost, compliance with notification laws and cooperativeness with the MPCA.

Please note that this approval applies only to the process of thermal treatment of the petroleum contaminated soil (139 tons) and does not constitute MPCA staff's approval of the volume of contaminated soil excavated at the above-referenced site.

If you have any questions, please contact me.

Sincerely,

for Tom C Wintle

Bob Dullinger, Supervisor
Cleanup Unit II
Tanks and Spills Section
Hazardous Waste Division

BD:jw

TTC

Minnesota Pollution Control Agency

May 24, 1993

Mr. Steve Schachtman
Steven Scott Management Company
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

Dear Mr. Schachtman:

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope
Site ID#: LEAK00006312

The Minnesota Pollution Control Agency (MPCA) has received notification that a release of petroleum has occurred from storage tank facilities which you own and/or operate that has resulted in contamination of soil and/or ground water.

Federal and state laws require that persons legally responsible for storage tank releases notify the MPCA of the release, investigate the extent of the release and take actions needed to ensure that the release is cleaned up. A person is considered legally responsible for a tank release if the person owned or operated the tank either during or after the release, unless specifically exempted under the law. See Minn. Stat. § 115C.021 (as amended by Minn. Laws 1992, ch. 414, sec. 2). If you believe that you are not legally responsible for this storage tank release, please provide the MPCA with a written explanation of the grounds for your position within 30 days.

The MPCA staff is requesting you to take the steps necessary to investigate and clean up the release in accordance with the enclosed MPCA technical documents. The MPCA requires that you conduct a site investigation to define the full extent and magnitude of the soil and/or ground water contamination caused by the release. If you know or discover that there is free-floating petroleum on the water table, the MPCA requests that you notify the MPCA within 24 hours. In addition, if any measurable volume of free product is observed in an excavation, borehole, or well, you must IMMEDIATELY begin interim free product recovery (passive hydrophobic/oleophilic collectors, absorbent pads, etc.)

If you are not legally responsible for the release, but hold legal or equitable title to the property where the release occurred, you may volunteer to take corrective action. Responsible persons and volunteers who take corrective action may be eligible for reimbursement for a major portion of the costs of corrective action. The legislature has established the Petroleum Tank Release Cleanup Account to reimburse responsible persons and volunteers. The account is administered by the Petroleum Tank Release Compensation Board (Petro Board). The Petro Board has adopted rules, Minn. Rules ch. 2890, governing application for reimbursement. Questions about eligibility and reimbursement should be directed to the Petro Board at 612/297-1119 or 612/297-4203.

If you have not already done so, the MPCA recommends that you hire a qualified consulting firm that has experience in conducting petroleum release site investigations and in proposing and implementing appropriate corrective actions. The MPCA reserves the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled. Please note that, under Minn. Rules pt. 2890.0075, subp. 2, you must solicit a minimum of two competitive proposals on a form prescribed by the Petro Board to ensure that your consulting costs are reasonable.

If you do not respond to this letter within 30 days, the MPCA staff will assume that you do not intend to comply with this request. In this event, the MPCA Commissioner may order you to take corrective action. If you do not comply with the Commissioner's order, it may be enforced in court or, alternatively, the MPCA could spend its own money cleaning up the release and then request the Attorney General to recover its costs from you through legal action. Failure to cooperate with the MPCA in a timely manner will also result in reduced reimbursement from the Petro Board. See Minn. Rules pt. 2890.0065, subp. 1, item C.

MPCA staff has compiled the enclosed factsheets to provide you with the information necessary to complete a successful investigation and cleanup.

If you have any questions concerning this letter or need additional information, contact me at 612/297-8580. Please reference the above LEAK # in all correspondence.

Sincerely,

E. Edwin Balcom

for Chris L. McLain
Project Manager
Tanks and Spills Section
Hazardous Waste Division

CLM:nh

Enclosures

cc: Valerie Leone, City Clerk, New Hope
John Crelly, Fire Inspector, New Hope

Nova
Consulting Group, Inc.

S.B. Cummings
President

J.E. Findley
Chief Executive Officer

January 8, 2001

Mr. Ben Steinberg
Hillsboro Court LLC
Golden Hills Office Center
701 Xenia Lane, Suite 250
Golden Valley, MN 55416-1028

Dear Mr. Steinberg:

Re: Limited Subsurface Investigation
Hillsboro Court Apartments
New Hope, Minnesota
MPCA Leak #6312
Nova Project No. E00-1617

In accordance with your written authorization, Nova Consulting Group (Nova) conducted a Limited Subsurface Investigation (LSI) of the referenced property (Site). The objective of this LSI was to further evaluate the soils in the former location of the fuel oil UST basin for the presence of contamination associated with the former fuel oil UST.

Nova was on-Site on December 29, 2000 to complete one direct push soil boring (SP-8) in the former location of the fuel oil UST basin. A Soil Boring Location Map, including the soil boring locations from the previous investigation conducted in 1993, is attached. Soil samples were collected continuously at four-foot intervals until refusal was met at a depth of 26-feet. The soil samples were screened in the field for indications of petroleum odors, staining and organic vapors. A HNu PI-101 (PID) fitted with a 10.2 eV lamp was used to measure the organic vapor concentrations using the bag headspace method of analysis. Soil samples were also collected for laboratory chemical analysis.

The soil samples were collected from an area of elevated PID readings (10 feet bls) and from the base of the borehole (25 feet bls). The samples were chemically analyzed for the presence and concentration of diesel range organics (DRO) and gasoline range organics (GRO). A ground water sample could not be collected due to slow ground water recharge.

Field screening of the soil samples detected a petroleum-like odor and organic vapors at a concentration of 9 parts per million (ppm) in the 8 to 12 feet sampling interval. No petroleum odors, staining or organic vapors were detected in the other sampling intervals (boring log attached). However, chemical analysis of the soil samples collected from 10 feet bls and 25 bls did not detect DRO and GRO at concentrations greater than or equal to the laboratory detection limits (results attached).

Due to laboratory error, the soil samples were not analyzed for benzene, ethylbenzene, toluene and xylenes (BETX). However, due to the general absence of BETX in the soil samples collected from the previously completed borings, and the non-detection of DRO and GRO in the soil samples collected as part of this assessment, it is unlikely BETX are present at levels of concern in the former UST basin.

Based on the results of this LSI and the previous investigations conducted at the Site, it is our opinion that additional assessment of the soil and ground water at the Site is not warranted.

We recommend that the MPCA consider this Site for closure.

We appreciate the opportunity to provide professional services to you for this project. If you have any questions or comments regarding the contents of this letter or the project in general, please call me at (952) 448-9393.

Sincerely,

NOVA CONSULTING GROUP, INC.

Charles A. Losby
Project Manager

Reviewed by: Anthony R. LaBarre, PG, Senior Project Manager

C: Mr. Chris McLain, MPCA
Mr. Len Deering, Archs Commercial Mortgage

Nova Consulting Group, Inc.

BORING LOG

PROJECT NAME: *Hillsboro Apartments*			Boring No. : **SP-8**	
PROJECT LOCATION: *2731 Hillsboro Court, New Hope, Minnesota*			Nova Project No. : *E00-1617*	
DEPTH (FEET)	USCS GROUP SYMBOL	DESCRIPTION	COLLECTED SAMPLE NAME	PID (PPM)
1.0		4" Asphalt, fill		
2.0				
3.0	CL	Clay with gravel, some fine sand lenses, mottled gray/brown, moist		
4.0		(Glacial Till)	SP-8 4'	ND
5.0				
6.0				
7.0				
8.0			SP-8 8'	9
9.0				
10.0	CL	Clay with sand lenses, moist to wet, petroleum odor, gray		
11.0		(Glacial Till)		
12.0			SP-8 12'	ND
13.0				
14.0	CL	Clay with gravel, moist, gray		
15.0		(Glacial Till)		
16.0			SP-8 16'	ND
17.0				
18.0				
19.0				
Boring Depth (feet):	26	Driller: Eric Halpaus	Date of Boring:	12/29/00
Groundwater Depth:	Not Encountered	Rig: *Geoprobe 5400*		

ND = Not detected above background.

Nova Consulting Group, Inc.

BORING LOG

PROJECT NAME:	*Hillsboro Apartments*	Boring No. :	**SP-8**
PROJECT LOCATION:	*2731 Hillsboro Court, New Hope, Minnesota*	Nova Project No. :	*E00-1617*

DEPTH (FEET)	USCS GROUP SYMBOL	DESCRIPTION	COLLECTED SAMPLE NAME	PID (PPM)
20.0	CL	Clay with gravel, moist, gray	SP-8 20'	ND
21.0		(Glacial Till)		
22.0				
23.0				
24.0				
25.0			SP-8 25'	ND
26.0				

END OF BORING

Macro Core Sampler Refusal

Boring Depth (feet):	26	Driller: Eric Halpaus	Date of Boring: 12/29/00
Groundwater Depth:	Not Encountered	Rig: *Geoprobe 5400*	

ND = Not detected above background.

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DATE: 01/04/01
PAGE: 1

Nova Environmental
1107 Hazeltine Blvd.
Suite# 400
Chaska, MN 55318

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

Attn: Mr. Tony LaBarre
Phone: 612-448-9393 x304

Solid results are reported on a dry weight basis

Pace Sample No: 102478815 Date Collected: 12/29/00 Matrix: Soil
Client Sample ID: SP-8 @ 10' Date Received: 12/29/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Inorganics Prep							
Percent Moisture		Method:			Prep Method:		
Percent Moisture	10.6	%	0	01/02/01	LSB		
GC Volatiles							
WI GRO and PVOC, soil		Method: TPH GRO/PVOC WI			Prep Method: TPH GRO/PVOC WI ext		
Gasoline Range Organics	ND	mg/kg	5.6	01/04/01	TJM		
Fluorobenzene (S)	80	%		01/04/01	TJM	462-06-6	
GC Semivolatiles							
WI DRO in Soil		Method: TPH DRO Wisconsin			Prep Method: TPH DRO WI extracti		
Diesel Range Organic Compounds	ND	mg/kg	12	01/03/01	CLM		
n-Triacontane (S)	88	%		01/03/01	CLM	638-68-6	
Date Extracted				01/02/01			

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

Pace Sample No: 102478823 Date Collected: 12/29/00 Matrix: Soil
Client Sample ID: SP-8 @ 25' Date Received: 12/29/00

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Inorganics Prep							
Percent Moisture	Method:				Prep Method:		
Percent Moisture	11.1	%	0	01/02/01	LSB		
GC Volatiles							
WI GRO and PVOC, soil	Method: TPH GRO/PVOC WI				Prep Method: TPH GRO/PVOC WI ext		
Gasoline Range Organics	ND	mg/kg	5.6	01/04/01	TJM		
Fluorobenzene (S)	72	%		01/04/01	TJM	462-06-6	
GC Semivolatiles							
WI DRO in Soil	Method: TPH DRO Wisconsin				Prep Method: TPH DRO WI extracti		
Diesel Range Organic Compounds	ND	mg/kg	10	01/04/01	CLM		
n-Triacontane (S)	80	%		01/04/01	CLM	638-68-6	
Date Extracted				01/02/01			

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

QUALITY CONTROL DATA

Nova Environmental
1107 Hazeltine Blvd.
Suite# 400
Chaska, MN 55318

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

Attn: Mr. Tony LaBarre
Phone: 612-448-9393 x304

QC Batch ID: 53657
QC Batch Method: TPH DRO WI extracti
Analysis Method: TPH DRO Wisconsin
Analysis Description: WI DRO in Soil
Associated Pace Samples: 102478815 102478823

METHOD BLANK: 102479979
Associated Pace Samples:
102478815 102478823

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Range Organic Compounds	mg/kg	ND	10	
n-Triacontane (S)	%	71		

LABORATORY CONTROL SAMPLE & LCSD: 102479987 102479995

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Range Organic Compounds	mg/kg	200	164.8	82.4	159.9	79.9	3	
n-Triacontane (S)				95		92		

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

QUALITY CONTROL DATA

DATE: 01/04/01

Nova Environmental
1107 Hazeltine Blvd.
Suite# 400
Chaska, MN 55318

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

Attn: Mr. Tony LaBarre
Phone: 612-448-9393 x304

QC Batch ID: 53680
QC Batch Method:
Analysis Method:
Analysis Description: Percent Moisture
Associated Pace Samples: 102478815 102478823

METHOD BLANK: 102480894
Associated Pace Samples:
102478815 102478823

Parameter	Units	Method Blank Result	PRL	Footnotes
Percent Moisture	%	ND	1	

SAMPLE DUPLICATE: 102480902

Parameter	Units	102479227	Dup. Result	RPD	Footnotes
Percent Moisture	%	16.00	15.70	2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

QUALITY CONTROL DATA

Nova Environmental
1107 Hazeltine Blvd.
Suite# 400
Chaska, MN 55318

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

Attn: Mr. Tony LaBarre
Phone: 612-448-9393 x304

QC Batch ID: 53796
QC Batch Method: TPH GRO/PVOC WI ext
Analysis Method: TPH GRO/PVOC WI
Analysis Description: WI GRO and PVOC, soil
Associated Pace Samples: 102478815 102478823

METHOD BLANK: 102485539
Associated Pace Samples:
102478815 102478823

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline Range Organics	mg/kg	ND	5	
Fluorobenzene (S)	%	114		

LABORATORY CONTROL SAMPLE & LCSD: 102485547 102485554

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline Range Organics	mg/kg	50	49.19	98.4	48.19	96.4	2	
Fluorobenzene (S)				97		95		

REPORT OF LABORATORY ANALYSIS

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Pace Project Number: 1040362
Client Project ID: Hillsboro E00-1617

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

573896

Page: 1 of 1

Required Client Information: **Section A**

Company	NOVA
Address	
Phone	Fax

Required Client Information: **Section B**

Report To:	Tony LeBlanc
Invoice To:	Same
P.O.	
Project Name:	Hillsboro
Project Number:	600-1617

Client Information (Check quote/contract): RUSH

Requested Due Date: 1-4-00 *TAT: 6 Day

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.

Turn Around Time (TAT) in calendar days.

To Be Completed by Pace Analytical and Client **Section C**

Quote Reference:	
Project Manager:	
Project #:	1040362
Profile #:	

Section D **Required** Client Information:

SAMPLE ID

One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (hh: mm a/p)	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Requested Analysis: DRO	GRO/BTEX	Remarks / Lab ID
1	SP-8 @ 10'	12-29		2							X	X	10247881S
2	SP-8 @ 25'	12-29		2							X	X	10247882S
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Sample Condition		Sample Notes	Item No.	Relinquished By / Company	Date	Time	Accepted By / Company	Date	Time
Temp in °C:	10			[signature] / NOVA	12-29	13:48	[signature]	12/29/00	1345
Received on ICE:	(Y) / N								
Sealed Cooler:	Y / (N)								
Samples Intact:	(Y) / N								

Additional Comments:

BSM 12/29

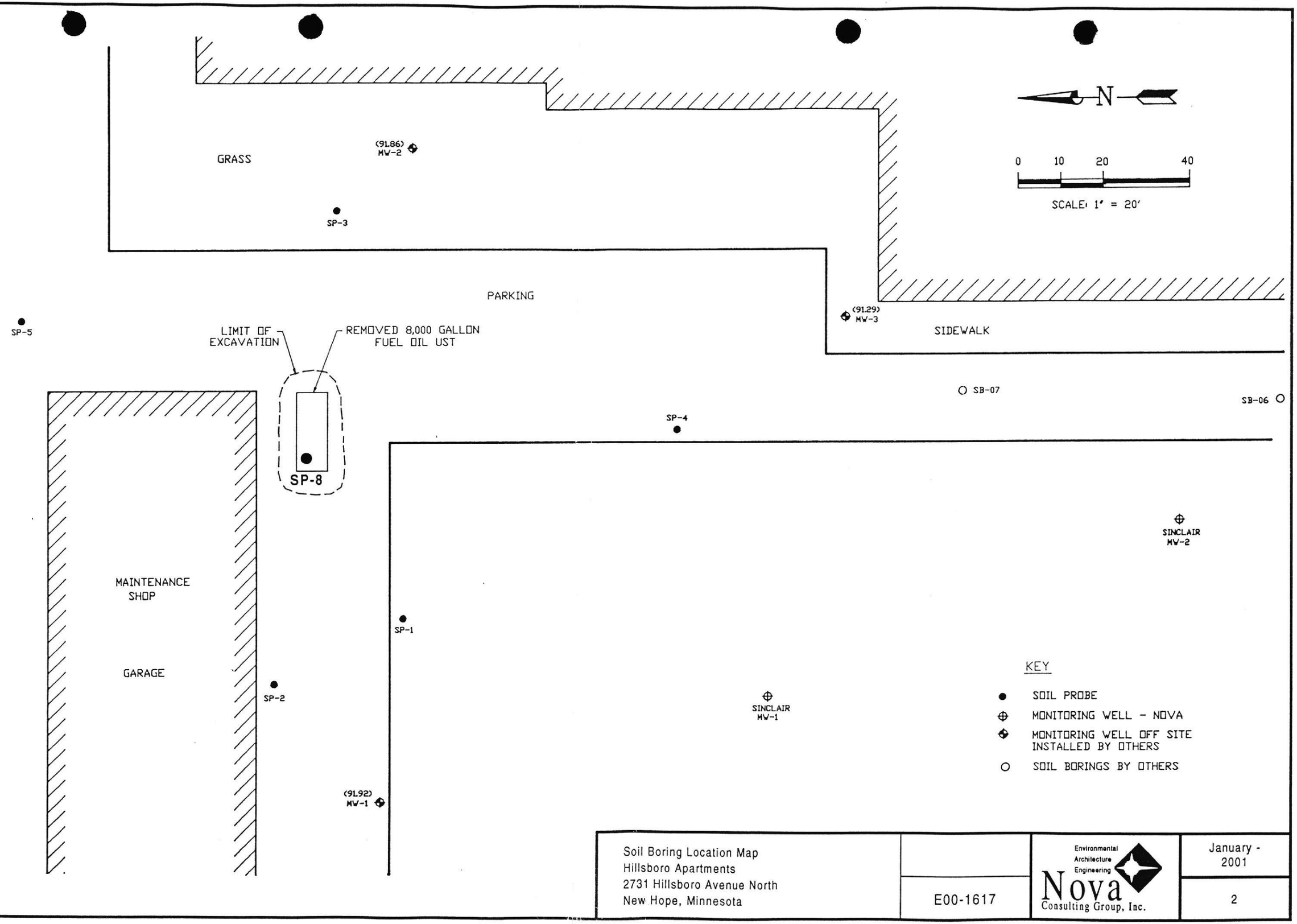
SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Halpaus

SIGNATURE of SAMPLER: [signature]

DATE Signed: (MM / DD / YY) 12-29-00

SEE REVERSE SIDE FOR INSTRUCTIONS



Soil Boring Location Map Hillsboro Apartments 2731 Hillsboro Avenue North New Hope, Minnesota		Environmental Architecture Engineering Nova Consulting Group, Inc.	January - 2001
	E00-1617		2

Nova
Environmental Services, Inc.

S.B. Cummings
President

J.E. Findley
Chief Executive Officer

June 17, 1994

Mr. Chris McLain
Minnesota Pollution Control Agency
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155

RE: GROUND WATER MONITORING
HILLSBORO COURT APARTMENTS
NEW HOPE, MINNESOTA
LEAK #: 6312

Dear Mr. McLain:

Nova Environmental Services Inc. (Nova) has completed the second round of the ground water monitoring at the above referenced site. On February 1, 1994, ground water samples were collected from monitoring wells MW-1, MW-2 and MW-3. The sample were delivered to Interpoll Laboratories, Inc. for analysis of Benzene, Ethyl Benzene, Toluene, Xylene and Diesel Range Organics (BETX and DRO). Laboratory results indicate that BETX compounds are below laboratory detection limits. Laboratory analysis detected low levels of DRO in the three samples but a foot note on the report indicates that the results are due to one or three FID active compounds. The results do not match the typical DRO pattern. In general, the results are consistent with the samples collected on June 29, 1993 and confirm that the release of fuel oil does not pose a threat to public health or the environment. Laboratory results are compiled on Table 1 and the reports are attached.

Water levels were measured in the monitoring wells prior to sampling. Water level elevations indicate that the water table has decreased approximately five feet in the past year. Ground water flow direction is to the south west. Ground water elevations are shown on Figure 1 included in Table 2.

If you have any questions please feel free to contact me at (612) 448-9393.

Sincerely,

NOVA ENVIRONMENTAL SERVICES, INC.

Robert G. Goltz

Robert G. Goltz
Environmental Scientist

M93-445L.003\H4

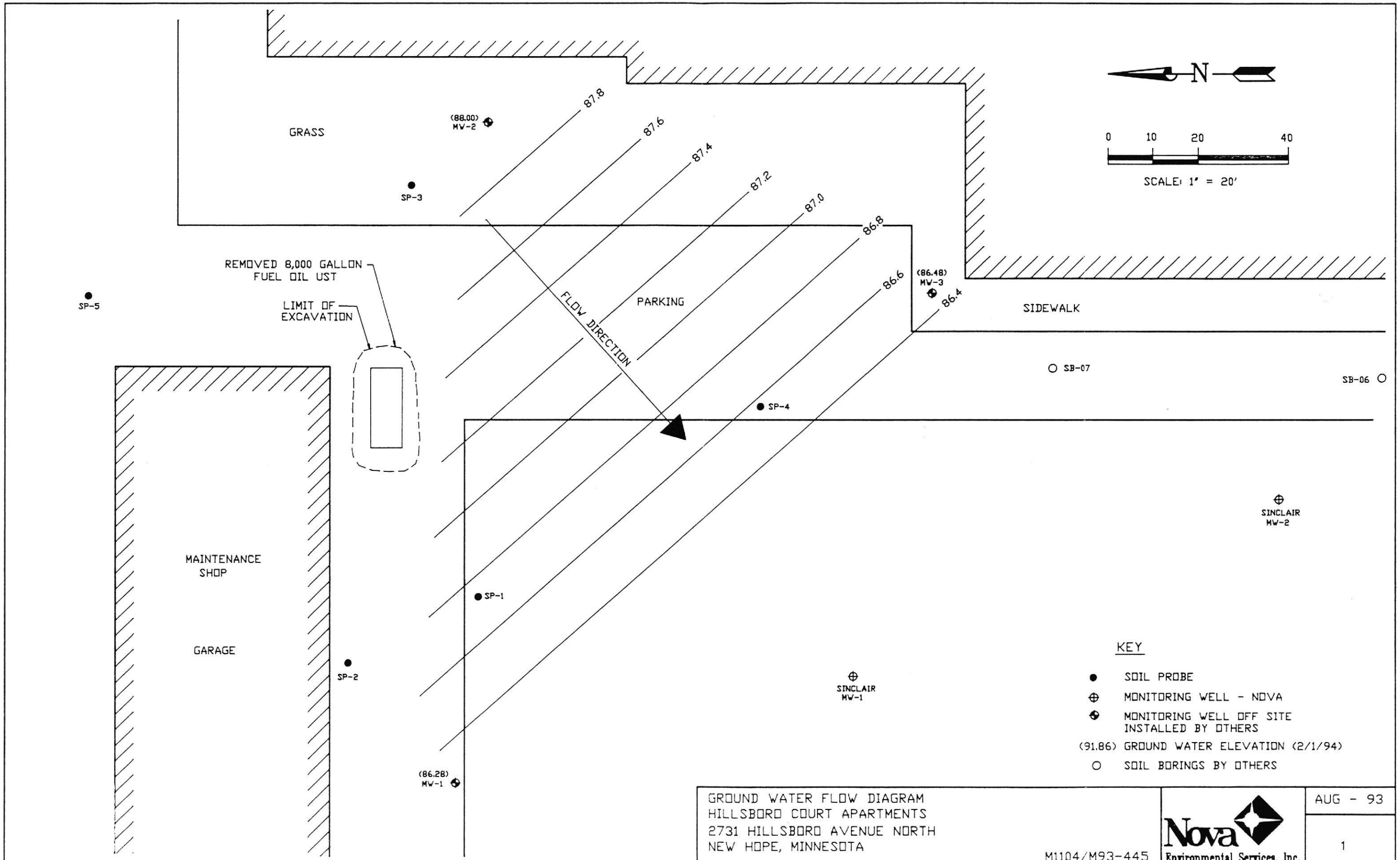
TABLE 1
LABORATORY RESULTS - GROUND WATER

Location	Date	Concentrations (ppb)				
		Benzene	Ethyl Benzene	Toluene	Xylene	DRO
MW-1	6/29/93	<0.47	<0.42	<0.92	<0.46	<26.0
	2/1/94	<0.47	<0.33	<0.50	<1.4	51[a]
MW-2	6/29/93	<0.47	<0.42	<0.92	<0.46	<26.0
	2/1/94	<0.47	<0.33	<0.50	<1.4	85[b]
MW-3	6/29/93	<0.47	<0.42	<0.92	<0.46	<26.0
	2/1/94	<0.47	<0.33	<0.50	<1.4	85[b]

a = The diesel range organics in this sample is mainly attributed to one FID action component.
b = The diesel range organics in this sample is mainly attributed to three FID active components.

TABLE 2
WATER TABLE ELEVATION SUMMARY

	Top of Riser Elevation (ft)	Date	Depth to Ground Water (ft)	Water Table Elevation (ft)
MW-1	100.00	6/29/93	6.47	93.53
		7/23/93	8.08	91.92
		2/1/94	13.72	86.28
MW-2	101.19	6/29/93	7.88	93.31
		7/23/93	9.33	91.86
		2/1/94	13.19	88.0
MW-3	100.79	6/29/93	8.00	92.79
		7/23/93	9.50	91.29
		2/1/94	14.31	86.48



GROUND WATER FLOW DIAGRAM
HILLSBORO COURT APARTMENTS
2731 HILLSBORO AVENUE NORTH
NEW HOPE, MINNESOTA

M1104/M93-445

Nova Environmental Services, Inc.

AUG - 93

1

Interpoll Laboratories, Inc.
4500 Ball Road N.E.
Circle Pines, Minnesota 55014-1819

TEL: (612) 786-6020
FAX: (612) 786-7854

ANALYTICAL RESULTS
FOR NOVA ENVIRONMENTAL SERVICES, INC.
NOVA PROJECT #M93-445

Submitted to:

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: RGG

Approved By:

Wayne A. Olson, Manager
Organic Chemistry Group

Laboratory Report #2248
February 11, 1994

PROJECT SUMMARY

The following laboratory report contains the analytical results for three water samples submitted to Interpoll Laboratories, Inc. (ILI) by Nova Environmental Services, Inc. for the Nova Project #M93-445. The samples were received on February 2, 1994, according to Interpoll Labs documented sample acceptance procedures and were analyzed for the parameters requested on the Nova Environmental Services Chain-of-Custody which accompanied the samples.

Nova Sample Identification	ILI Sample #
MW-1	2248-01
MW-2	2248-02
MW-3	2248-03

Results are reported on an "as received" basis.

Footnotes

aThe diesel range organics in this sample is mainly attributable to one FID active component.

[b]The diesel range organics in this sample is mainly attributable to three FID active components.

WAO/bj
BDL = below detection limit
Invoice Enclosed

Sample Identification: MW-1
Sample Type: Water
Laboratory Log Number: 2248-01

Interpoll Laboratories, Inc.
Laboratory Report #2248
Nova Environmental Services, Inc.

	Target Detection Limit (ug/L)	Analytical Result (ug/L)	Equivalent Method Blank
EPA Method SW-846, 8020 :			
Benzene	0.47	BDL	BDL
Toluene	0.50	BDL	BDL
Ethylbenzene	0.33	BDL	BDL
Xylenes	1.4	BDL	BDL
Wisconsin DNR Method DRO:			
Diesel range organics	26	51 [a]	BDL

Sample Identification: MW-2
Sample Type: Water
Laboratory Log Number: 2248-02

Interpoll Laboratories, Inc.
Laboratory Report #2248
Nova Environmental Services, Inc.

	Target Detection Limit (ug/L)	Analytical Result (ug/L)	Equivalent Method Blank
EPA Method SW-846, 8020 :			
Benzene	0.47	BDL	BDL
Toluene	0.50	BDL	BDL
Ethylbenzene	0.33	BDL	BDL
Xylenes	1.4	BDL	BDL
Wisconsin DNR Method DRO:			
Diesel range organics	26	85 b	BDL

Sample Identification: MW-3
Sample Type: Water
Laboratory Log Number: 2248-03

Interpoll Laboratories, Inc.
Laboratory Report #2248
Nova Environmental Services, Inc.

	Target Detection Limit (ug/L)	Analytical Result (ug/L)	Equivalent Method Blank
EPA Method SW-846, 8020 :			
Benzene	0.47	BDL	BDL
Toluene	0.50	BDL	BDL
Ethylbenzene	0.33	BDL	BDL
Xylenes	1.4	BDL	BDL
Wisconsin DNR Method DRO:			
Diesel range organics	26	58 [b]	BDL

Nova Environmental Services, Inc.

Minneapolis Office ☒
1107 Hazeltine Blvd. Ste. 420
Chaska, MN 55318
(612) 448-9393
Fax # 612-448-9572

Chain of Custody Record

Chicago Office ☐
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court Apts

Project Number: M93-445

Project Manager: RGG

Laboratory: Interpoll

Special Instructions:

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: DRO	BETX					Sample Description / Remarks
	7-1-94	2, 40ml 1, 1 liter	MW-1	X	X					Water 2245-01
	"	"	MW-2	X	X					-02
	"	"	MW-3	X	X					-03

Sampler (Signature): [signature]

Affiliation: NovA

Date: 7-1-94 Time: 450

Relinquished By	Affiliation	Date	Time
[signature]	NovA	7-2-94	1045
[signature]		7-2-94	3p

Received By	Affiliation	Date	Time
[signature]			1:30p
[signature], Interpoll			3:00

CM

MINNESOTA POLLUTION CONTROL AGENCY
COMMISSIONER'S SITE REPORT
TO THE PETROLEUM TANK RELEASE
COMPENSATION BOARD

Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope

Site ID#: LEAK00006312

Applicant: Steven C. Schachtman

Date of Application: February 23, 1994
Date of Underground Storage Tank Registration: May 11, 1993
Date of Tank Installation: 1967

---

1. Eligibility Determination

I hereby determine that the corrective action described in the application was appropriate in terms of protecting public health, welfare, and the environment and that the applicant is eligible for Petrofund reimbursement, pursuant to Minn. Stat. § 115C.09, subd. 2, items (a) and (c) (1992).

2. Compliance with Applicable Requirements: INADEQUATE

Information readily available to the Minnesota Pollution Control Agency (MPCA) staff shows that the applicant has complied with the applicable requirements of Minn. Stat. § 115C.09, subd. 3(f)(1992) with the following exceptions:

The underground petroleum storage tank(s) was not registered by the June 1, 1986, deadline established by Minn. Stat. § 116.48, subd. 1(a)(1990), and the December 1, 1987, grace period set by the MPCA.

3. Reimbursement Reduction Recommendation:

The MPCA staff recommends a reduction in the amount of reimbursement available to the applicant, under Minn. Stat. § 115C.09, subd. 3(f)(1992), based upon the compliance failure(s) noted above.

The determinations in this report are made solely for the purpose of determining eligibility for reimbursement under Minn. Stat. § 115C.09, subds. 2 and 3 (1992). Nothing in this site report releases any person from liability, and the MPCA does not waive any of its authority to require additional corrective action at the above-referenced site or to enforce other provisions of state law.

Dated: 5/19/94

Mark Schmitt

Mark Schmitt, Supervisor
Tanks and Spills Section

Petroleum Tank Release Compliance Checklist

SITE NAME: Hillsboro Court - Steven Scott Welsh LEAK0000 6312

USE THE FOLLOWING GUIDELINES TO DETERMINE IF THE LEAKING TANK IS IN COMPLIANCE

_____ UNREGULATED TANKS.....are ASTs/USTs 110 gallons or less, OR heating oil ASTs/USTs 1,100 gallons or less with product consumed on the premises, OR farm/residential ASTs/USTs 1,100 gallons or less containing motor fuel not for resale.

__✓__ STATE REGULATED TANKS.....are heating oil USTs with a capacity more than 1,100 gallons.

_____ FEDERALLY REGULATED TANKS.....are all USTs not specified above.

_____ ABOVEGROUND TANKS.....are unregulated if they meet the same criteria as **"Unregulated Tanks"**. If ASTs are regulated, use items marked with **.

UNREGULATED TANKS, STATE TANKS, FEDERAL TANKS ☐ ADEQUATE ☐ INADEQUATE

****Release Notification:** Date release discovered: MPCA 05/13/93 Petro App 05/13/93

Date release reported: MPCA 05/13/93 Petro App 05/13/93

Was there environmental damage due to delay? Yes_____ No_____

****Cooperation/Due Care Issue:** Yes____ No_____
(i.e. release during tank removal, land treatment prior to approval, land treatment monitoring results not received)

Comments: _____

STATE TANKS, FEDERAL TANKS ☐ ADEQUATE ☐ INADEQUATE

****Tank Registration:** AST/ UST number: UST 17611 Registration Date: 05/11/93
Regulated USTs should be registered by 12/1/87. Regulated ASTs should be registered by 1/1/91.
Unregistered tanks removed before compliance dates receive no reduction for being unregistered.

Certified UST Installer: Yes_____ No_____ N/A ✓ Installation Date(s): 1967 Contractor Cert#_____
Applicable after 7/9/90.

Certified UST Remover: Yes ✓ No_____ N/A_____ Removal Date(s): 05/9/93 Contractor Cert # 0040
Applicable after 7/9/90.

Corrosion Protection: Tanks: Yes_____ No_____ N/A ✓ Piping: Yes_____ No_____ N/A ✓
Applicable for steel piping/steel USTs installed after 6/1/86. Steel piping/steel USTs installed before 6/1/86 require corrosion protection no later than 12/22/98. Heating oil piping/heating oil USTs installed before 6/1/86 don't ever require corrosion protection.

****AST Secondary Containment:** Yes_____ No_____ N/A ✓
Applicable after 1964 for ASTs>1,100 gallons or any AST within 500' of surface water.

Prior Removal Notice: Yes ✓ No_____ N/A_____
Applicable after 1/1/91; heating oil UST's > 1,100 gallons after 8/1/92.

FEDERAL TANKS ☐ ADEQUATE ☐ INADEQUATE

Spill/Overfill Protection: Yes_____ No_____ N/A_____
Applicable for USTs installed after 12/22/88. USTs installed before 12/22/88 require spill and overfill protection by 12/22/98.

Leak Detection:

Tanks: Yes_____ No_____ N/A_____

If tank was installed:	Then the leak detection deadline is:
before 1965 or unknown	12/22/89
1965-1969	12/22/90
1970-1974	12/22/91
1975-1979	12/22/92
1980-12/22/88	12/22/93

Tanks installed after 12/22/88 should have leak detection at installation.

Piping: Yes_____ No_____ Applicable for all piping.

Completed by: JWS Date: 4/20/94
(12/7/93)

I

MINNESOTA PETROLEUM TANK RELEASE COMPENSATION BOARD

Application for Reimbursement

63 2N

PART I APPLICATION PROCESS

(Check One) Check appropriate Phase and complete the information requested for the Phase checked (see Application Guide).

[X] **Phase 1.** MPCA approval of Soil Corrective Action Plan (SCAP)
- a) Date of SCAP approval 7 / 28 / 93 (Attach Copy)
- b) Date SCAP was submitted to MPCA ___ / ___ / ___

[ ] **Phase 2.** Submission of Documentation of Soil Treatment
Date Documentation was submitted to MPCA ___ / ___ / ___

[ ] **Phase 3.** MPCA approval of Comprehensive Corrective Action Plan (CCAP)
- a) Date of CCAP approval ___ / ___ / ___ (Attach Copy)
- b) Date CCAP was submitted to MPCA ___ / ___ / ___

[ ] **Phase 4.** Submission of CCAP Installation Letter to MPCA
Date of CCAP Installation Letter ___ / ___ / ___ (Attach Copy)

[ ] **Ongoing Expenses** Following Phase 4 Reimbursement or MPCA Site Closure or Conditional Closure

PART II APPLICANT INFORMATION

State of Minnesota
FEB 24 1993
Dept. of Commerce

1. "Responsible Person" [X] "Volunteer" [ ] or "Non-Responsible Person" [ ] (check one)(see application guide)

   Name: Steven Scott Welsh I.T.F. Hillsboro Court

2. Mailing Address: 5402 Parkdale Dr., Suite 200, Minneapolis, MN 55416
   Telephone Number: (612) 540-8600

3. Site I.D.: Leak #: 6312

4. The applicant is a: [X] Corporation [ ] Partnership [ ] Individual [ ] Other _____

5. Applicant was the owner or operator of the tank from Unknown to 5/19/93

6. "Volunteer" Applicant owned property from _____ to _____

7. Has applicant executed any Petrofund assignment agreements? yes__ no X

   Name of assignee(s): _____

This Form is effective through December 31, 1992

PART III TANK FACILITY

1. Name of "Tank Facility" (**see application guide**) where the petroleum release occurred:

   Hillsboro Court Apartments

2. Tank Facility Address: 2731 Hillsboro Avenue North
   New Hope, MN

3. Contact Person at Tank Facility: Steve Schachtman
   Telephone Number: (612) 540-8600

4. To the best of your knowledge, list all other persons besides the applicant who were owners or operators of the tank during or after the petroleum release:

   None

5. Did any of the persons listed in question 4 incur corrective action costs related to this petroleum release? Yes ___ No ___ If yes, list name and address if known:

6. Date when petroleum release was detected: 5/13/93

   What test was performed to initially establish that a release occurred?

   Tank Removal

7. Date when petroleum release was reported to the MPCA: 5/13/93

8. a. Which tanks (or associated piping) were the source of the release at this tank facility? (**see application guide**)

      Fuel Oil

   b. What was the cause of the release?

      Unknown

9. Was this tank(s) used only to store heating oil for consumptive use on the premises where stored? (check one) Yes _X_ No ___

PART IV TANK INFORMATION AND COMPLIANCE

(Note: If you do not know if tanks are registered and/or prior tank removal notice was given, enter "unk" (unknown) for these items. Please do not contact the MPCA for this information.)

A. **Underground Storage Tanks.** Complete the following information to reflect the status of your underground storage tanks at the time the release was discovered. Refer to the attachment **"Do Underground Storage Tanks and Piping Requirements Apply to Your Petroleum Tank?"** and **"What Do You Have to Do?/When Do You Have to Act?"** to determine the applicability of registration, leak detection, corrosion protection, and spill/overfill protection.

(Please attach additional sheets if more than five tanks are involved.)

Tank	Petroleum Product	Capacity	Type of Tank	Date Installed	Registered Yes/No/Unk	Date Removed
1	Fuel Oil	8,000 gal.	Steel	1967	Abandoned 1986	May 19, 1993
2						
3						
4						
5						

Tanks				Piping		
Tank	Leak Detection (Methods)	Corrosion Protection (Yes/No)	Spill/Overfill Protection (Yes/No)	Type of Piping	Leak Detection (Methods)	Corrosion Protection (Yes/No)
1	N/A	N/A	N/A	N/A	N/A	N/A
2						
3						
4						
5						

Tank	Tank Tightness Test Dates	Piping Tightness Test Dates
1	N/A	N/A
2		
3		
4		
5		

- Was 10-day prior tank removal notice given to MPCA? (Yes/No/Unk) Yes, variance granted.
- Which MPCA office was notified:

  St. Paul [X]
  Duluth [ ]
  Brainerd [ ]
  Detroit Lakes [ ]
  Marshall [ ]
  Rochester [ ]

- If the tank(s) involved in the release was removed after July 9, 1990, complete the following:

  Removal Contractor: F.M. Frattalone Grading & Excavating

  MPCA Contractor (**NOT Supervisor**) Certification Number: 0040

B. **Aboveground Storage Tanks.** Complete the following information to reflect the status of the aboveground tanks involved in the release at the time the release was discovered.

In describing your secondary containment, specify:

- materials used to construct both the base and the walls, including type and thickness of materials (e.g., 6" compacted clay, 30 mil HDPE, reinforced concrete slab floor/concrete block walls, none)
- how material specifications are known (e.g., permeability tests/dates, installation specifications)
- is the volume of the secondary containment area adequate for the contents of the largest tank (Y/N)

Tank	Contents	Capacity	Date Installed	Registered Yes/No/Unk	Description of Secondary Containment			
					Walls	Base	Verification	Volume
Sample	Unleaded	15,000	1/1/47	Y	Concrete Block	6" compact clay/6" gravel fill	Perm test on (date)	N
1								
2								
3								

Are there any special circumstances you would like the persons reviewing your application to be aware of?
Please explain: The UST was abandoned in place in 1986 so registration should not be an issue. Removal registration was submitted.

PART V ELIGIBLE COSTS

1. The Eligible Cost Worksheets attached are for INVESTIGATION costs, CLEAN-UP costs, and CONSULTANT costs. These worksheets must be completed listing each corrective action for which you are requesting reimbursement.

2. Invoices submitted with this application cover the period from 4/29/93 to 12/31/93.

3. Are any of the costs listed in the Eligible Cost Worksheets in dispute? Yes ___ No X
(see application guide)

4. At this time, do you anticipate incurring any Ongoing corrective action costs relative to the petroleum release at this Tank Facility? Yes X No ___

   If yes, explain briefly what work will be done and an approximate cost of that work.

   Quarterly monitoring, reporting and closure.

5. a. Please state the total amount of contaminated soil which was excavated at this site (cubic yards or tons):

   99 cubic yards.

   b. What was the soil contamination concentration (DRO) 300-4,100 ppm?

6. Has the applicant been eligible to recover cleanup costs arising from this petroleum release under any insurance policy at any time since June 4, 1987? Yes ___ No X

   If yes, provide the following:

Insurance Company	Policy #	Policy Limits	Deductible	Period Covered
				/ /
				/ /

7. Total of eligible costs are listed in the Eligible Cost Worksheets:

$ 21,709.43
x 90%

= 19,538.48

Insurance Reimbursement (subtract) - ___
Total Reimbursement Request = $19,538.48
(see application guide)

PART VI CONTRACTORS/CONSULTANTS

1. Complete the following for all contractors, subcontractors, consultants, engineering firms or others who performed corrective actions at this release site (see application guide). **Failure to provide this information for ALL persons who performed corrective action may result in an action to recover any reimbursement which may be paid.** (Attach additional sheets if necessary.)

Name of individual or firm: Nova Environmental Services, Inc.
Mailing address: 1107 Hazeltine Blvd., Suite 400, Chaska, MN 55318
Contact Person: Robert Goltz
Telephone Number: 612-448-9393

Name of individual or firm: Interpoll Laboratories, Inc.
Mailing address: 4500 Ball Road NE, Circle Pines, MN 55014-1819
Contact Person: Greg Holman
Telephone Number: 612-786-6020

Name of individual or firm: F.M. Frattalone Excavating and Grading, Inc.
Mailing address: 3066 Spruce Street, Little Canada, MN 55117
Contact Person: Mark Ryan
Telephone Number: 612-484-0448

Name of individual or firm: C.S. McCrossan, Inc.
Mailing address: 7865 Jefferson Hwy., Box 1240, Maple Grove, MN 55369
Contact Person: Bob Donaske
Telephone Number: (612) 425-4167

Name of individual or firm: Thein Well Company
Mailing address: P.O. Box 429, Clara City, MN 56222
Contact Person: Will Greely
Telephone Number:

Name of individual or firm: McCarty Water and Waste
Mailing address: 6240 Highway 12 West, Maple Plain, MN 55339
Contact Person: Mary McCarty
Telephone Number: (612) 479-4343

2. Describe below any relationship, financial or otherwise, between the applicant and any contractor who performed work at this site:

None

G312
I
2/24/94

PART VII CERTIFICATION (see application guide)

A. "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.

"I certify that if I have submitted invoices for costs that I have incurred but that remain unpaid, I will pay these invoices within 30 days of receipt of reimbursement from the board. I understand that if I fail to do so, the board may demand return of all or any portion of reimbursement paid to me and that if I fail to comply with the board's demand, that the board may recover the reimbursement, plus administrative and legal expenses in a civil action in district court. I understand that I may also be subject to a civil penalty."

[signature]
Signature of Applicant

STEVEN C SCHUURMAN
Name (please print)

2/23/94
Date

Witnessed by:

Jill Elyon
Name

2-23-94
Date

Every applicant must sign Part A above. If applicant is a corporation or partnership, the following certification must also be made:

"I further certify that I am authorized to sign and submit this application on behalf of

______________________________."

Signature

Name (please print)

Title (see Application Guide, Part VI)

Date

Please send this application and accompanying documents to:

Petroleum Tank Release Compensation Board
Minnesota Department of Commerce
133 East Seventh Street
St. Paul, Minnesota 55101
(612) 297-4203
(612) 297-1119

Sent deficiency letter 2/28/94

PART IV ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

A. SOIL BORINGS/MONITORING WELLS - ETC.

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Monitoring well install	Nova	M9843	10.9 Hrs.	$50.00/Hr.	545.00
Monitoring well install	Thein	01047	3 Wells	---	2,093.00
				TOTAL:	$2,638.00

B. LABORATORY TESTS AND ANALYSIS

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Soil Samples	Interpoll	63560	7 Samples	$133.20/Sample	932.40
Water Samples	Interpoll	63384	1 Sample	$370.00/Sample	370.00
Soil Samples	Interpoll	63690, 63798	7 Samples	$114.28/Sample	801.00
Water Samples	Interpoll	64017	3 Samples	$216.00/Sample	648.00
				TOTAL:	$2,751.40

PART IV **ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP**

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

C. EXCAVATION

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Excavate Soil	F.M. Frattalone	20499	100 c.y.	$2.50/c.y.	250.00
Replace Soil	F.M. Frattalone	20499	100 c.y.	$6.50/c.y.	650.00
Stockpile and Cover	F.M. Frattalone	20499	---	---	200.00
Extra Impacted Sand	F.M. Frattalone	20499	---	---	885.00
				TOTAL:	$1,985.00

D. SOIL DISPOSAL

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Soil Incineration	C.S. McCrossan	931128	$99.01/c.y.	$32.25/c.y.	3,129.98
				TOTAL:	$3,192.98

PART IV **ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP**

- * Descriptions must be specific as to work performed.
- * Invoices must be submitted for each cost listed below.
- * Invoices must contain sufficient detail to verify costs and services entered below.
- * Duplicate this form if additional worksheets are needed.

E. WATER TREATMENT

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Pump and Dispose	McCarty Water	2266	4 Hrs.	$70.00/Hr.	280.00
				TOTAL:	$280.00

PART IV ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

F. TRUCKING

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Load and Haul Soil	F.M. Frattalone	20560	100 c.y.	$6.00/c.y.	600.00
				TOTAL:	$600.00

G. EMERGENCY and TEMPORARY HAZARD CONTROL
(see application guide)

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
				TOTAL:	

PART IV ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

H. SITE RESTORATION and CLOSURE

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Black Top Restoration	F.M. Frattalone	20499	---	---	1,194.75
				TOTAL:	$1,194.75

I. OTHER CLEAN-UP or INVESTIGATION COSTS

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
				TOTAL:	

PART IV **ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP**

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

J. REPORT PREPARATION; DATA COLLECTION; OPERATION OVERSIGHT AND MAINTENANCE; SYSTEM MONITORING; CORRESPONDENCE; MILEAGE; POSTAGE; PER DIEM

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Data Collection	Nova	M9669	18 Hrs.	$60.00/Hr.	1,080.00
Data Collection	Nova	M9696	39.6 Hrs.	$50.00/Hr.	1,980.00
Word Processing	Nova	M9696	0.25 Hrs.	$30.00/Hr.	7.50
Sample Delivery	Nova	M9696	2 Shipments	$25.00/Shipment	50.00
Mileage	Nova	M9696	40 Miles	$0.39/Mi.	15.60
Miscellaneous	Nova	M9696	---	---	20.00
Project Management	Nova	M9843	8 Hrs.	$60.00/Hr.	480.00
Data Collection	Nova	M9843	0.2 Hrs.	$45.00/Hr.	9.00
Sample Delivery	Nova	M9843	1 Shipment	$25.00/Shipment	25.00
Mileage	Nova	M9843	167 Mi.	$0.39/Mi.	65.13
Miscellaneous	Nova	M9843	---	---	20.00
Correspondence	Nova	M10028	3.1 Hrs.	$60.00/Hr.	186.00
Data Collection	Nova	M10028	15 Hrs.	$50.00/Hr.	750.00
Data Collection	Nova	M10028	1.1 Hrs.	$45.00/Hr.	49.50
Drafting	Nova	M10028	1.5 Hrs.	$38.00/Hr.	57.00
Mileage	Nova	10028	81 Miles	$0.39/Mi	31.59
Project Management	Nova	M10418	1.2 Hrs.	$60.00/Hr.	72.00
Report Compilation	Nova	M10418	10.5 Hrs.	$50.00/Hr.	525.00
Data Collection	Nova	M10418	1.1 Hrs.	$45.00/Hr.	49.50
Drafting	Nova	M10418	1.5 Hrs.	$38.00/Hr.	57.00
				TOTAL:	$5,529.82

PART IV **ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP**

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

J. REPORT PREPARATION; DATA COLLECTION; OPERATION OVERSIGHT AND MAINTENANCE; SYSTEM MONITORING; CORRESPONDENCE; MILEAGE; POSTAGE; PER DIEM

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Project Management	Nova	M10498	0.5 Hrs.	$60.00/Hr.	30.00
Report Compilation	Nova	M10498	8.5 Hrs.	$50.00/Hr.	425.00
Drafting	Nova	M10498	1.5 Hrs.	$38.00/Hr.	57.00
Word Processing	Nova	M10498	3.25 Hrs.	$30.00/Hr.	97.50
Well Logs	Nova	M10498	---	---	32.71
Mileage	Nova	M10498	10 Miles	$0.39/Mi.	3.90
Report Compilation/Project Management	Nova	M11210	28.4 Hrs.	$60.00/Hr.	1,704.00
Report Compilation	Nova	M11210	0.5 Hrs.	$50.00/Hr.	25.00
Drafting	Nova	M11210	2.75 Hrs.	$38.00/Hr.	104.50
Word Processing	Nova	M11210	2.75 Hrs.	$30.00/Hr.	82.50
				TOTAL:	$2,562.11

PART IV ELIGIBLE COST WORKSHEET - INVESTIGATION AND CLEAN-UP

* Descriptions must be specific as to work performed.
* Invoices must be submitted for each cost listed below.
* Invoices must contain sufficient detail to verify costs and services entered below.
* Duplicate this form if additional worksheets are needed.

K. MARK-UP

Description	Firm Name	General Contractor Invoice #	Sub-Contractor Invoice #	Mark Up %	Sub-total
Soil Samples	Nova	M9843	63560	15%	139.86
Water Samples	Nova	M9843	63384	15%	55.50
Monitoring Well Installation	Nova	M9843	01047	15%	313.95
Soil Samples	Nova	M10028	63690, 63798	14.98%	120.06
Water Samples	Nova	M10028	64017	14.81	96.00
				TOTAL:	$725.37

L. OTHER CONSULTANT SERVICES (specify)

Description	Firm Name	Invoice # or Date	Total Units	Unit Costs	Sub-total
Soil Probe	Nova	M9696	1 Day	$250.00/Day	250.00
				TOTAL:	$250.00

REPORT

PETROLEUM TANK RELEASE INVESTIGATION REPORT

HILLSBORO COURT APARTMENTS
NEW HOPE, MINNESOTA
MPCA LEAK NO.: 6312

PROJECT NO.: M93-445

February 4, 1994

Nova
Environmental Services, Inc.

PETROLEUM TANK RELEASE INVESTIGATION REPORT HILLSBORO COURT APARTMENTS NEW HOPE, MINNESOTA

MPCA LEAK NO.: 6312
NOVA PROJECT NO.: M93-445

February 3, 1994

Prepared for:

STEVEN SCOTT WELSH
I.T.F. HILLSBORO COURT
5402 PARKDALE DRIVE, Suite 200
MINNEAPOLIS, MINNESOTA 55416

Prepared by:

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(612) 448-9393

Prepared by:

NOVA ENVIRONMENTAL SERVICES, INC.

Timothy G. Rogers
Environmental Specialist

Reviewed by:

Robert G. Goltz
Environmental Scientist

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Appendix

1.0 INTRODUCTION

1.1 Purpose

Nova Environmental Services, Inc. (Nova) has been contracted by Steven Scott Management, Inc. to investigate a petroleum release at Hillsboro Court Apartments located in New Hope, Minnesota. The purpose of the investigation was to determine the extent of a petroleum release discovered on May 13, 1993 at the site and to assess the potential impact of the release on the public welfare and the environment. The Minnesota Pollution Control Agency (MPCA) has assigned a site identification number of Leak 0006312.

1.2 Scope of Work

The scope of services performed by Nova during the Petroleum Tank Release Investigation included the following:

A. Summarizing previous remedial investigative activities performed by Nova with respect to the petroleum release including: the removal of an underground storage tank (UST) in May, 1993; and soil probe and monitoring well borings advanced in May and June, 1993, respectively;

B. Advancing five soil probes to depths ranging from 8 to 11.5 feet below the ground surface;

C. Drilling three soil borings to depths ranging from 16 to 21 feet below the ground surface;

D. Obtaining soil samples from the soil borings for classification, and screening the samples for organic vapors using an H-NU photoionization detector (PID);

E. Collecting soil samples from the five soil probes and three soil borings for analysis of benzene, ethyl benzene, toluene and xylenes (BETX) and diesel range organics (DRO);

F. Completing the soil borings as ground water monitoring wells;

G. Collecting water samples from the three monitoring wells for laboratory analysis of volatile organic compounds (VOCs) by MDH Method 465D and DRO;

H. Measuring static water table elevations in the monitoring wells to assess the local ground water flow direction;

I. Preparing a Petroleum Tank Release Investigation (PTR) report presenting our data, methods and procedures, conclusions, and recommendations for corrective action.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The site is located in the SW ¼ of the SW ¼ of the SW ¼ of Section 19, Township 118N, Range 21W at 2731 Hillsboro Avenue North, New Hope, Hennepin County, Minnesota (Figure 1). The site is occupied by an apartment and garage/storage buildings. Figure 2 shows the location of the buildings and former location of the 8,000 gallon UST. The site is situated in a commercial and residential area.

2.2 Site Ownership

The UST removed from the site was owned and operated by Steven Scott Welsh I.T.F. Hillsboro Court. The name and address of the person to contact regarding this site is:

Mr. Steve Schachtman
Steven Scott Welsh I.T.F. Hillsboro Court
5402 Parkdale Drive, Suite 200
Minneapolis, Minnesota 55416

2.3 Previous Investigations

2.3.1 UST Removal (May 19, 1993)

Nova personnel observed and documented the removal of a 8,000 gallon UST on May 19, 1993. The UST contained fuel oil, and was located off the southeast corner of the garage/maintenance shop, as shown on Figure 2. Petroleum odors and visually impacted soil and ground water were observed during the UST removal. An "Excavation Report for Petroleum Release Sites" is attached as Appendix A.

The UST had been abandoned in place in 1986 by filling the UST with sand. The UST was removed to comply with state laws regarding UST's.

Soil in the vicinity of the tank was monitored for the presence of organic vapors with an HNU PID. Jar headspace PID monitoring of impacted soil detected readings up to 220 parts per million (ppm). Approximately 99 cubic yards of impacted soil was removed from the excavation. Complete excavation of impacted soil was not attempted due to the presence of ground water in the excavation. Excavated soil stockpiled on the site was thermally treated by C.S. McCrossan Construction, Inc. of Maple Grove, Minnesota.

Petroleum impacted water was encountered in the excavation and the UST at a depth of approximately 3 feet. Approximately 500 gallons of product and impacted ground water was pumped from the excavation into a tanker truck on May 19, 1993. Based on review of analytical laboratory results of ground water collected from the excavation, a one time discharge approval was granted from the Metropolitan Waste Control Commission (MWCC) for disposal of the impacted water to the MWCC disposal site #1, located at 3rd and Commercial, St. Paul, Minnesota.

Two soil samples were collected from the excavation stockpile and submitted for laboratory analysis. Laboratory results, included in the excavation report (Appendix A), indicated the presence of diesel range organics at concentrations of 4100 ppm and 300 ppm, and BETX concentrations ranging from 0.076 to 4.1 ppm. Five soil samples were collected from the sidewalls of the excavation and submitted for laboratory analysis. Laboratory results indicated the presence of DRO at concentrations ranging from 13 to 6200 ppm, and BETX concentrations ranging from 0.076 to 8.3 ppm. No soil samples were obtained for laboratory analysis from beneath the UST due to the high water table.

A petroleum release was reported to the MPCA on May 13, 1993. The MPCA issued a letter dated May 24, 1993 which indicated additional investigation with respect to the

petroleum release was necessary due to elevated petroleum constituents in the ground water. The MPCA letter is included in Appendix B.

2.3.2 Soil Probe Borings (May 28, 1993)

Nova completed five soil probes (SP-1 through SP-5) for investigative purposes on May 28, 1993. The five soil probes were advanced in the locations shown on Figure 2 using a JMC Environmental Sub-Soil Probe. The soil probe consists of a 1 inch by 36 inch long stainless steel sampling tube which is alternatively pounded into the soil and removed. Extensions are added to the sampling tube as it is advanced deeper into the soil. Soil samples are collected in a plastic sleeve which is removed from the sampling tube after each 36 inch sample is collected. The soil probes were advanced to depths ranging from 4 to 6 feet below the ground surface.

Soil consisting of silty clay and silty sand was encountered in the soil probes to the depth of termination. Vapor screening using an HNU PID detected organic vapor concentrations ranging from 2.5 to 70 parts per million (ppm) in the soil samples collected from soil probes SP-1, SP-3 and SP-4. No organic vapors were detected in soil samples collected from soil probes SP-2 and SP-5. Organic vapor readings from soil probes SP-1 through SP-5 are presented in Table 1 and are also shown on the soil probe logs in Appendix C.

Soil samples for laboratory analysis were collected from soil probes SP-1, SP-3, SP-4 and SP-5. DRO concentrations of 330, 2500 and 4400 ppm were detected in soil probes SP-1, SP-3 and SP-4, respectively. Ethyl benzene was detected at 0.018 ppm in soil probe SP-3. No petroleum constituents were detected in the sample collected from soil probe SP-5. Laboratory results for the soil probe samples are summarized in Table 2, and the laboratory report is included in Appendix D.

2.3.3 Off-Site Investigations

A Sinclair Service Station is located southwest of the former UST and adjacent to the site. An investigation was completed by Eneco Tech Environmental Consultants with soil borings and monitoring wells. With approval from Sinclair, Nova personnel contacted Enecotech and obtained soil boring logs and monitoring well construction diagrams which are included in Appendix E.

Nova has reviewed the logs which indicate that petroleum impacted soil was not detected in soil borings SB-06 or SB-07. Monitoring well construction diagram indicated that the monitoring well MW-1 was completed at a depth of 41 feet and MW-2 was completed at a depth of 20 feet. Soil boring logs indicate that petroleum impacted soil was present in MW-2 at a depth from 9 to 16 feet. The extent of impacted soil was defined north and east of monitoring well MW-2. The petroleum release identified on the Hillsboro Court Apartment site was not detected on the Sinclair site.

3.0 METHODS AND PROCEDURES

3.1 Soil Borings

Drilling for investigative purposes was conducted on June 4, 1993. Three soil borings (MW-1, MW-2 and MW-3) were completed at the locations shown on Figure 2. Monitoring wells were subsequently constructed in the three soil borings. All drilling operations were conducted in accordance with the Minnesota Department of Health (MDH) Water Well code. Soil borings were advanced with a truck-mounted drill rig using 4 1/4 inch inside diameter (I.D.), hollow stem augers.

3.1.1 Decontamination of Equipment

All downhole drilling equipment and associated tools were steam cleaned before initiating project work. Additionally, the split-barrel sampler was cleaned between samples in order to minimize cross-contamination. The cleaning procedure consisted of a soap and water wash using a brush and tap water rinse. The soap and water were changed regularly during sampling and between borings.

3.1.2 Soil Sample Collection and Classification

Split-barrel soil samples were collected in the borings at approximately five foot intervals using a 2" outside diameter (O.D.) split-barrel sampler. As the samples were obtained in the field, they were visually and manually classified by a field geologist. Logs of the borings are included in Appendix C.

3.1.3 Soil Organic Vapor Monitoring

The soil samples were immediately field screened for organic vapors using an HNU PID. The soil samples were placed in glass containers and monitored for headspace organic vapors in accordance with MPCA guidelines. The PID contained a 10.2 eV bulb and was calibrated to a isobutylene standard.

3.2 Monitoring Wells

Monitoring wells were constructed in accordance with the MDH water well code. Monitoring well locations were selected based on current and future land accessibility, the former UST location, and estimated ground water flow direction.

3.2.1 Monitoring Well Construction

The monitoring wells were constructed of two inch diameter, polyvinyl chloride (PVC), 0.010 slot, well screen and two inch diameter, threaded PVC riser. The well riser extends from approximately three feet above grade to the well screen. Approximately two-thirds of the well screen was extended into the ground water bearing zone. Annular space between the bore hole and monitoring well screen was backfilled with coarse silica sand. The coarse silica sand pack extends approximately 1.0 foot above the well screen. One foot of bentonite was placed directly above the sand pack. The remainder of the annular space around the well riser, from the top of the bentonite to the ground surface, was filled with cement grout. The portion of the well riser extending above grade is protected by a six inch diameter, steel locking stand pipe. Monitoring well construction details are included in Appendix F.

The monitoring wells were developed by purging at least ten well volumes of water from each well until a majority of the fine-grained sediment was removed. This was done to

ensure the flow characteristic of the well design and to remove possible contaminants introduced during drilling operations.

3.2.2 Ground Water Sampling for Chemical Analysis

Ground water samples were collected on June 29, 1993, from the three monitoring wells. Water level measurements were taken before sampling. Each monitoring well was stabilized using a dedicated teflon bailer with a bottom-closing ball-check valve. A minimum of five monitoring well water volumes were evacuated from the monitoring wells prior to sample collection. A water volume was determined by measuring the length of the column of water present in the well and then calculating the volume of that column of water. Ground water monitoring data sheets are presented in Appendix G.

Ground water samples were collected using dedicated teflon bailers with bottom-closing ball-check valves. Bailers were sealed in plastic prior to being used at the site. Ground water samples were collected in 1 liter and 40 ml glass containers with teflon-lined lids. Appropriate preservation techniques were used in the field and during shipment. The sample bottles were labeled with the project number, location and date of sampling. A chain of custody form was completed and delivered with the samples to the laboratory. Ground water samples were submitted to Interpoll Laboratories, Inc. for analysis of VOCs and DRO.

3.2.3 Ground Water Flow

An elevation survey was performed on all monitoring well locations. The survey procedure included surveying the riser top elevation at each monitoring well. The riser top of monitoring well MW-1 was used as the survey benchmark and was assigned an elevation of 100.00 feet. Other riser tops were surveyed relative to this datum. The distance between the surveyed riser top and ground water was then measured in each monitoring well, using

an electronic water level probe. Water table elevations (Table 3) and the ground water flow direction and gradient (Figure 3) were calculated using these measurements.

3.2.4 Aquifer Characteristics

A slug test was completed in monitoring wells MW-1, MW-2 and MW-3 on July 23, 1993 to assess the hydraulic characteristics of the ground water bearing unit (Appendix H). The procedure consisted of lowering a slug into the monitoring well and allowing the water level to stabilize. The slug was then removed and water levels and elapsed times were recorded. The average hydraulic conductivity of the water bearing unit was calculated using the Bouwer and Rice method. The local ground water flow velocity was calculated to be 2.2 ft/year. Methods and calculations are presented in Appendix H.

4.0 SUBSURFACE INVESTIGATION RESULTS

4.1 Regional Geology/Hydrogeology

Based on geologic maps published by the Minnesota Geological Survey (MGS), surface deposits in the vicinity of the site consist of loamy till derived from glacial deposits. Water well logs for wells in the vicinity of the site show that alternating beds of sand and clay occur to a depth of approximately 150 feet. Sandstone of the St. Peter Formation underlies the unconsolidated deposits.

Based on a review of MGS hydrogeologic maps, near surface ground water in the unconsolidated deposits appears to flow to the east, toward the Mississippi River.

4.2 Local Geology/Hydrogeology

Data from soil borings completed at the site shows that soil generally consists of silty clay and silty sand to a depth ranging from 0 to 21 feet. The ground water table is present at a depth of approximately 6 to 8 feet in the monitoring wells. Interpretation of water table elevation data from the three monitoring wells indicates that ground water flow is generally to the south (Figure 3), with a hydraulic gradient of approximately 0.0058 feet/feet.

4.3 Extent of Hydrocarbon Impact

4.3.1 Organic Vapor Screening

This section incorporates organic vapor data from Nova's investigative work which includes soil probes (Section 2.3.2) and monitoring well borings. Locations of the soil probes and monitoring well boring are shown on Figure 2. The soil probes were completed in May 1993, one week after removal of the fuel oil UST and associated petroleum-impacted soil and ground water. The monitoring well borings were completed in June 1993.

Organic vapor readings were detected in the soil collected from soil probe SP-1, SP-3 and SP-4 at 2.5, 25.0 and 70 ppm, respectively. Soil probes SP-1 and SP-3 were completed in the vicinity of the former UST. Soil probe SP-4 was completed south of the former UST. No organic vapor readings were detected in the soil from soil probes SP-2, SP-5 or monitoring well borings MW-1, MW-2 or MW-3. PID results are presented in Table 1 and included on the soil boring log.

4.3.2 Analytical Results

Laboratory analytical results from the soil probe samples indicate that DRO ranging from 330 to 4400 ppm were detected at SP-1, SP-3 and SP-4. Sampling results are presented in Table 2.

Laboratory analytical results of soil samples collected from monitoring wells MW-1, MW-2 and MW-3 are shown on Table 2. Laboratory analytical results show DRO compounds were detected in soil samples collected from monitoring wells MW-1 and MW-3 at 5.5 and 9.0 ppm, respectively. A foot note on the laboratory report indicates that the results more clearly resemble a phthalate and indicate a sample contaminate. Laboratory analysis of soil

samples collected from monitoring well MW-1, MW-2 or MW-3 did not detect BETX compounds.

Laboratory analytical results of ground water samples collected from the three monitoring wells on June 29, 1993 are shown on Table 4 and the laboratory reports are included in Appendix D. VOCs and GRO compounds were not detected in the ground water samples collected from monitoring wells MW-1, MW-2 or MW-3.

5.0 POTENTIAL RECEPTOR SURVEY

A search of Minnesota Geological Survey (MGS) water well records identified approximately 80 wells within a one-mile radius of the site. Copies of well logs for 12 wells within one-quarter mile are presented in Appendix I. Well locations are included in Appendix I and data from the logs is summarized in Table 5. Eleven of the wells located within one-quarter mile appear to be screened in unconsolidated sand and gravel deposits ranging from depths of 85 to 170 feet. The remaining well is cased into bedrock (St. Peter Sandstone formation). Five of the wells identified are located hydraulically downgradient with respect to the shallow ground water flow.

An organic vapor survey was performed by monitoring specific areas within the basements of the apartment buildings on site. No organic vapors were detected in the floor drains of the basement laundry room or the sump pumps of the boiler rooms. Storm and sewer utility manholes could not be located adjacent to the property.

6.0 CONCLUSIONS AND RECOMMENDATIONS

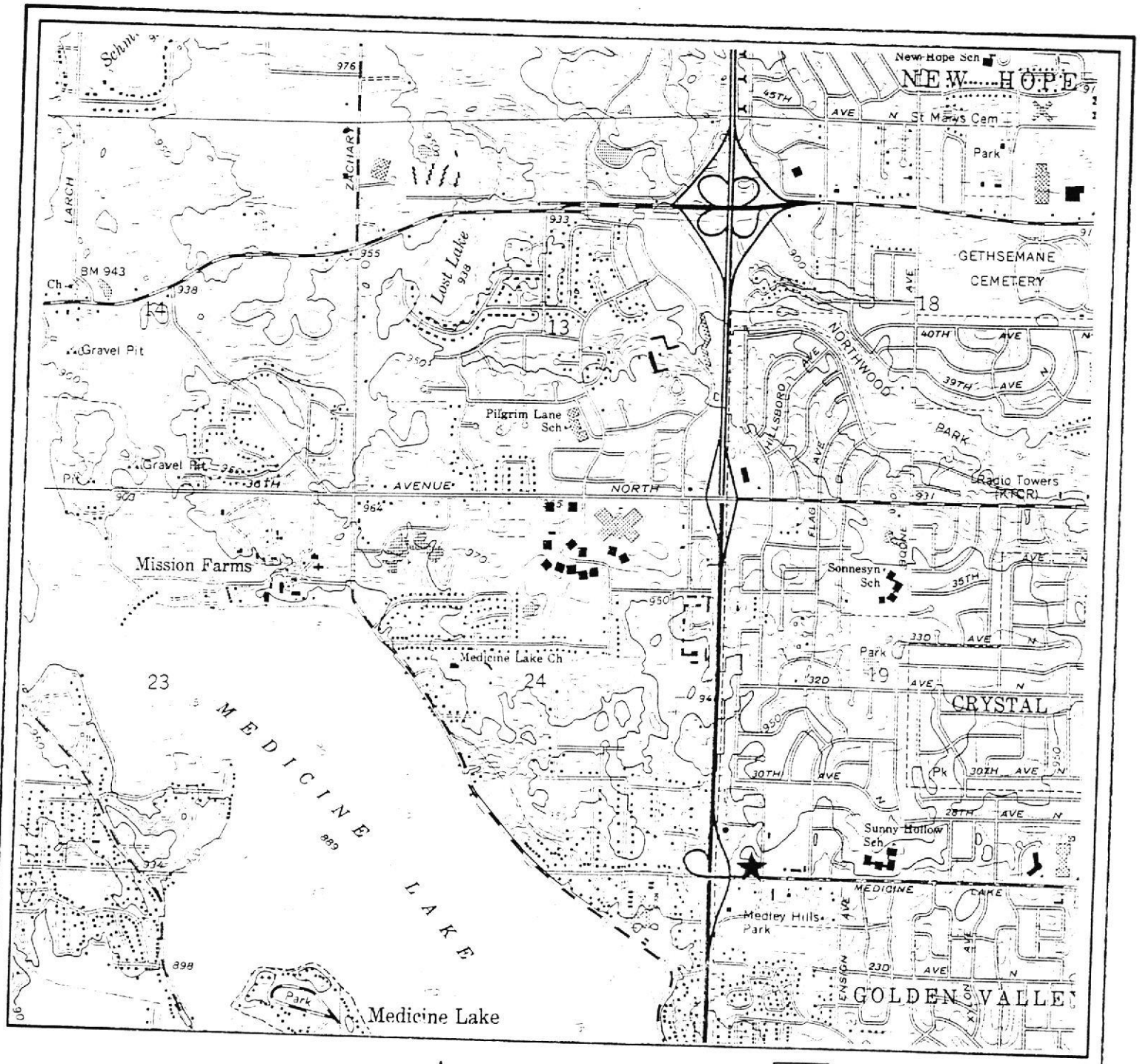
A release of petroleum occurred from the former USTs at this site. The petroleum release has impacted soil and ground water below a depth of approximately 8 feet in the former UST basin. Approximately 99 cubic yards of petroleum-impacted soil was excavated during UST removal. Total excavation of impacted soil was not attempted due to the high water table in the excavation. Approximately 500 gallons of petroleum-impacted ground water encountered during removal of the fuel oil UST was pumped from the excavation.

No VOCs or DRO compounds were detected in the ground water collected from the three monitoring wells. The extent of the soil and ground water impact has been adequately identified, and there is no evidence indicating this release is a threat to the public health or environment. A file search of MGS records did locate public or private water wells hydraulically down gradient of the site with respect to the shallow ground water flow. The wells were screened at a significant deeper depth than the impacted water at the site. There is no evidence of potential off-site receptors of the petroleum release.

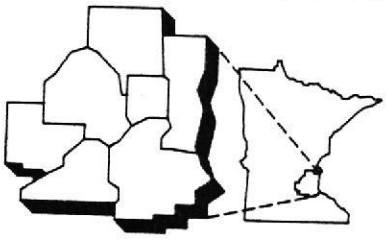
One confirmatory round of ground water sampling should be conducted. Water samples should be analyzed for BETX and DRO. If no significant changes in ground water quality are detected in the confirmatory sampling event, site closure will be recommended. Following site closure, the wells should be abandoned in accordance with MDH requirements.

This report should be submitted to the MPCA Tanks and Spills Section for review.

FIGURES



★ SITE LOCATION



NORTH

0 1/2 1 mile

SCALE

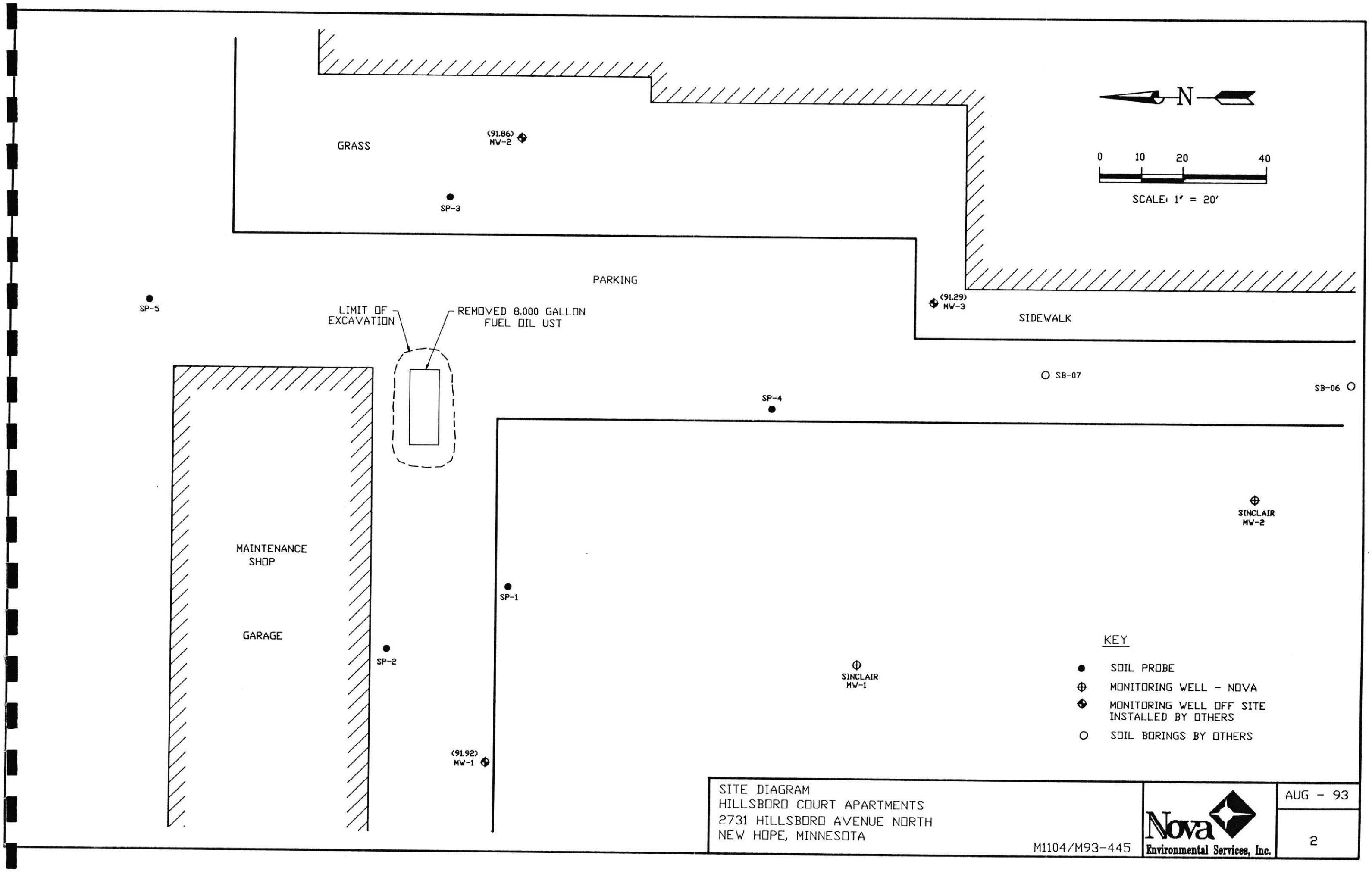
SITE LOCATION MAP
HILLSBORO COURT APARTMENTS
NEW HOPE, MINNESOTA

M93-445

Nova Environmental Services, Inc.

AUG – 93

1



SITE DIAGRAM
HILLSBORO COURT APARTMENTS
2731 HILLSBORO AVENUE NORTH
NEW HOPE, MINNESOTA

M1104/M93-445

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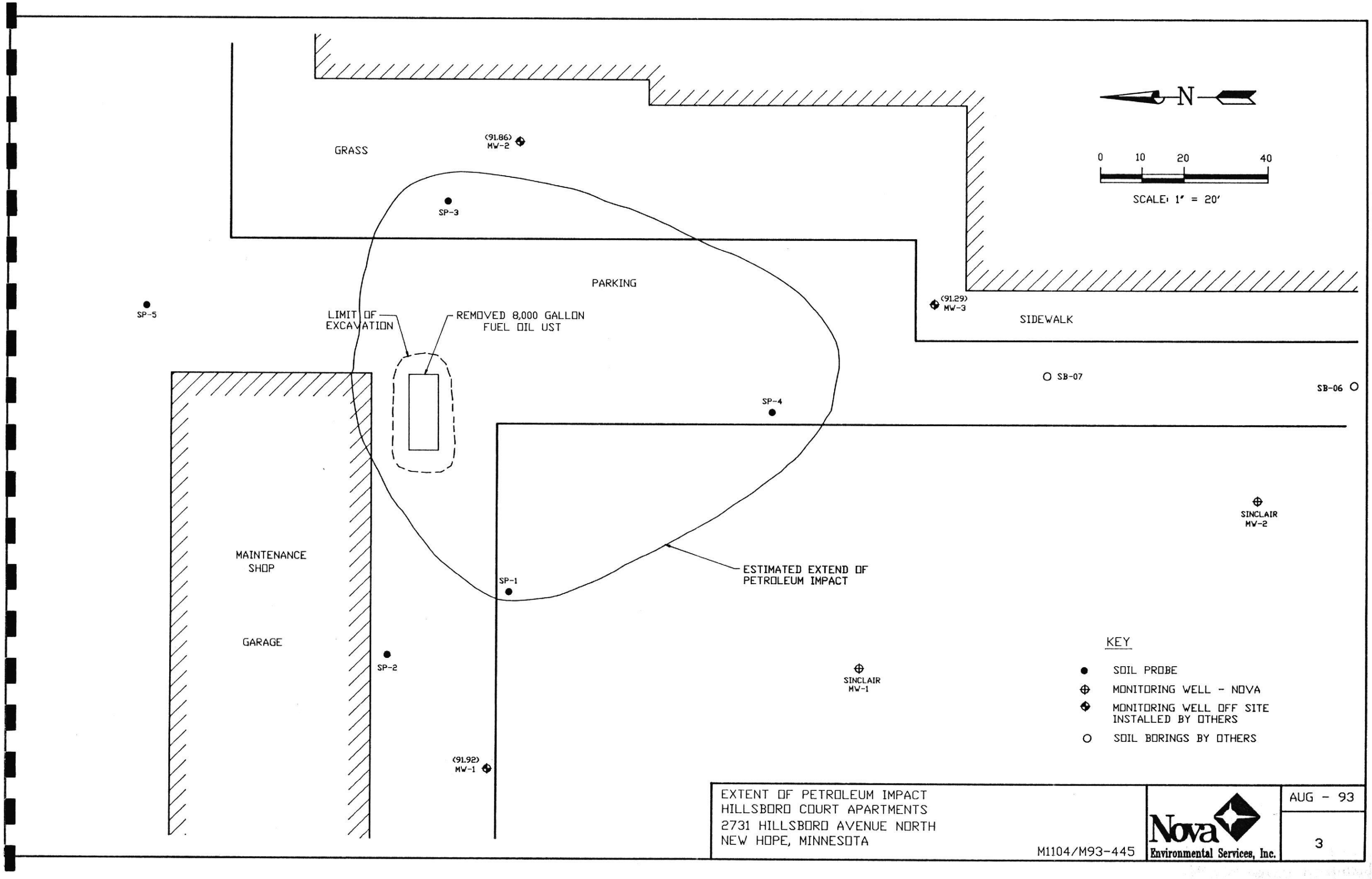
2



EXTENT OF PETROLEUM IMPACT
HILLSBORO COURT APARTMENTS
2731 HILLSBORO AVENUE NORTH
NEW HOPE, MINNESOTA

M1104/M93-445

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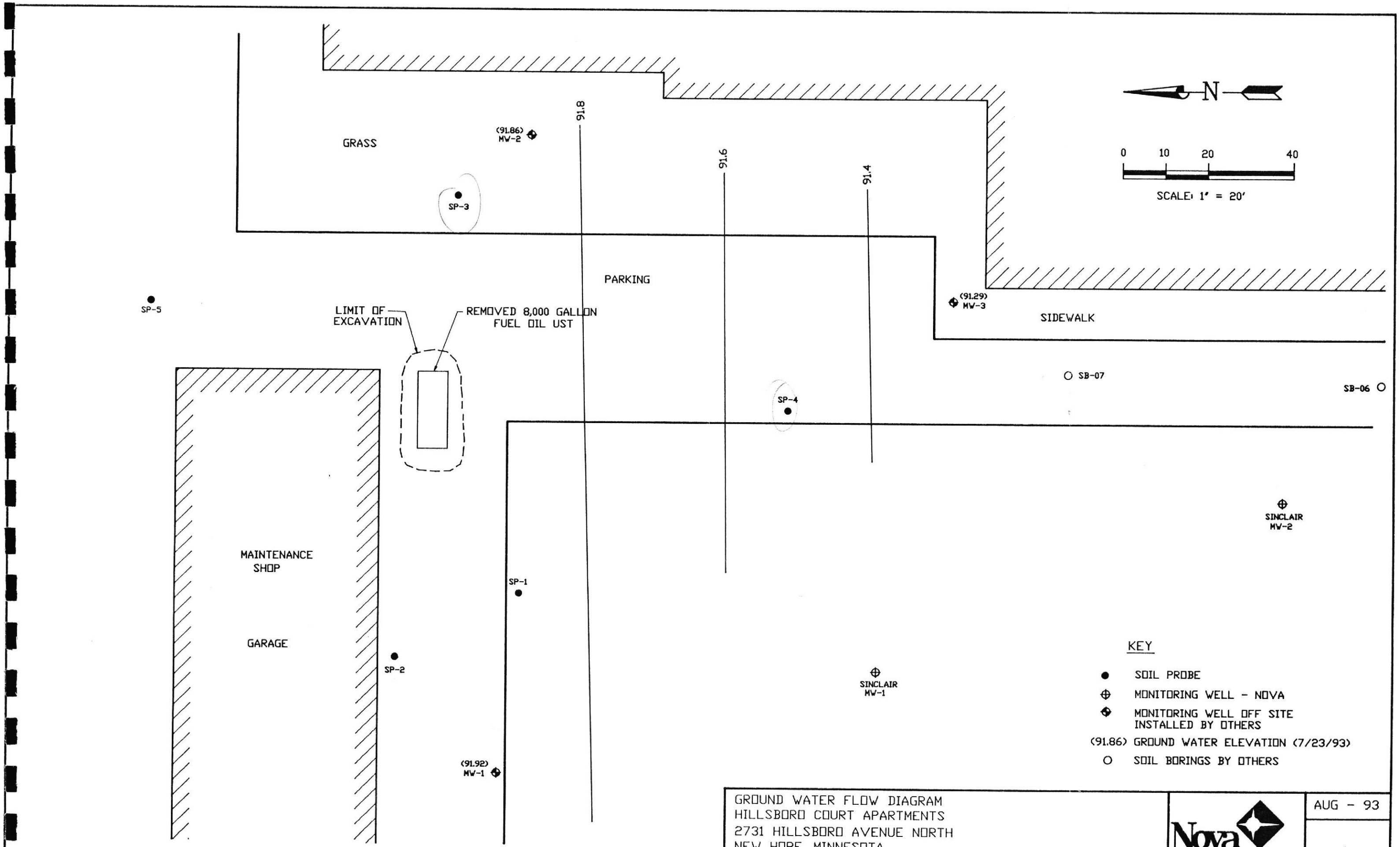
3



GROUND WATER FLOW DIAGRAM
HILLSBORO COURT APARTMENTS
2731 HILLSBORO AVENUE NORTH
NEW HOPE, MINNESOTA

M1104/M93-445

Nova Environmental Services, Inc.

AUG - 93

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TABLES

TABLE 1

PID RESULTS - SOIL

Soil Boring	Soil Sample	Depth (ft)	PID (ppm)
SP-1	SS-1	0-2	0
	SS-2	9-11	0
	SS-3	14-16	2.5
SP-2	SS-1	0-2	0
	SS-2	2-5	0
	SS-3	5-8	0
SP-3	SS-1	0-2	0
	SS-2	2-5	0
	SS-3	5-8	0
	SS-4	8-11.5	25
SP-4	SS-1	0-2	0
	SS-2	2-5	0
	SS-3	5-8	0
	SS-4	8-9	70
SP-5	SS-1	0-2.5	0
	SS-2	25-5	0
	SS-3	5-8	0
	SS-4	9.5-11	0
MW-1	SS-1	4-6	0
	SS-2	9-11	0
	SS-3	14-16	0
	SS-4	19-21	0
MW-2	SS-1	4-6	0
	SS-2	9-11	0
	SS-3	14-16	0
MW-3	SS-1	4-6	0
	SS-2	9-11	0
	SS-3	14-16	0

TABLE 2

LABORATORY RESULTS - SOIL

	Concentrations (ppm)						
Parameter	SP-1 5-28-93 (7 - 8')	SP-3 5-28-93 (11-11.5')	SP-4 5-28-93 (9-9.5')	SP-5 5-28-93 (9.5-11')	MW-1 6-29-93 (9-11')	MW-2 6-29-93 (9-11')	MW-3 6-29-93 (9-11')
Benzene	<0.03	<0.028	NT	NT	<0.027	<0.027	<0.028
Ethyl Benzene	<0.02	0.018	NT	NT	<0.018	<0.018	<0.019
Toluene	<0.032	<0.029	NT	NT	<0.029	<0.029	<0.029
Xylenes	<0.088	<0.081	NT	NT	<0.08	<0.08	<0.081
DRO	330	2500	4400	<1.2	5.5*	<1.1	9.0

Note: Results recorded in mg/kg = milligrams per kilogram = parts per million (ppm).
NT = Not Tested
* Although quantified as diesel range organics as requested, the chromatographic pattern more closely resembles that of a phthalate.

TABLE 3

WATER TABLE ELEVATION SUMMARY

	Top of Riser Elevation (ft)	Date	Depth to Ground Water (ft)	Water Table Elevation (ft)
MW-1	100.00	6/29/93	6.47	93.53
		7/23/93	8.08	91.92
MW-2	101.19	6/29/93	7.88	93.31
		7/23/93	9.33	91.86
MW-3	100.79	6/29/93	8.00	92.79
		7/23/93	9.50	91.29

TABLE 4

LABORATORY RESULTS - GROUND WATER

Concentrations (ppb)

Parameter	MW-1 6-29-93	MW-2 6-29-93	MW-3 6-29-93	
Benzene	<0.047	<0.047	<0.047	0.47
Ethyl Benzene	<0.042	<0.042	<0.042	0.42
Toluene	<0.92	<0.92	<0.92	
Xylenes	<0.46	<0.46	<0.46	
DRO	<26.0	<26.0	<26.0	

Note: Results recorded in ug/l= micrograms per liter = parts per billion (ppb).

TABLE 5
WATER WELL DATA
HILLSBORO APARTMENTS, NEW HOPE

MN Unique Well Number	Surface Elevation (ft)*	Well Depth (ft)	Static Water Level (ft)	Aquifer
204378	905	115	25	Unknown
204379	905	135	22	QBAA-QBAA
204376	925	161	50	Unknown
204371	950	170	80	QBAA-QBAA
204375	925	93	50	Unknown
204372	930	87	50	QBUA-QBUA
203933	935	85	50	QUUU-QUUU
203935	955	100	82	QUUU-QUUU
203941	945	94	73	QUUU-QUUU
203942	940	97	74	QUUU-QUUU
203944	945	90	70	Unknown
203936	925	88	59	QUUU-QUUU

* Elevation $\pm$ 5 feet.

APPENDIX A

EXCAVATION REPORT FOR PETROLEUM RELEASE SITES

EXCAVATION REPORT FOR PETROLEUM RELEASE SITES

Minnesota Pollution Control Agency
Tanks and Spills Section
May 1992

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. Excavations must be done in accordance with "Excavation of Petroleum Contaminated Soil" (Guidance Document 6). Please attach any available preliminary site investigation reports to this excavation report.

Additional pages may be attached. Please type or print clearly.

I. BACKGROUND

A. Site: Hillsboro Court Apartments

Street: 2731 Hillsboro Ave. N.
City, Zip: New Hope, 55428
County: Hennepin

MPCA Site ID#: LEAK00006312

B. Tank Owner/Operator: Steven Scott
Welsh I.T.F. Hillsboro Court
Mailing Address: 5402 Parkdale Drive
Suite #200
City/Zip: Minneapolis, 55416
Telephone: (612) 540-8600

C. Excavating Contractor: F.M. Frattalone
Grading and Excavating
Contact: Mr. Mark Ryan
Telephone: (612) 484-0448
Tank Contractor
Certification Number: 0040

D. Consultant: Nova Environmental
Services, Inc.
Contact: Mr. Rob Goltz
Street/Box: 1107 Hazeltine Blvd., Suite 400
City, Zip: Chaska, 55318
Telephone: (612) 448-9393

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

John Crelly, Fire Inspector

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: May 13, 1993

B. Dates site work performed:

Work Performed	*Date*
8,000 gallon UST uncovered, water sample collected.	May 13, 1993
8,000 gallon UST removed, soil samples collected, impacted soil stockpiled.	May 19, 1993

III. RELEASE INFORMATION

A. Provide the following information for all removed tanks.

Tank 1: *Capacity:* 8,000 gallon

Type: Single wall steel

Age: Unknown

Condition: Slightly corroded, UST had been previously abandoned in place by filling with sand.

Product History: #2 Fuel Oil

Approximate quantity of petroleum released, if known:

Not known, 99 cubic yards of impacted soil removed.

Cause of release:

Not known, impacted soil found around tank.

B. Provide the following information for all existing tanks.

Tank Number	*Capacity*	*Contents*	*Type*	*Age*

No existing tanks.

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

N/A

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

N/A

IV. EXCAVATION

A. Dimensions of excavation: 14' wide x 28' long x 8' deep.

B. Original tank backfill material (sand, gravel, etc.): Medium sand, tank filled with sand.

C. Native soil type (clay, sand, etc.): Sandy Clay

D. Quantity of contaminated soil removed (cubic yards): 99 Cubic Yards

[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?

Ground water was encountered in the excavation at a depth of approximately 3 feet.

F. If a soil boring was necessary, (as indicated in part VI of "Excavation of Petroleum Contaminated Soil" (Guidance Document 6) for sand and silty sand native soils) describe the soil analytical and soil vapor headspace results. Attach the boring logs and laboratory results to this report.

N/A

G. 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.

A water sample was collected from the excavation. Laboratory results indicate 0.005 ppm ethylbenzene, 0.064 ppm xylene, and 220 ppm total hydrocarbons as fuel oil.

Approximately 500 gallons of water was pumped and disposed of with MWCC permission at the 3rd and Commercial site.

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

H. Was bedrock encountered in the excavation? At what depth?

Bedrock was not encountered.

I. Were other unique conditions associated with this site? If so, explain.

Utility lines located directly above excavation.

V. SAMPLING

A. Briefly describe the field methods (including use of a photoionization detector) used to distinguish contaminated from uncontaminated soil:

Field methods used to distinguish contaminated soil from uncontaminated soil included PID jar headspace screening and physical observations.

B. *List soil vapor headspace analysis results. Indicate sampling locations using sample codes (with sampling depths in parentheses), e.g., SV-1 (2 feet), SV-2 (10 feet), etc. Samples collected at different depths at the same locations should be labeled SV-1A (2 feet), SV-1B (4 feet), SV-1C (6 feet), etc. These should correspond with the codes on the site map in part VI. If the sample represents soil from the final extent of the excavation indicate "bottom" or "sidewall" in the bottom/sidewall column.*

Sample Code	Soil Type	Reading ppm	Bottom Sidewall	Sample Code	Soil Type	Reading ppm	Bottom Sidewall
SV-1 (2 feet)	Clay	60	Around Fill	S-1	Sand	40	Stockpile
SV-2 (5 feet)	Clay	60	S. Sidewall	S-2	Silt	65	Stockpile
SV-3 (3 feet)	Sand	70	In Tank				
SV-4 (6 feet)	Sandy Clay	95	Sidewall				
SV-5 (8 feet)	Silt	115	Sidewall				
SV-6 (5 feet)	Silt	52	S. Sidewall				
SV-7 (5 feet)	Sand	30	Middle				
SV-8 (5 feet)	Silt	28	E. Sidewall				
SV-9 (5 feet)	Silty Clay	15	N. Sidewall				
SV-10 (5 feet)	Silty Clay	48	W. Sidewall				

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

Grab samples were collected from freshly exposed soil. Sample locations were selected to best represent soil conditions within the excavation and to comply with current MPCA guidelines. The soil samples were collected and stored in clean laboratory supplied glass containers. The samples were preserved in coolers with ice. Soil samples were submitted to Interpoll Laboratories, Inc. for analysis.

D. *List the appropriate soil sample analytical results from the bottom and sidewalls of the excavation below (refer to "Soil and Ground Water Analysis at Petroleum Release Sites", Guidance Document 11). If the petroleum was not gasoline or fuel oil, attach appropriate analytical results. Code the samples (with sampling depths in parentheses) SS-1 (8 feet), SS-2 (4 feet), etc. These should correspond with the codes on the site map in part VI. Do not include analyses from the stockpiled soils.*

Sample Code	*DRO (ppm)*	*Benzene (ppm)*	*Ethyl-Benzene (ppm)*	*Toluene (ppm)*	*Xylene (ppm)*	*Location*
SS-1 (5 feet)	590	ND	ND	ND	0.14	S. Sidewall
SS-2 (5 feet)	6,200	ND	2	0.46	8.3	Middle
SS-3 (5 feet)	350	ND	ND	0.034	ND	E. Sidewall
SS-4 (5 feet)	13	ND	ND	0.031	ND	N. Sidewall
SS-5 (5 feet)	240	ND	ND	ND	ND	W. Sidewall

NOTE: COPIES OF LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS MUST BE INCLUDED.

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 vapor analyses (e.g., SV-1), soil samples (e.g., SS-1), and soil borings (e.g., SB-1). Also, attach all boring logs; and*
   f. *north arrow and map legend.*

VII. SUMMARY

Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in part VI of the MPCA Document "Excavation of Petroleum Contaminated Soil".

The readings obtained during soil screening and soil samples confirmed by laboratory analysis indicate further investigative work is necessary.

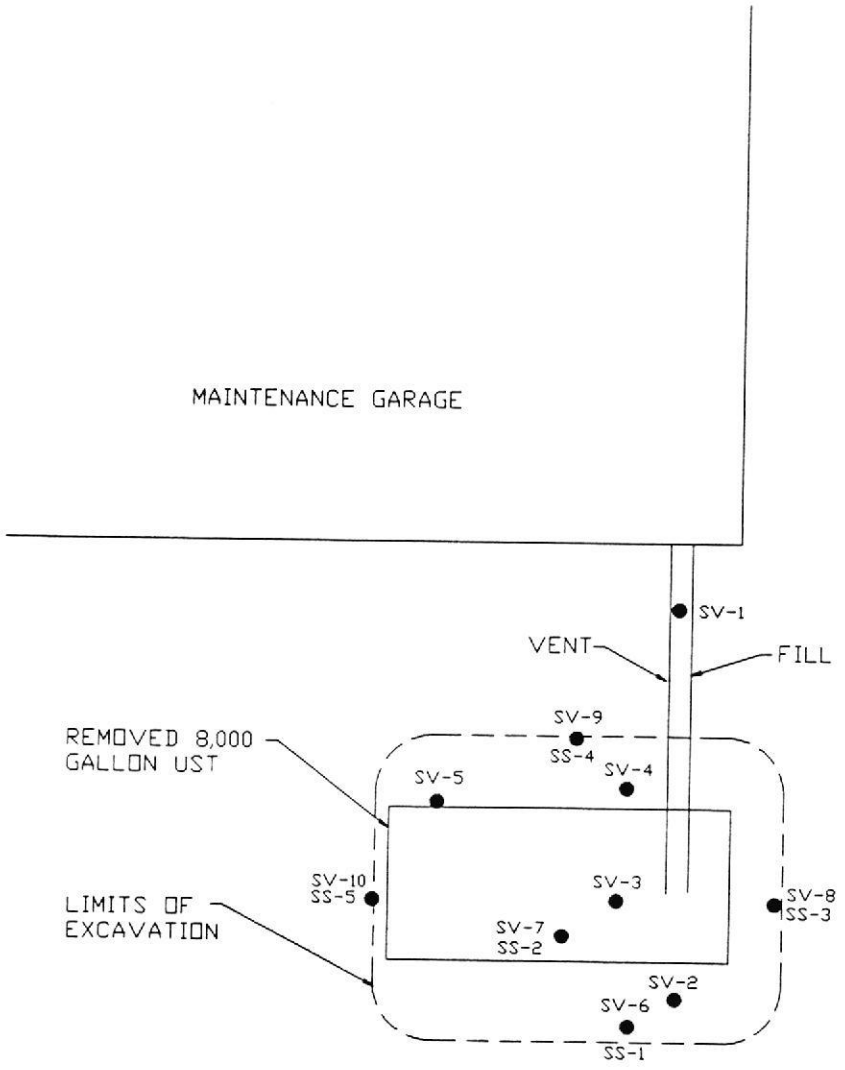
VIII. CONSULTANT

Company Names: Nova Environmental Services, Inc.
Street/Box: 1107 Hazeltine Blvd.
City/Zip: Chaska, MN 55318
Telephone: (612) 448-9393
Contact: Robert Goltz

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

Minnesota Pollution Control Agency
Attn: Chris McLain
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 a section in 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.



KEY

SV-2 SOIL VAPOR LOCATION

SS-1 SOIL SAMPLE

0 5 10 20

SCALE: 1" = 10'

UST REMOVAL
HILLSBORO COURT APARTMENTS
2731 HILLSBORO AVENUE SOUTH
NEW HOPE, MINNESOTA

M1104/M93-445

Nova Environmental Services, Inc.

DEC - 93

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APPENDIX B

MPCA LETTER DATED MAY 24, 1993

Minnesota Pollution Control Agency

May 24, 1993

Mr. Steve Schachtman
Steven Scott Management Company
6005 Wayzata Boulevard
Minneapolis, Minnesota 55416

Dear Mr. Schachtman:

RE: Petroleum Storage Tank Release Investigation and Corrective Action
Site: Hillsboro Court Apartments, 2731 Hillsboro Avenue North, New Hope
Site ID#: LEAK00006312

The Minnesota Pollution Control Agency (MPCA) has received notification that a release of petroleum has occurred from storage tank facilities which you own and/or operate that has resulted in contamination of soil and/or ground water.

Federal and state laws require that persons legally responsible for storage tank releases notify the MPCA of the release, investigate the extent of the release and take actions needed to ensure that the release is cleaned up. A person is considered legally responsible for a tank release if the person owned or operated the tank either during or after the release, unless specifically exempted under the law. See Minn. Stat. § 115C.021 (as amended by Minn. Laws 1992, ch. 414, sec. 2). If you believe that you are not legally responsible for this storage tank release, please provide the MPCA with a written explanation of the grounds for your position within 30 days.

The MPCA staff is requesting you to take the steps necessary to investigate and clean up the release in accordance with the enclosed MPCA technical documents. The MPCA requires that you conduct a site investigation to define the full extent and magnitude of the soil and/or ground water contamination caused by the release. If you know or discover that there is free-floating petroleum on the water table, the MPCA requests that you notify the MPCA within 24 hours. In addition, if any measurable volume of free product is observed in an excavation, borehole, or well, you must IMMEDIATELY begin interim free product recovery (passive hydrophobic/oleophilic collectors, absorbent pads, etc.)

If you are not legally responsible for the release, but hold legal or equitable title to the property where the release occurred, you may volunteer to take corrective action. Responsible persons and volunteers who take corrective action may be eligible for reimbursement for a major portion of the costs of corrective action. The legislature has established the Petroleum Tank Release Cleanup Account to reimburse responsible persons and volunteers. The account is administered by the Petroleum Tank Release Compensation Board (Petro Board). The Petro Board has adopted rules, Minn. Rules ch. 2890, governing application for reimbursement. Questions about eligibility and reimbursement should be directed to the Petro Board at 612/297-1119 or 612/297-4203.

If you have not already done so, the MPCA recommends that you hire a qualified consulting firm that has experience in conducting petroleum release site investigations and in proposing and implementing appropriate corrective actions. The MPCA reserves the right to reject proposed corrective actions if the requirements of the site investigation have not been fulfilled. Please note that, under Minn. Rules pt. 2890.0075, subp. 2, you must solicit a minimum of two competitive proposals on a form prescribed by the Petro Board to ensure that your consulting costs are reasonable.

If you do not respond to this letter within 30 days, the MPCA staff will assume that you do not intend to comply with this request. In this event, the MPCA Commissioner may order you to take corrective action. If you do not comply with the Commissioner's order, it may be enforced in court or, alternatively, the MPCA could spend its own money cleaning up the release and then request the Attorney General to recover its costs from you through legal action. Failure to cooperate with the MPCA in a timely manner will also result in reduced reimbursement from the Petro Board. See Minn. Rules pt. 2890.0065, subp. 1, item C.

MPCA staff has compiled the enclosed factsheets to provide you with the information necessary to complete a successful investigation and cleanup.

If you have any questions concerning this letter or need additional information, contact me at 612/297-8580. Please reference the above LEAK # in all correspondence.

Sincerely,

E. Edwin Baker

for Chris L. McLain
Project Manager
Tanks and Spills Section
Hazardous Waste Division

CLM:nh

Enclosures

cc: Valerie Leone, City Clerk, New Hope
John Crelly, Fire Inspector, New Hope

APPENDIX C

SOIL PROBE AND MONITORING WELL BORING LOGS

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 6/4/03	BORING: MW-1
	SURFACE ELEVATION: 97.4	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
			Asphalt, road base.			
	4	SM	Brown silty SAND with trace gravel, loose to medium dense, moist to wet with thin grey silty clay seams.			
1	6			8	ND	
	9					
2				22	ND	No petroleum odors.
	11					
	14					
3			Grey silty CLAY, little fine to medium sand, very stiff, wet.	35	ND	
	16					
		CL				
	19					
4				14	ND	
	21		END OF BORING AT 21 FEET Water in boring at 7.2 feet.			PID values were obtained using the jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 6/4/93	BORING: MW-2
	SURFACE ELEVATION: 98.6	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
	2		Grass and topsoil.			
	4					
1	6	SM	Brown fine to medium silty SAND, and silty clay seams, loose to medium dense, moist to wet.	6	ND	
	9					
2	11			12	ND	No petroleum odor.
	14					
3				13	ND	
			END OF BORING AT 16 FEET Water in boring at 8.5 feet.			PID values obtained using the jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 6/4/93	BORING: MW-3
	SURFACE ELEVATION: 98.4	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
	4	SM	Grass and topsoil. Brown silty SAND, trace silty clay, trace gravel, loose, moist to wet.			
1	6			6	ND	
	9					
2	11			13	ND	No petroleum odors.
	14		Brown medium to coarse SAND, medium dense, wet.			
3		SP	Grey silty clay, very stiff, wet.	12	ND	
			END OF BORING AT 16 FEET Water in boring at 8.5 feet.			PID values were obtained using the jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 5/28/93	BORING: SP-1
	SURFACE ELEVATION: NA	SCALE: 1" = 6′

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
1	2.5	CL	Top soil . Grey silty CLAY, trace sand, moist.		ND	
2					ND	
3	5	SP	Brown medium to coarse SAND.			Petroleum odor.
		CL	Grey silty CLAY, wet.		2.5	
			END OF SOIL PROBE AT 8 FEET.			PID values were obtained using the jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 5/28/93	BORING: SP-2
	SURFACE ELEVATION: NA	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
1	2.5	CL	Asphalt. Grey silty CLAY with silt and sand seams, moist.		ND	
2					ND	
3	5	SM	Brown silty SAND, wet.		ND	No petroleum odors.
			END OF SOIL BORING AT 8 FEET.			PID values were obtained using the jar headspace technique. ND = Not protected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 5/28/93	BORING: SP-3
	SURFACE ELEVATION: NA	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
1	2.5	SC	Top soil. Grey Sandy CLAY with clay and sand seams, moist.		ND	
2					ND	
3	5	CL	Brown silty CLAY, wet.		ND	
4	8	SP	Grey medium to coarse SAND.		25	Strong petroleum odor.
			END OF SOIL BORING AT 11.5 FEET.			PID values were obtained using the jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 5/28/93	BORING: SP-4
	SURFACE ELEVATION: NA	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
1	2.5	SC	Brown to grey sandy CLAY, moist.		ND	
2	5	CL	Grey to brown silty CLAY, some brown fine to coarse sand, wet.		ND	
3	7.5	SP	Grey medium to coarse SAND with some silt and gravel, wet.		ND	Strong petroleum odor at 9.5 feet.
4					70	
			END OF SOIL PROBE AT 9.5 FEET			PID values were obtained using jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

BORING LOG

PROJECT: Hillsboro Court Apartments New Hope, Minnesota	DATE: 5/28/93	BORING: SP-5
	SURFACE ELEVATION: NA	SCALE: 1" = 6'

SAMPLE NO.	DEPTH FEET	ASTM D2487	DESCRIPTION - ASTM D2488 (See Report & Descr. Terminology)	"N"	HNU ppm	NOTES
	2		Asphalt. Brown sandy CLAY, moist.			
1		SC			ND	
	5		Brown fine to coarse SAND, trace gravel, sandy clay seam, wet.			
2					ND	
	8					
3					ND	
	9.5	SP				No petroleum odors.
4					ND	
			END OF SOIL PROBE AT 11 FEET.			PID values were obtained using jar headspace technique. ND = Not detected.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

APPENDIX D

SOIL AND GROUND WATER LABORATORY RESULTS

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

May 14, 1993

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: Rob Goltz

LABORATORY REPORT: #8841
NOVA PROJECT: #M93-445

SAMPLES COLLECTED: May 13, 1993
SAMPLES RECEIVED: May 14, 1993

Sample Identification:			W-1
Sample Type:			Water
Laboratory Log Number:			8841-01
Parameter	Units	Target Detection Limit	
EPA Method SW-846, 8020:			
Benzene	ug/L	0.47	< 2.4
Toluene	ug/L	0.50	< 2.5
Ethylbenzene	ug/L	0.33	5.0
Xylenes	ug/L	1.4	64
Dilution factor			5[a]

Sample Identification:	W-1
Sample Type:	Water
Laboratory Log Number:	8841-01

Parameter	Units	Target Detection Limit	
EPA Method SW-846, 3510/8015: Total hydrocarbons, as fuel oil #2	ug/L	43	220000
Dilution factor			50[b]

Respectfully submitted,

Wayne A. Olson, Manager
Organic Chemistry Group

WAO/cg
Invoice Enclosed
< = less than

[a]Sample was diluted as indicated due to matrix interferences. Reported values represent the concentration in the original undiluted sample, i.e., instrumental results were multiplied by the dilution factor prior to reporting. Target detection limits are given. The detection limit applicable to the sample may be obtained by multiplying the target detection limit by the dilution factor.

[b]Sample extract was diluted as indicated to accommodate the analyte concentration. Reported value represents the concentration in the original undiluted sample, i.e., instrumental result was multiplied by the dilution factor prior to reporting. Target detection limit is given. The detection limit applicable to the sample may be obtained by multiplying the target detection limit by the dilution factor.

All analyses were performed using EPA or other recognized methodologies.
All units are on an "as received" basis unless otherwise indicated.

Nova
Environmental Services, Inc.

Minneapolis Office ☒
1107 Hazeltine Blvd. Ste. 420
Chaska, MN 55318
(612) 448-9393
Fax # 612-448-9572

Chain of Custody Record

Chicago Office ☐
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court

Project Number: M93-442

445 Uic Rd & Gaitz 5/14/93 0905

Project Manager: Rob Goltz

Laboratory: Enterpoll, 4525 Bald Road, Circle Pines

Special Instructions: RUSH By Fri. BMG Mon 7:00Am

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: BETX	Requested Analysis: TPH as Fuel Oil	Sample Description / Remarks
W-1	5/13/93	2, 40ml, 1, 1ltr.	Tank water	X	X	water from UST 8841-01

Sampler (Signature)	Affiliation	Date	Time
Robert D Goltz	NOVA	5/13/93	6:18

Relinquished By	Affiliation	Date	Time
Robert D Goltz	Nova	5/13/93	6:45pm
[illegible]	Dep	5/14/93	7:48

Received By	Affiliation	Date	Time
[illegible]	Dep	5-14	7:14
Bobby	Enterpoll	5/14	0745

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

June 9, 1993

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: Rob Goltz

LABORATORY REPORT: #8913
NOVA PROJECT: #M93-445

SAMPLES COLLECTED: May 19, 1993
SAMPLES RECEIVED: May 21, 1993

Sample Identification:	S-1
Sample Type:	Soil
Laboratory Log Number:	8913-01

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	85.7
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.028	< 0.056
Toluene	mg/Kg	0.029	0.33
Ethylbenzene	mg/Kg	0.019	0.95
Xylenes	mg/Kg	0.082	4.1
Dilution factor			2[a]
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	4100
Dilution factor			100[b]

Sample Identification:	S-2
Sample Type:	Soil
Laboratory Log Number:	8913-02

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	80.5
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.030	< 0.030
Toluene	mg/Kg	0.031	< 0.031
Ethylbenzene	mg/Kg	0.020	0.076
Xylenes	mg/Kg	0.087	0.72
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	300
Dilution factor			2[b]

Sample Identification:	SS-1
Sample Type:	Soil
Laboratory Log Number:	8913-03

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	80.2
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.030	< 0.030
Toluene	mg/Kg	0.031	< 0.031
Ethylbenzene	mg/Kg	0.020	< 0.020
Xylenes	mg/Kg	0.087	0.14
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	590
Dilution factor			5[b]

Sample Identification:	SS-2
Sample Type:	Soil
Laboratory Log Number:	8913-04

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	84.5
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.028	< 0.057
Toluene	mg/Kg	0.030	0.46
Ethylbenzene	mg/Kg	0.019	2.0
Xylenes	mg/Kg	0.083	8.3
Dilution factor			2[a]
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	6200
Dilution factor			50[b]

Sample Identification:	SS-3
Sample Type:	Soil
Laboratory Log Number:	8913-05

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	80.4
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.030	< 0.030
Toluene	mg/Kg	0.031	0.034
Ethylbenzene	mg/Kg	0.020	< 0.020
Xylenes	mg/Kg	0.087	< 0.087
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	350
Dilution factor			5[b]

Sample Identification:	SS-4
Sample Type:	Soil
Laboratory Log Number:	8913-06

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	79.4
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.030	< 0.030
Toluene	mg/Kg	0.031	0.031
Ethylbenzene	mg/Kg	0.020	< 0.020
Xylenes	mg/Kg	0.088	< 0.088
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.3	13

Sample Identification:	SS-5
Sample Type:	Soil
Laboratory Log Number:	8913-07

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	77.7
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.031	< 0.031
Toluene	mg/Kg	0.032	< 0.032
Ethylbenzene	mg/Kg	0.021	< 0.021
Xylenes	mg/Kg	0.090	< 0.090
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.3	240

Footnotes:

[a]Sample extract was diluted as indicated to accommodate the analyte with the highest concentration. Reported values represent the concentration in the original undiluted sample, i.e., instrumental results were multiplied by the dilution factor prior to reporting. Target detection limits are given. The detection limit applicable to the sample may be obtained by multiplying the target detection limit by the dilution factor.

[b]Sample extract was diluted as indicated to accommodate the analyte concentration. Reported value represents the concentration in the original undiluted sample, i.e., instrumental result was multiplied by the dilution factor prior to reporting. Target detection limit is given. The detection limit applicable to the sample may be obtained by multiplying the target detection limit by the dilution factor.

Respectfully submitted,

for Wayne A. Olson, Manager
Organic Chemistry Group

WAO/sk
Invoice Enclosed
< = less than

All analyses were performed using EPA or other recognized methodologies.
All units are on a "dry weight" basis unless otherwise indicated.

Nova Environmental Services, Inc.

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1107 Hazeltine Blvd. Ste. 420
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Fax # 612-448-9572

Chain of Custody Record

Chicago Office ☐
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court Apartments

Project Number: M93-445

Project Manager: Rob Goltz

Laboratory: Interpoll Laboratories
Circle Pines, MN

Special Instructions: NORMAL TURN AROUND

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: BETX	Requested Analysis: DRO	Sample Description / Remarks			
1	5/19/93	1,2oz sep 1,4oz glass 1,4oz plast	S-1 Stockpile, sand	X	X	Soil	HNU	40	8913-01
2			S-2 Stockpile, silt	X	X	Soil		65	-02
3			SS-1 South Sidewall 5'	X	X	Soil		52	-03
4			SS-2 Middle 5'	X	X	Soil		30	-04
5			SS-3 East 5' sidewall	X	X	Soil		28	-05
6			SS-4 North sidewall 5'	X	X	Soil		15	-06
7			SS-5 West sidewall 5'	X	X	Soil		48	-07

Sampler (Signature)	Relinquished By	Affiliation	Date	Time	Received By	Affiliation	Date	Time
Robert D Goltz	R Sanford	Courier	5/20		Bobby	Interpoll	5/21/93	0745
Affiliation: Nova							On Ice	
Date: 5/20/93	Time:							

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

June 18, 1993

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: Rob Goltz

LABORATORY REPORT: #9006
NOVA PROJECT: #M93-445

SAMPLES COLLECTED: May 28, 1993
SAMPLES RECEIVED: May 28, 1993

Sample Identification:	B-1 7-8'
Sample Type:	Soil
Laboratory Log Number:	9006-01

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	79.1
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.030	< 0.030
Toluene	mg/Kg	0.032	< 0.032
Ethylbenzene	mg/Kg	0.020	< 0.020
Xylenes	mg/Kg	0.088	< 0.088
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.3	330
Dilution factor			2[a]

Sample Identification:	B-3
Sample Type:	11-11.5' Soil
Laboratory Log Number:	9006-02

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	86.7
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.028	< 0.028
Toluene	mg/Kg	0.029	< 0.029
Ethylbenzene	mg/Kg	0.018	< 0.018
Xylenes	mg/Kg	0.081	< 0.081
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	2500
Dilution factor			50[a]

Sample Identification:	B-4
Sample Type:	9-9.5' Soil
Laboratory Log Number:	9006-03

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	90.2
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.1	4400
Dilution factor			20[a]

Sample Identification:	B-5
Sample Type:	9.5-11'
Laboratory Log Number:	Soil
	9006-04

Parameter	Units	Target Detection Limit		
EPA Method 160.3:				
Total solids	%	0.1		86.7
WI DNR Method DRO:				
Diesel range organics	mg/Kg	1.2	<	1.2

Respectfully submitted,

Wayne A. Olson, Manager
Organic Chemistry Group

WAO/sk
Invoice Enclosed
< = less than

[a]Sample extract was diluted as indicated to accommodate the analyte concentration. Reported value represents the concentration in the original undiluted sample, i.e., instrumental result was multiplied by the dilution factor prior to reporting. Target detection limit is given. The detection limit applicable to the sample may be obtained by multiplying the target detection limit by the dilution factor.

All analyses were performed using EPA or other recognized methodologies.
All units are on a "dry weight" basis unless otherwise indicated.

Nova Environmental Services, Inc.

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Chain of Custody Record

Chicago Office [ ]
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court

Project Number: M93-445

Project Manager: Rob Golf

Laboratory: Interpoll

Special Instructions: NORMAL Turnaround

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: BETX	Requested Analysis: DRO	Sample Description / Remarks
1	5/28	1,2oz 2,4oz	B-1 7-8'	X	X	Soil 2.5 9006-01
2	5/28	1,2oz 2,4oz	B-3 11-11.5	X	X	25 -02
3	5/27	1,2oz 1,4oz	B-4 9-9.5		X	70 -03
4	5/28	1,2oz 1,4oz	B-5 9.5-11		X	ND -04

Sampler (Signature)	Relinquished By	Affiliation	Date	Time	Received By	Affiliation	Date	Time
Rob Golf	Michael C. Lee	Nova	5-28-93	4:30pm	Bob Sang	Interpoll Onico	5/28/93	1630
Affiliation: NOVA								
Date: 5/28/93	Time: 3:40 pm							

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

June 29, 1993

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: Rob Goltz

LABORATORY REPORT: #9073
NOVA PROJECT: #M93-445

SAMPLES COLLECTED: June 4, 1993
SAMPLES RECEIVED: June 7, 1993

Sample Identification:			S-1
Sample Type:			Soil
Laboratory Log Number:			9073-01
Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	87.7
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.027	< 0.027
Toluene	mg/Kg	0.029	< 0.029
Ethylbenzene	mg/Kg	0.018	< 0.018
Xylenes	mg/Kg	0.080	< 0.080
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.1	5.5[a]

Sample Identification:	S-3
Sample Type:	Soil
Laboratory Log Number:	9073-03

Parameter	Units	Target Detection Limit	
EPA Method 160.3:			
Total solids	%	0.1	85.9
EPA Method SW-846, 8020:			
Benzene	mg/Kg	0.028	< 0.028
Toluene	mg/Kg	0.029	< 0.029
Ethylbenzene	mg/Kg	0.019	< 0.019
Xylenes	mg/Kg	0.081	< 0.081
WI DNR Method DRO:			
Diesel range organics	mg/Kg	1.2	9.0[a]

Respectfully submitted,

Wayne A. Olson, Manager
Organic Chemistry Group

WAO/sk
Invoice Enclosed
< = less than

[a]Although quantified as diesel range organics as requested, the chromatographic pattern more closely resembles that of a phthalate.

All analyses were performed using EPA or other recognized methodologies.
All units are on a "dry weight" basis unless otherwise indicated.

Sample Identification:	S-2
Sample Type:	Soil
Laboratory Log Number:	9073-02

Parameter	Units	Target Detection Limit		
EPA Method 160.3:				
Total solids	%	0.1		87.6
EPA Method SW-846, 8020:				
Benzene	mg/Kg	0.027	<	0.027
Toluene	mg/Kg	0.029	<	0.029
Ethylbenzene	mg/Kg	0.018	<	0.018
Xylenes	mg/Kg	0.080	<	0.080
WI DNR Method DRO:				
Diesel range organics	mg/Kg	1.1	<	1.1

Nova Environmental Services, Inc.

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Chaska, MN 55318
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Fax # 612-448-9572

Chain of Custody Record

Chicago Office [ ]
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court Apts

Project Number: M.93-445

Project Manager: R G G

Laboratory: Interpoll

Special Instructions: Normal Turnaround

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: BETX	Requested Analysis: DRO	Sample Description / Remarks
S-1	6/4/93	2,40Z 1,20Z	MW-1 boring @ 9-11 feet	X	X	Soil 9073-01
S-2	"	"	MW-2 " @ "	X	X	Soil -02
S-3	"	"	MW-3 " @ "	X	X	Soil -03

Sampler (Signature): T C Rogers

Affiliation: NOVA

Date: 6/4/93

Time: 3:30 p

Relinquished By	Affiliation	Date	Time	Received By	Affiliation	Date	Time
T C Rogers	NOVA	6/7/93	11:15 A	Linda Wynne - Interpoll		6/7/93	2:35
on ice				Steve Graf			
				Y2 Cooler			

interpoll

INTERPOLL LABORATORIES, INC.
4500 BALL ROAD N.E.
CIRCLE PINES, MINNESOTA 55014-1819
TEL: 612/786-6020
FAX: 612/786-7854

July 21, 1993

Nova Environmental Services, Inc.
1107 Hazeltine Blvd., Suite 420
Chaska, Minnesota 55318

Attention: Rob Goltz

LABORATORY REPORT: #9342
NOVA PROJECT: #M93-445

SAMPLES COLLECTED: June 29,1 993
SAMPLES RECEIVED: July 1, 1993

Sample Identification:			MW-1	MW-2	MW-3
Sample Type:			Water	Water	Water
Laboratory Log Number:			9342-01	9342-02	9342-03
Parameter	Units	Target Detection Limit			
WI DNR DRO Method:					
Diesel range organics	ug/L	26	< 26	< 26	< 26
Method MDH 465-D:					
Dichlorodifluoromethane	ug/L	0.91	< 0.91	< 0.91	< 0.91
Chloromethane	ug/L	1.4	< 1.4	< 1.4	< 1.4
Vinyl chloride	ug/L	0.30	< 0.30	< 0.30	< 0.30
Bromomethane	ug/L	0.23	< 0.23	< 0.23	< 0.23
Chloroethane	ug/L	0.26	< 0.26	< 0.26	< 0.26
Dichlorofluoromethane	ug/L	0.90	< 0.90	< 0.90	< 0.90
Trichlorofluoromethane	ug/L	0.87	< 0.87	< 0.87	< 0.87
1,1-Dichloroethene	ug/L	0.66	< 0.66	< 0.66	< 0.66
Allyl chloride	ug/L	0.35	< 0.35	< 0.35	< 0.35
Methylene chloride	ug/L	3.0	< 3.0	< 3.0	< 3.0
trans-1,2-Dichloroethene	ug/L	0.28	< 0.28	< 0.28	< 0.28
1,1-Dichloroethane	ug/L	0.16	< 0.16	< 0.16	< 0.16
2,2-Dichloropropane	ug/L	0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	ug/L	0.28	< 0.28	< 0.28	< 0.28
Bromochloromethane	ug/L	0.31	< 0.31	< 0.31	< 0.31
Chloroform	ug/L	0.33	< 0.33	< 0.33	< 0.33

Sample Identification:			MW-1	MW-2	MW-3
Sample Type:			Water	Water	Water
Laboratory Log Number:			9342-01	9342-02	9342-03
Parameter	Units	Target Detection Limit			
Method MDH 465-D (continued):					
1,1,2-Trichlorotrifluoroethane	ug/L	0.90	< 0.90	< 0.90	< 0.90
1,1,1-Trichloroethane	ug/L	1.4	< 1.4	< 1.4	< 1.4
Carbon tetrachloride	ug/L	0.44	< 0.44	< 0.44	< 0.44
1,1-Dichloro-1-propene	ug/L	0.18	< 0.18	< 0.18	< 0.18
1,2-Dichloroethane	ug/L	0.47	< 0.47	< 0.47	< 0.47
Trichloroethene	ug/L	0.58	< 0.58	< 0.58	< 0.58
1,2-Dichloropropane	ug/L	0.35	< 0.35	< 0.35	< 0.35
2,3-Dichloro-1-propene	ug/L	0.35	< 0.35	< 0.35	< 0.35
Dibromomethane	ug/L	0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	ug/L	0.56	< 0.56	< 0.56	< 0.56
trans-1,3-Dichloropropene	ug/L	0.18	< 0.18	< 0.18	< 0.18
cis-1,3-Dichloropropene	ug/L	0.19	< 0.19	< 0.19	< 0.19
2-Chloroethylvinyl ether	ug/L	0.70	< 0.70	< 0.70	< 0.70
1,1,2-Trichloroethane	ug/L	1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	ug/L	0.45	< 0.45	< 0.45	< 0.45
1,3-Dichloropropane	ug/L	0.38	< 0.38	< 0.38	< 0.38
Dibromochloromethane	ug/L	1.1	< 1.1	< 1.1	< 1.1
1,2-Dibromoethane	ug/L	0.26	< 0.26	< 0.26	< 0.26
Chlorobenzene	ug/L	0.23	< 0.23	< 0.23	< 0.23
1,1,1,2-Tetrachloroethane	ug/L	0.30	< 0.30	< 0.30	< 0.30
Bromoform	ug/L	0.39	< 0.39	< 0.39	< 0.39
Bromobenzene	ug/L	0.42	< 0.42	< 0.42	< 0.42
1,2,3-Trichloropropane	ug/L	0.58	< 0.58	< 0.58	< 0.58
Pentachloroethane	ug/L	1.7	< 1.7	< 1.7	< 1.7
1,1,2,2-Tetrachloroethane	ug/L	2.1	< 2.1	< 2.1	< 2.1
2-Chlorotoluene	ug/L	0.29	< 0.29	< 0.29	< 0.29
4-Chlorotoluene	ug/L	0.20	< 0.20	< 0.20	< 0.20
1,3-Dichlorobenzene	ug/L	0.46	< 0.46	< 0.46	< 0.46
1,4-Dichlorobenzene	ug/L	0.69	< 0.69	< 0.69	< 0.69
1,2-Dichlorobenzene	ug/L	0.49	< 0.49	< 0.49	< 0.49
1,2-Dibromo-3-chloropropane	ug/L	0.34	< 0.34	< 0.34	< 0.34
1,2,4-Trichlorobenzene	ug/L	0.25	< 0.25	< 0.25	< 0.25
Hexachlorobutadiene	ug/L	0.14	< 0.14	< 0.14	< 0.14
1,2,3-Trichlorobenzene	ug/L	0.30	< 0.30	< 0.30	< 0.30
Ethyl ether	ug/L	1.1	< 1.1	< 1.1	< 1.1
Acetone	ug/L	22	< 22	< 22	< 22
Tetrahydrofuran	ug/L	8.7	< 8.7	< 8.7	< 8.7
Methyl ethyl ketone	ug/L	3.9	< 3.9	< 3.9	< 3.9
Methyl tertiary butyl ether	ug/L	0.52	< 0.52	< 0.52	< 0.52

Sample Identification:			MW-1	MW-2	MW-3
Sample Type:			Water	Water	Water
Laboratory Log Number:			9342-01	9342-02	9342-03
Parameter	Units	Target Detection Limit			
Method MDH 465-D (continued):					
Benzene	ug/L	0.47	< 0.47	< 0.47	< 0.47
Methyl isobutyl ketone	ug/L	1.6	< 1.6	< 1.6	< 1.6
Toluene	ug/L	0.92	< 0.92	< 0.92	< 0.92
Ethylbenzene	ug/L	0.42	< 0.42	< 0.42	< 0.42
m/p-Xylene	ug/L	0.46	< 0.46	< 0.46	< 0.46
o-Xylene	ug/L	0.25	< 0.25	< 0.25	< 0.25
Styrene	ug/L	0.35	< 0.35	< 0.35	< 0.35
Isopropylbenzene	ug/L	1.8	< 1.8	< 1.8	< 1.8
n-Propylbenzene	ug/L	0.24	< 0.24	< 0.24	< 0.24
1,3,5-Trimethylbenzene	ug/L	0.21	< 0.21	< 0.21	< 0.21
tert-Butylbenzene	ug/L	0.41	< 0.41	< 0.41	< 0.41
1,2,4-Trimethylbenzene	ug/L	0.30	< 0.30	< 0.30	< 0.30
sec-Butylbenzene	ug/L	0.23	< 0.23	< 0.23	< 0.23
p-Isopropyltoluene	ug/L	0.17	< 0.17	< 0.17	< 0.17
n-Butylbenzene	ug/L	0.27	< 0.27	< 0.27	< 0.27
Naphthalene	ug/L	0.56	< 0.56	< 0.56	< 0.56

Respectfully submitted,

Gregg W. Hodne

for Wayne A. Olson, Manager
Organic Chemistry Group

WAO/sk
Invoice Enclosed
< = less than

All analyses were performed using EPA or other recognized methodologies.
All units are on an "as received" basis unless otherwise indicated.

Nova Environmental Services, Inc.

Minneapolis Office [X]
1107 Hazeltine Blvd. Ste. 420
Chaska, MN 55318
(612) 448-9393
Fax # 612-448-9572

Chain of Custody Record

Chicago Office [ ]
O'Hare Atrium Office Plaza, Ste 170
2860 River Road
Des Plaines, Il 60018
(312) 803-4510
Fax # 312-803-0780

Name of Project: Hillsboro Court Apts

Project Number: M93-445

Project Manager: RGG

Laboratory: Interpoll

Special Instructions: Normal Turnaround

Sample No.	Date	No. & Vol. of Containers	Sample Location	Requested Analysis: MDH 465.D	DRO					Sample Description / Remarks
9342-01	6/29/93	3, 40ml 1, 1 liter	MW-1	X	X					water
02	"	"	MW-2	X	X					"
03	"	"	MW-3	X	X					"

Sampler (Signature)	Affiliation	Date	Time
[signature]	NOVA	6/29/93	4 50 p

Relinquished By	Affiliation	Date	Time
TG Rogers	NOVA	7/1/93	8 00 A
K Wardell	443		

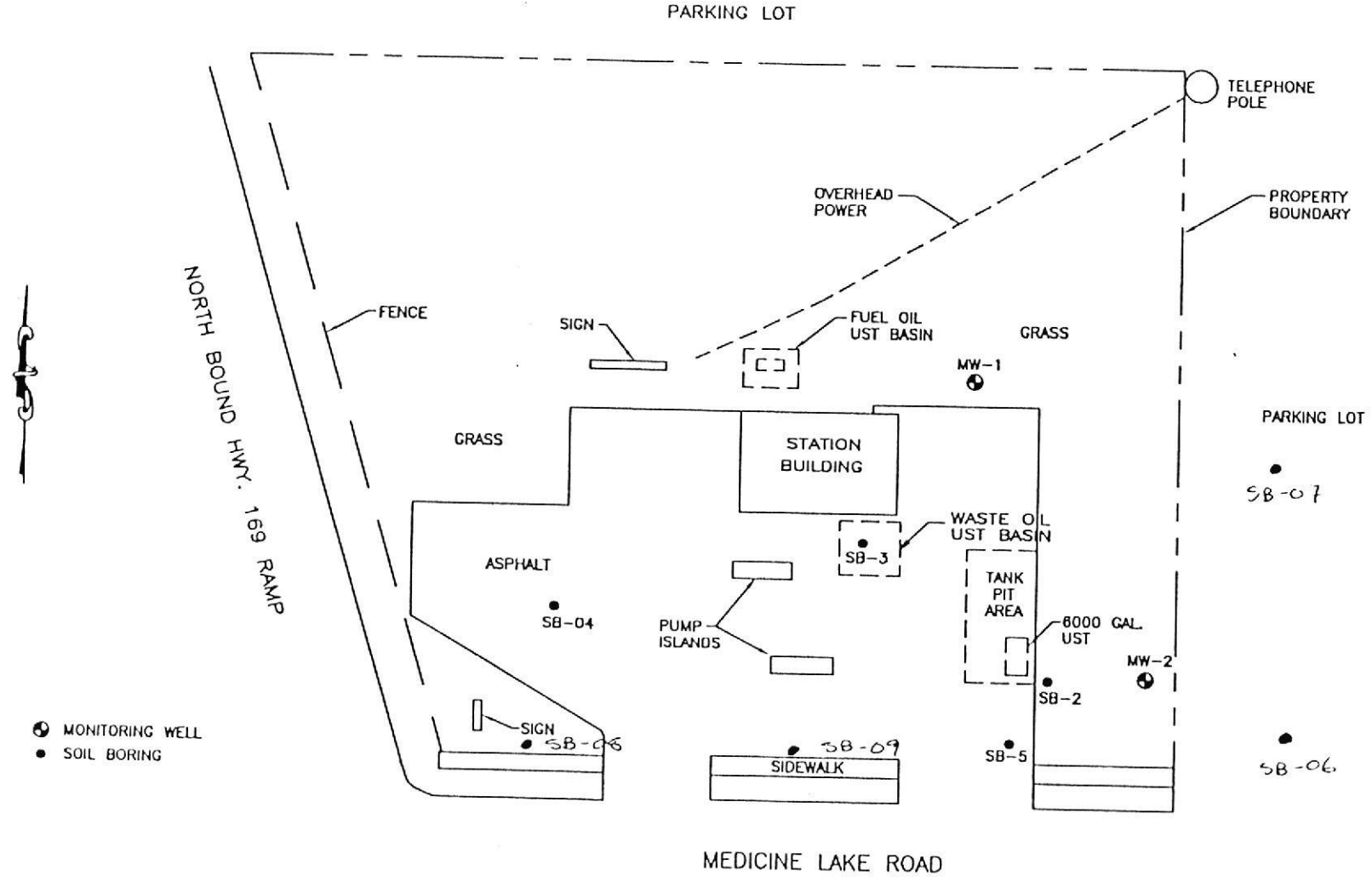
Received By	Affiliation	Date	Time
K. Wardell	443	7-1-93	9:44
Linda Wynne		7/1/93	1130

On ice

GROUND WATER MONITORING DATA SHEET	Nova Environmental Services, Inc. 1107 Hazeltine Blvd., Suite 400, Chaska, MN Phone: (612) 448-9393 Fax: (612) 448-9572	
Client Name: Hillsboro Court	Project Number: M93-445	
Location I.D.: MW-3	Location I.D.: MW-2	Location I.D.: MW-1
Date: 6/27/93	6/29/93	6/29/93
Hours: 10:15	11:21	12:30
Chronology: 1	3	2
Casing Diameter in.: 2	2	2
Static Depth ft.: 8.00	7.88	6.47
Casing Length ft.: 17.21	17.58	17.44
Column Length ft.: 9.21	9.70	10.97
Column Volume gal.: 1.50	1.58	1.78
Gallons Removed: 7.50	8.00	9.00
SAMPLE APPEARANCE	SAMPLE APPEARANCE	SAMPLE APPEARANCE
Color: Brown	Brown	Brown
Phases: None	None	None
Odor: None	None	None
GENERAL APPEARANCE OR COMMENTS Brown, turbid.	GENERAL APPEARANCE OR COMMENTS Brown, turbid.	GENERAL APPEARANCE OR COMMENTS Brown, turbid.
Completed by: Timothy G. Rogers	Date Completed: 6/29/93	

APPENDIX E

SOIL BORING LOGS - MONITORING WELL
CONSTRUCTION DIAGRAM - SINCLAIR



EnecoTech
ENVIRONMENTAL CONSULTANTS
BLOOMINGTON, MINNESOTA

FIGURE 1
SITE MAP
SINCLAIR SERVICE STATION
9456 MEDICINE LAKE ROAD, NEW HOPE, MN

PROJECT NO.	DATE	SCALE	PREPARED BY	REVIEWED BY	DATE	REVISION	
711-015	5/93	1" = 20'	GMS			ORIGINAL	SB

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - MEDICINE LAKE RD.
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - 9456 MEDICINE LAKE RD. NEW HOPE, MN

DRILLING CONTRACTOR - ETI
DRILLER - TOM MOORE
SURFACE ELEVATION -
DRILLING METHOD - HSA 6.75"

HOLE DESIGNATION - MW-01
DATE STARTED - 10/12/90
DATE COMPLETED - 10/12/90
ENECOTECH SUPERVISOR - S.J.B. & T.R.B.

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLING METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
0	4		AC	--	--	--	--	--	0	NONE	CL	SILTY CLAY W/TR GRAVEL, BLK-BRN-GRAY, MOTTLED, MOIST	
4	6		SS	6	7	10	10	90	0	NONE	CL	SANDY CLAY W/TRACE SILT & GRAVEL,	
										NONE		BROWN-GRAY-RUST BROWN, MOTTLED, MOIST, VERY STIFF	
6	9		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
9	11		SS	12	9	12	14	90	0	NONE	CL	SANDY CLAY W/SOME GRAVEL, DK GRAY, MOIST, VERY STIFF	
11	14		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
14	16		SS	3	6	9	10	100	0	NONE	CL	SAME AS ABOVE	
16	19		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
19	21		SS	7	10	13	15	70	0	NONE	CL	SAME AS ABOVE	
21	24		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
24	26		SS	15	12	18	18	90	0	NONE	CL	SAME AS ABOVE, DARK BROWN-GRAY	
26	29		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	HARD DRILLING
29	31		SS	12	22	31	50	75	0	NONE	CL	SAME AS ABOVE, DARK BROWN-GRAY	CLAYEY SILT LAYER 3" @ 30.5'

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - MEDICINE LAKE RD.
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - 9456 MEDICINE LAKE RD. NEW HOPE, MN

DRILLING CONTRACTOR - ETI
DRILLER - TOM MOORE
SURFACE ELEVATION -
DRILLING METHOD - HSA 6.75"

HOLE DESIGNATION - MW-01
DATE STARTED - 10/12/90
DATE COMPLETED - 10/15/90
ENECOTECH SUPERVISOR - S.J.B. & T.R.B.

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLING METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
31	34		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
34	36		SS	14	33	53	55	100	0	NONE	CL	SILTY CLAY W/SOME GRAVEL & SAND, GRAY, MOIST-WET	SILT LAYER 11' / MOIST-WET
										NONE	SM	SILTY SAND, FINE-MED, W/TR CLAY & SOME GRAVEL, RED BRN	35.5
36	39		AC	--	--	--	--	--	0	NONE	SM	SAME AS ABOVE	
39	41	MW-1-39	SS	36	29	23	--	60	0	NONE	SP	SAND W/SOME GRAVEL & TRACE SILT, MED, BRN, SATURATED	39-41
41	44		AC	--	--	--	--	--	0	NONE	CL	SILTY CLAY W/SOME GRAVEL, BROWN, MOIST	41-44
44	46		SS	16	23	27	27	75	0	NONE	SP	SAND W/TRACE GRAVEL, FINE-MEDIUM, LIGHT BROWN, MOIST	
46	49		AC	--	--	--	--	--	0	NONE	SP	SAME AS ABOVE	
49	51		SS	9	19	20	24	60	0	NONE	SP	SAND W/TRACE GRAVEL, VERY FINE-MED, BRN-LT BRN, MOIST	
51	54		AC	--	--	--	--	--	0	NONE	SP	SAME AS ABOVE	
54	56		SS	19	21	38	50	75	0	NONE	SP	SAND, VERY FINE-FINE, LT BRN, MOIST, EXTREMELY DENSE	
56	59		AC	--	--	--	--	--	0	NONE	SP	SAME AS ABOVE	
59	61	MW-01-59	SS	30	46	70	--	60	0	NONE	SP	SAND, VERY FINE, LIGHT BROWN, MOIST, EXTREMELY DENSE	

SOIL BORING LOG

ENECOTECH, INC.

SHEET NO. 1 OF 1

PROJECT NAME - MEDICINE LAKE RD.
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - 9456 MEDICINE LAKE RD. NEW HOPE, MN

DRILLING CONTRACTOR - ETI
DRILLER - TOM MOORE
SURFACE ELEVATION -
DRILLING METHOD - HSA 6.75"

HOLE DESIGNATION - MW-02
DATE STARTED - 10/16/90
DATE COMPLETED - 10/16/90
ENECOTECH SUPERVISOR - S.J.B.

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLING METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
0	4		AC	--	--	--	--	--	0	NONE	SM	SILTY SAND W/SOME GRAVEL, DARK BROWN-BROWN, MOIST	COBBLE AT 3'
4	6		SS	5	4	6	13	100	0	NONE	ML	CLAYEY SILT, LIGHT BROWN-GRAY, MOIST, VERY STIFF	
6	9		AC	--	--	--	--	--	0	NONE	ML	SAME AS ABOVE	
9	11	MW-2-9	SS	1	2	3	5	80	11	SLIGHT	CL	SILTY CLAY, LIGHT BROWN-GRAY, MOTTLED, WET-SATURATED	
11	14		AC	--	--	--	--	--	23	MOD	CL	SAME AS ABOVE	
14	16	MW-2-14	SS	6	7	10	15	100	797	STRONG	SC	CLAYEY SAND W/TRACE GRAVEL, FINE-MEDIUM,	5" SATURATED FINE SAND LAYER
										NONE		BROWN-DARK BROWN, MOIST-WET, VERY STIFF	14.5'-15'
16	19		AC	--	--	--	--	--	0	NONE	SC	SAME AS ABOVE	
19	21		SS	5	8	11	15	80	86	MOD	CL	SANDY CLAY W/SOME GRAVEL, DARK GRAY, MOIST	
21	24		AC	--	--	--	--	--	0	NONE	CL	SAME AS ABOVE	
24	26		SS	6	9	11	13		3	NONE	CL	SAME AS ABOVE	

FILING CODE - 11015S6A

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - SINCLAIR-NEW HOPE
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - MEDICINE LAKE ROAD

DRILLING CONTRACTOR - THEIN
DRILLER - NATHAN
SURFACE ELEVATION -
DRILLING METHOD - HSA

HOLE DESIGNATION - SB-06
DATE STARTED - 4/4/91
DATE COMPLETED - 4/4/91
ENECOTECH SUPERVISOR - SPY

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLE METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
0	4		AF							NONE	CL	SILTY, SANDY CLAY, LIGHT BROWN, MOIST	
4	6		SS	13				90	0	NONE	CL	S.A.A., DRY	
6	9		AF							NONE	CL	S.A.A.	
9	11		SS	33				80	0	NONE	CL	9-10.5' S.A.A.	
											SP	10.5-11.0' MEDIUM SAND, LIGHT BROWN, DRY	
11	14		AF							NONE	CL	SILTY-SANDY CLAY, LIGHT BROWN, DRY	
14	16	SB-06(16)	SS	16				100	0	NONE	CL	SILTY-SANDY CLAY, GRAY, DRY	
16	19		AF							NONE	CL	S.A.A.	
19	21		SS	13				10	0	NONE	CL	S.A.A., MIXED WITH GRAVEL	
21	24		AF							NONE	CL	S.A.A., DRY	
24	26		SS	16				90	0	NONE	CL	S.A.A., DRY	
26	29		AF							NONE	CL	S.A.A., DRY	
29	31		SS	37					0	NONE	CL	S.A.A., DRY	

FILING CODE - 11015S6B

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - SINCLAIR-NEW HOPE
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - MEDICINE LAKE ROAD

DRILLING CONTRACTOR - THEIN
DRILLER - NATHAN
SURFACE ELEVATION -
DRILLING METHOD - HSA

HOLE DESIGNATION - SB-06
DATE STARTED - 4/4/91
DATE COMPLETED - 4/4/91
ENECOTECH SUPERVISOR - SPY

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLE METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
31	34		AF							NONE	CL	S.A.A., DRY	
34	36		SS	-------30---------				50	0	NONE	CL	S.A.A., DRY	
36	39		AF							NONE	CL	SILTY-SANDY CLAY, GRAY, DRY	
39	41		SS	-------33---------				50	0	NONE	SM	SILTY SAND, LIGHT BROWN, MOIST	
41	44		AF							NONE	CL	SANDY-SILTY CLAY, GRAY, DRY	
44	46		SS	-------31---------				50	0	NONE	SP	MEDIUM SAND, LIGHT BROWN, DRY	
												*TERMINATED BORING AT 46' BGS, GROUTED TO SURFACE	

FILING CODE - 11015S7A

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - SINCLAIR-NEW HOPE
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - MEDICINE LAKE ROAD

DRILLING CONTRACTOR - THEIN
DRILLER - NATHAN
SURFACE ELEVATION -
DRILLING METHOD - HSA

HOLE DESIGNATION - SB-07
DATE STARTED - 4/5/91
DATE COMPLETED - 4/5/91
ENECOTECH SUPERVISOR - GVA

DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLING METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6" 6" 6" 6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
0	4		AF			0		CL	0-6" ASPHALT, SANDY CLAY, BROWN	
4	6		SS	-------27----------	60	0	NONE	CL	SANDY-SILTY CLAY W/PEBS & SHALE, RED-BRWN, DENSE,	
									MEDIUM PLASTICITY	
5	9		AF				NONE	CL	S.A.A.	
9	11		SS	-------21----------	90	0	NONE	CL	SAND-SILT CLAY, OX. IRON MOTTLING, LOW PLAST, MOIST	
10	14		AF				NONE	CL	SILTY CLAY, ORANGE-BROWN, MOIST	
14	16	SB-07-14	SS	-------17----------	70	9	NONE	SP	MED. TO COARSE-GRAINED SAND, WET	
15	19		AF				NONE	ML	SANDY SILT, MOIST	
19	21		SS	-------21----------	90	0	NONE	CH	SAND-SILT CLAY, UNOX. W/SMALL PEBS, V.DENSE, HIGH	
									PLASTICITY, BLUE-GRAY	
20	24		AF				NONE	CH	S.A.A.	
24	26	SB-07-24	SS	-------25----------	60	0	NONE	CH	S.A.A.	
25	29		AF				NONE	CH	S.A.A.	

FILING CODE - 11015S7B

SOIL BORING LOG

ENECOTECH, INC.

PROJECT NAME - SINCLAIR-NEW HOPE
PROJECT NUMBER - 711-015
CLIENT - SINCLAIR
LOCATION - MEDICINE LAKE ROAD

DRILLING CONTRACTOR - THEIN
DRILLER - NATHAN
SURFACE ELEVATION -
DRILLING METHOD - HSA

HOLE DESIGNATION - SB-07
DATE STARTED - 4/5/91
DATE COMPLETED - 4/5/91
ENECOTECH SUPERVISOR - GVA

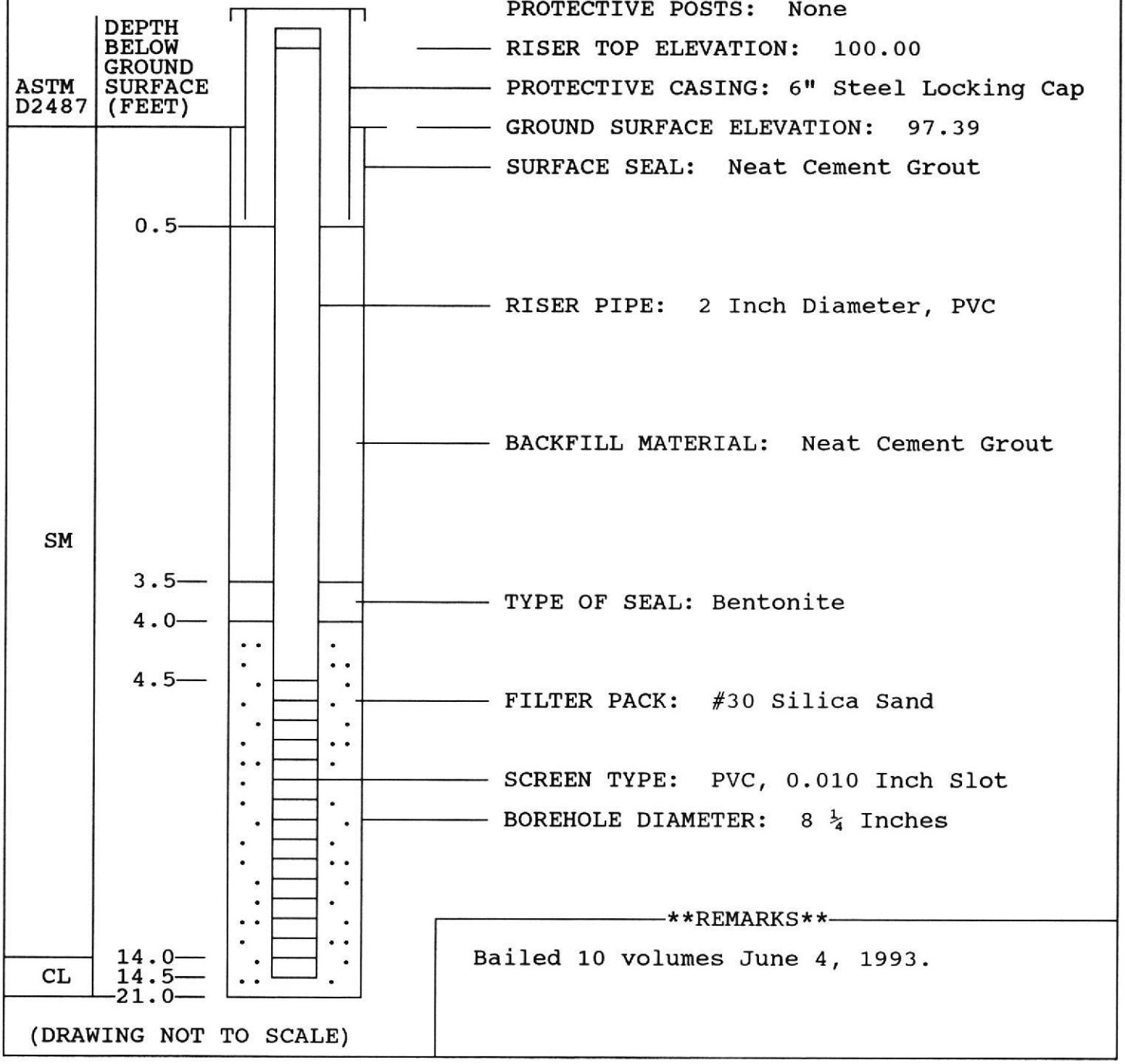
DEPTH FROM	DEPTH TO	SAMPLE NUMBER	SAMPLING METHOD	PENETRATION RECORD SPLIT SPOON BLOWS 6"	6"	6"	6"	PERCENT RECOVERY	OVM VALUE	ODOR STRENGTH	ASTM SYMBOL	SAMPLE DESCRIPTION (COMPONENTS, COLOR, MOISTURE, NATIVE/FILL)	NOTES (STRUCTURES, DRILLER'S COMMENTS, GEOLOGIC CLASSIFICATION)
29	31		SS	-------28---------				50	0	NONE	CH	S.A.A., MOIST	HIT ROCK, SPOON WAS ONLY HALF FULL.
													TERMINATED BORING AT THIS POINT.
													AUGERS COULD NOT GET PAST ROCK-AUGER
													REFUSAL.

APPENDIX F

MONITORING WELL CONSTRUCTION DETAILS

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT: Hillsboro Court Apartments	MONITORING WELL NUMBER: MW-1
DATE: June 4, 1993	MINNESOTA UNIQUE WELL NUMBER: 528995



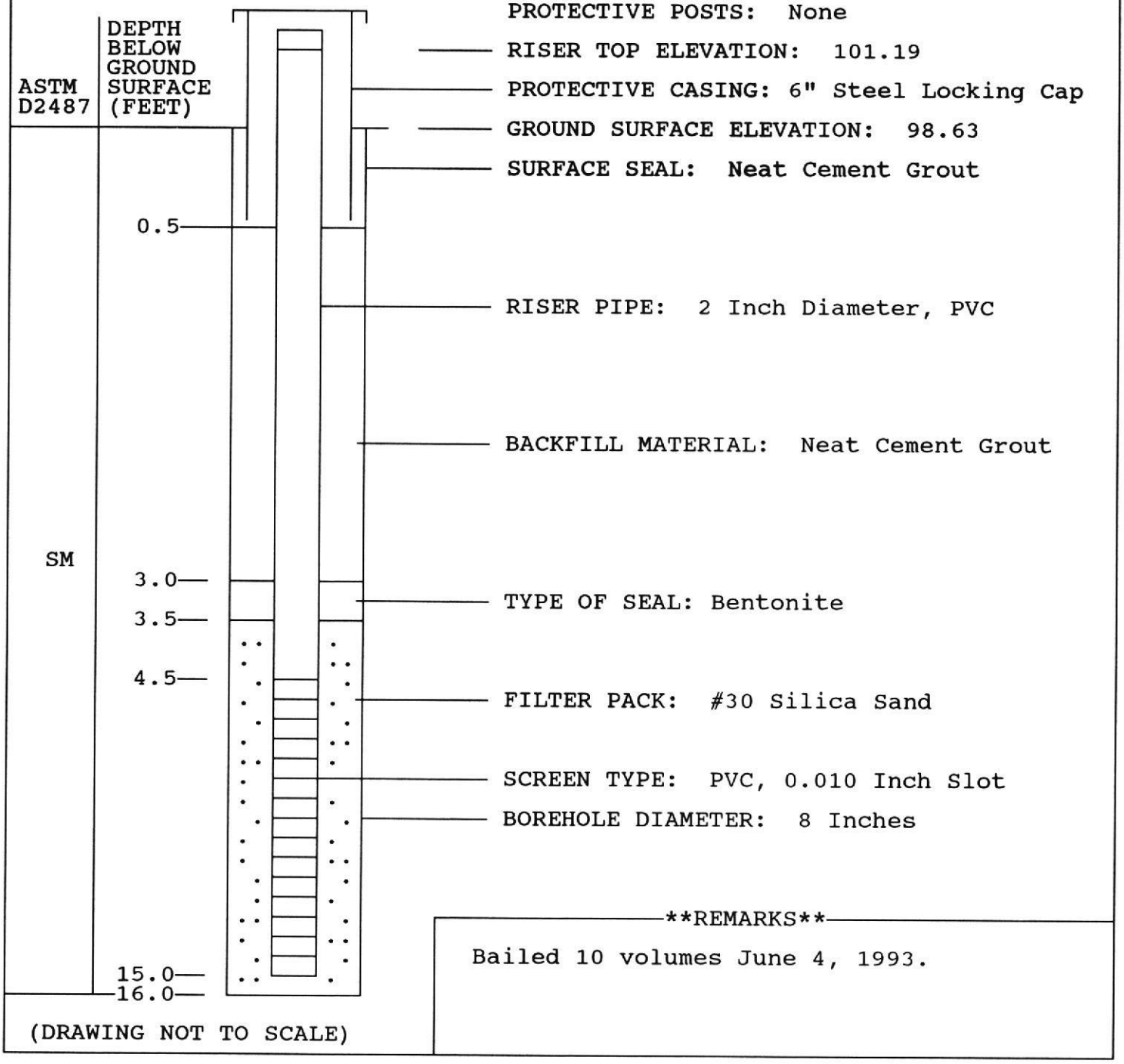
****REMARKS****

Bailed 10 volumes June 4, 1993.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT: Hillsboro Court Apartments	MONITORING WELL NUMBER: MW-2
DATE: June 4, 1993	MINNESOTA UNIQUE WELL NUMBER: 528996



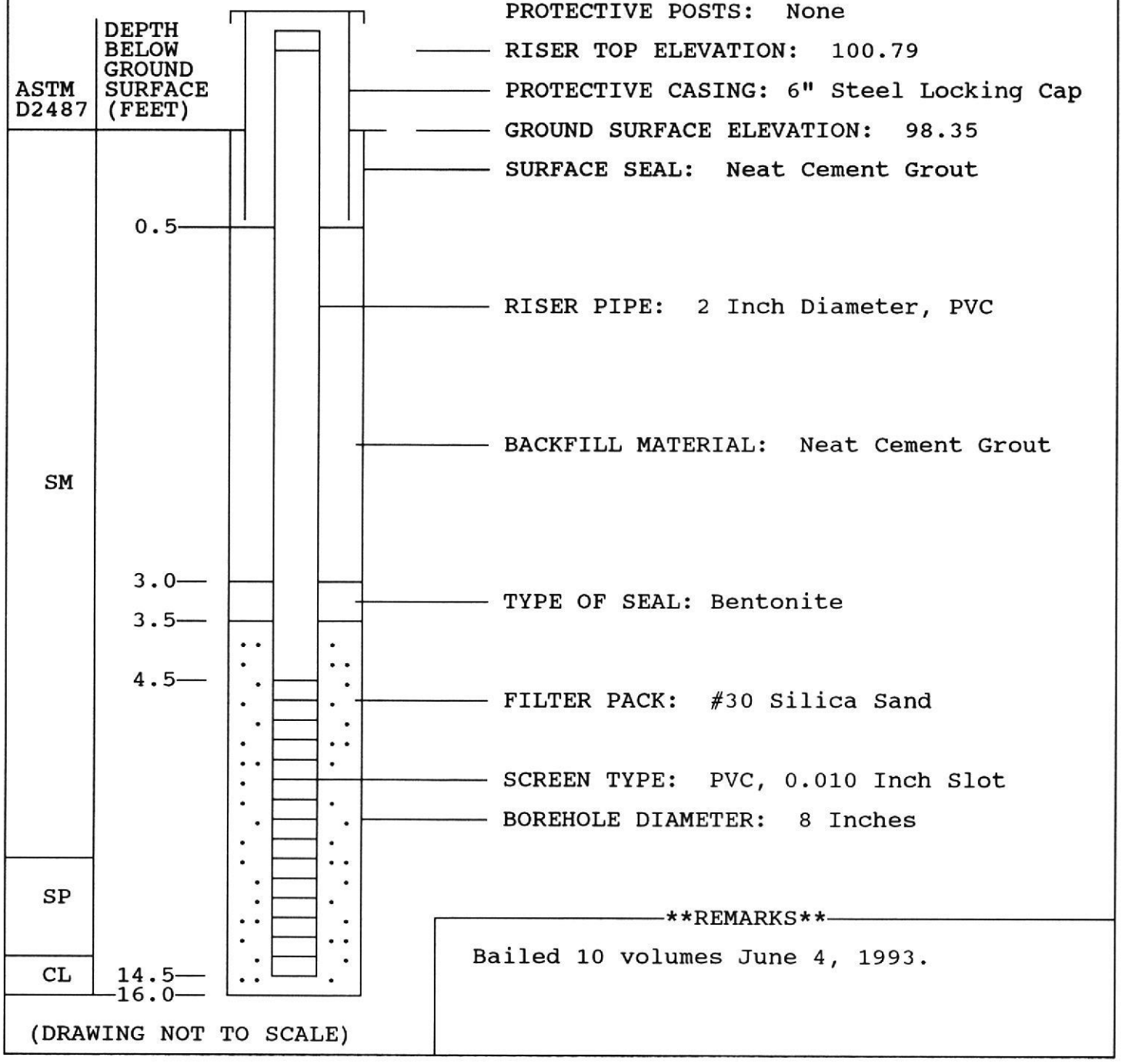
****REMARKS****

Bailed 10 volumes June 4, 1993.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

MONITORING WELL CONSTRUCTION DIAGRAM

PROJECT: Hillsboro Court Apartments	MONITORING WELL NUMBER: MW-3
DATE: June 4, 1993	MINNESOTA UNIQUE WELL NUMBER: 528997



(DRAWING NOT TO SCALE)

REMARKS

Bailed 10 volumes June 4, 1993.

NOVA ENVIRONMENTAL SERVICES, INC.
1107 Hazeltine Blvd. Suite 400, Chaska, MN 55318 (612) 448-9393

APPENDIX G

MONITORING WELL STABILIZATION DATA

GROUND WATER MONITORING DATA SHEET	Nova Environmental Services, Inc. 1107 Hazeltine Blvd., Suite 400, Chaska, MN Phone: (612) 448-9393 Fax: (612) 448-9572	
Client Name: Hillsboro Court	Project Number: M93-445	
Location I.D.: MW-3	Location I.D.: MW-2	Location I.D.: MW-1
Date: 6/27/93	6/29/93	6/29/93
Hours: 10:15	11:21	12:30
Chronology: 1	3	2
Casing Diameter in.: 2	2	2
Static Depth ft.: 8.00	7.88	6.47
Casing Length ft.: 17.21	17.58	17.44
Column Length ft.: 9.21	9.70	10.97
Column Volume gal.: 1.50	1.58	1.78
Gallons Removed: 7.50	8.00	9.00
SAMPLE APPEARANCE	SAMPLE APPEARANCE	SAMPLE APPEARANCE
Color: Brown	Brown	Brown
Phases: None	None	None
Odor: None	None	None
GENERAL APPEARANCE OR COMMENTS Brown, turbid.	GENERAL APPEARANCE OR COMMENTS Brown, turbid.	GENERAL APPEARANCE OR COMMENTS Brown, turbid.
Completed by: Timothy G. Rogers	Date Completed: 6/29/93	

APPENDIX H

SLUG TEST AND CALCULATIONS

SLUG TESTS

As part of the ground water quality assessment, slug tests were conducted to assist in evaluating the properties of the water table aquifer. The procedures used to conduct the slug tests are described in Section 3.0 of this report. This appendix presents the field data and describes the data analysis performed.

Slug test field data for wells MW-1, MW-2 and MW-3 are presented in Table 1 of this Appendix. The data was analyzed using the Bouwer and Rice method. This method is described in the following reference: Bouwer, H., and Rice, R.C., 1976, A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, Water Resources Research, Volume 12, No. 2, P.423-428.

The Bouwer and Rice Method is based on the following assumptions:

1. Drawdown of the water table around the well is negligible.

2. Flow above the water table (in the capillary fringe) can be ignored.

3. Head losses as water enters the well (well losses) are negligible.

4. The aquifer is homogeneous and isotropic.

A computer program was utilized to perform the calculations (Slugix, Interpex Limited Golden, Colorado 1988, 1989).

The computer output is presented in Figure 1 of this appendix.

The calculations performed by the Slugix Program are given as follows:

Hydraulic conductivity (k) was calculated using the following equation:

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L} \frac{1}{t} \ln \frac{y_o}{y_t}$$

Where:

r_c = Inside radius of well casing.
L = Height of the portion of the well through which the water enters (i.e., height of screen).
y = Vertical distance between water level in well and equilibrium (static) water table in aquifer.
R_e = Effective radius over which y is dissipated.
r_w = Horizontal distance from the well center to original aquifer (well radius or radius of casing plus thickness of gravel pack).
y_o = Initial change in water level, y - intercept from graph.
y_t = Value of y at a specified time interval (t) from graph.

In order to use the previous equation the value of ln R_e/r_w was first be determined using the following equation:

$$\frac{\ln R_e}{r_w} = \frac{1.1}{\ln(H/r_w)} + \frac{A + B\ln[(D-H)/r_w]^{-1}}{L/r_w}$$

Where:

H = Distance from depth of well to water table.
D = Thickness of aquifer.
A and B = Dimensionless coefficients that are functions of L/r_w and estimated from Figure 3 of Bouwer and Rice (1976).

Ground water flow velocity is calculated using the following equation:

$$V = \frac{Ki}{n}$$

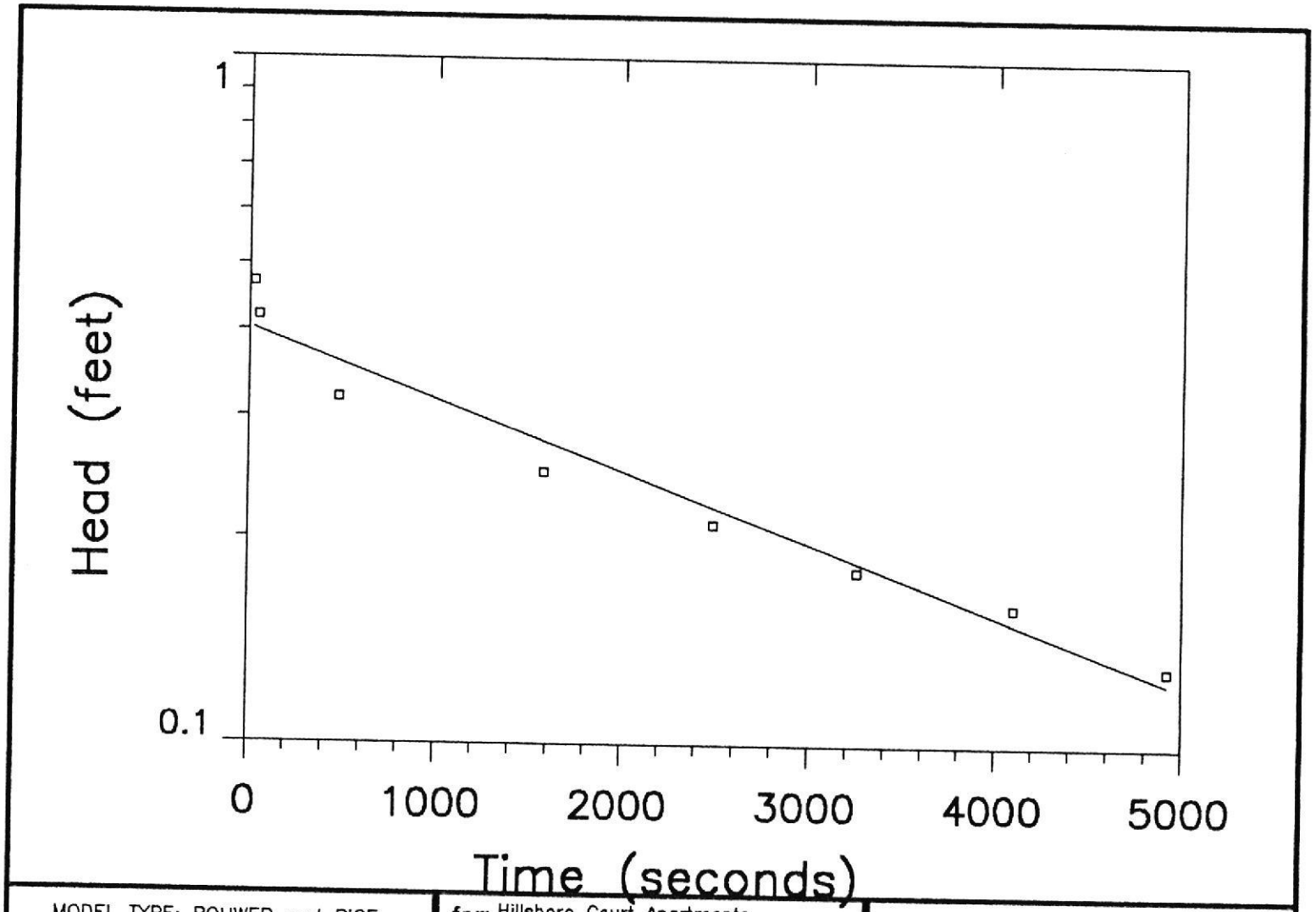
Where:
- V = Velocity
- n = Porosity
- i = Hydraulic Gradient
- K = Hydraulic Conductivity

n = 30% (average porosity for silty sand)
i = 0.0058 ft/ft
K = 1.1×10^{-4} cm/s

Well	Hydraulic Conductivity
MW-1	1.0×10^{-5}
MW-2	1.2×10^{-4}
MW-3	2.0×10^{-4}
Average	1.1×10^{-4}

The ground water flow velocity was calculated as:

V = 2.17 Ft/year



MODEL TYPE: BOUWER and RICE

CONDUCTIVITY: 1.265E-5 cm/sec

TRANSMISSIVITY: .03856 sq. cm/sec

INITIAL HEAD: 2.000 ft

Data Set: MW-1 | Date: 7-23-93

for: Hillsboro Court Apartments

by: NOVA ENVIRONMENTAL SERVICES INC.

WELL DATA: Units: ft

AQUIFER: Endless

THICKNESS: 100.0

SCREEN: top: 7.440 base: 17.44

DIAMETER: casing: .1660 intake: .6880

DEPTH: Water Table: 6.470 TD: 17.44

Well Slug Test Data

Well: MW-1

New Hope, MN

DATA SET: MW-1

CLIENT:	Hillsboro Court Apartments	DATE:	7-23-93
LOCATION:	New Hope, MN	WELL NO.:	MW-1
COUNTY:		WELL DEPTH:	17.44 ft
PROJECT:	Well Slug Test Data	WATER TABLE:	6.470 ft
AQUIFER:	Endless	THICKNESS:	100.00 ft
INTAKE RADIUS:	0.344 ft	CASING RADIUS:	0.083 ft
SCREEN TOP:	7.440 ft	SCREEN BASE:	17.44 ft
INITIAL HEAD:	2.000 ft	TRANS. RATIO:	1.0000

MODEL PARAMETERS:

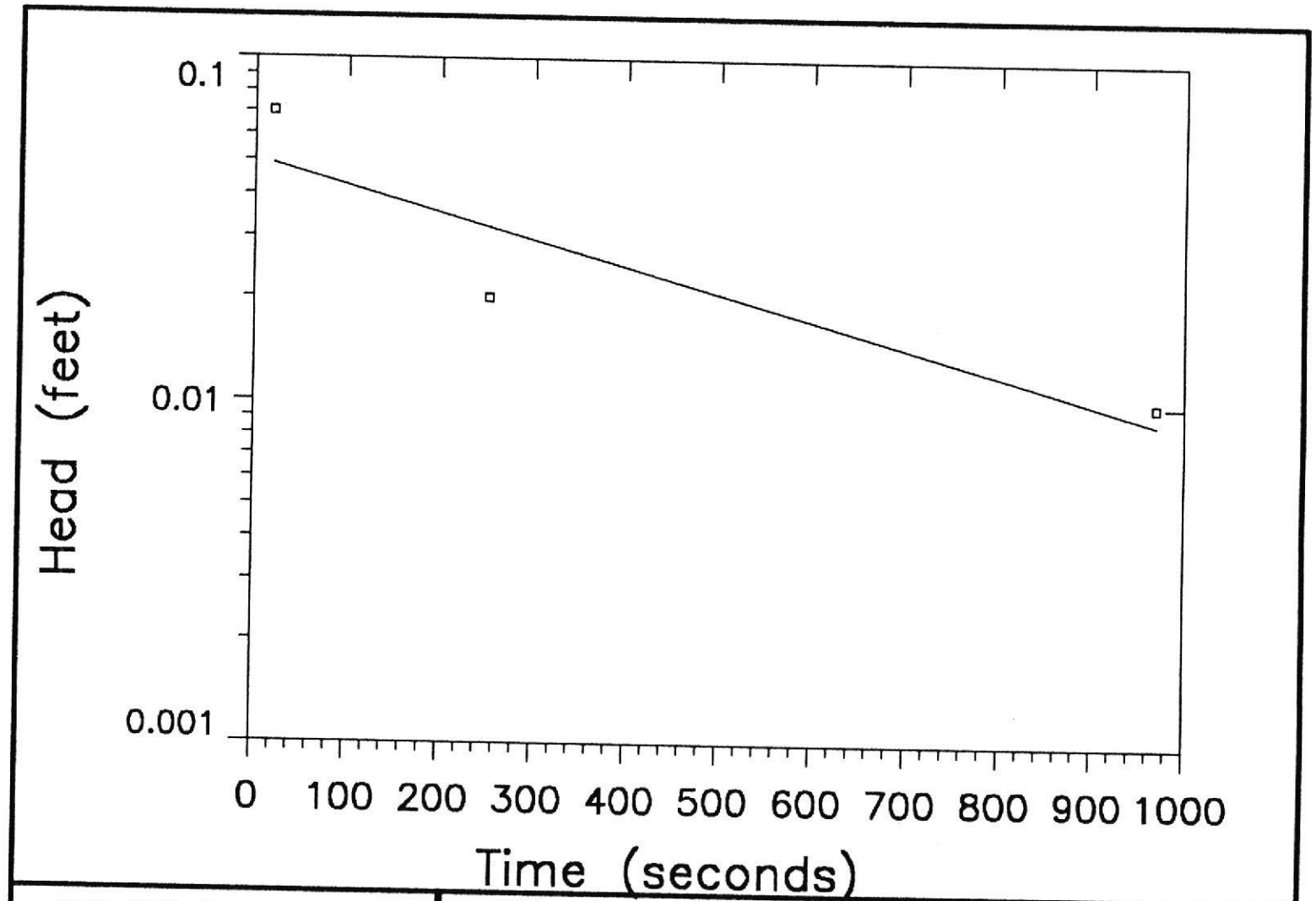
TRANSMISSIVITY: 0.03856square cm/sec

CONDUCTIVITY: 0.00001 cm/sec

MODEL TYPE: UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

No.	TIME (secs)	Head, H (ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	27.00	0.470		
2	51.00	0.420		
3	482.0	0.320		
4	1580.0	0.250		
5	2495.0	0.210		
6	3256.0	0.180		
7	4100.0	0.160		
8	4923.0	0.130		

CURRENT RESOLUTION MATRIIX NOT AVAILABLE



MODEL TYPE: BOUWER and RICE

CONDUCTIVITY: .0001220 cm/sec

TRANSMISSIVITY: .3720 sq. cm/sec

INITIAL HEAD: 2.000 ft

Data Set: MW-2 | Date: 7-23-93

for: Hillsboro Court Apartments

by: NOVA ENVIRONMENTAL SERVICES INC.

WELL DATA: Units: ft

AQUIFER: Endless

THICKNESS: 100.0

SCREEN: top: 7.580 base: 17.58

DIAMETER: casing: .1660 intake: .6880

DEPTH: Water Table: 7.880 TD: 17.58

Well Slug Test Data

Well: MW-2

New Hope, MN

DATA SET: MW-2

CLIENT: Hillsboro Court Apartments
LOCATION: New Hope, MN
COUNTY:
PROJECT: Well Slug Test Data
AQUIFER: Endless
INTAKE RADIUS: 0.344 ft
SCREEN TOP: 7.580 ft
INITIAL HEAD: 2.000 ft

DATE: 7-23-93
WELL NO.: MW-2
WELL DEPTH: 17.58 ft
WATER TABLE: 7.880 ft
THICKNESS: 100.00 ft
CASING RADIUS: 0.083 ft
SCREEN BASE: 17.58 ft
TRANS. RATIO: 1.0000

MODEL PARAMETERS:

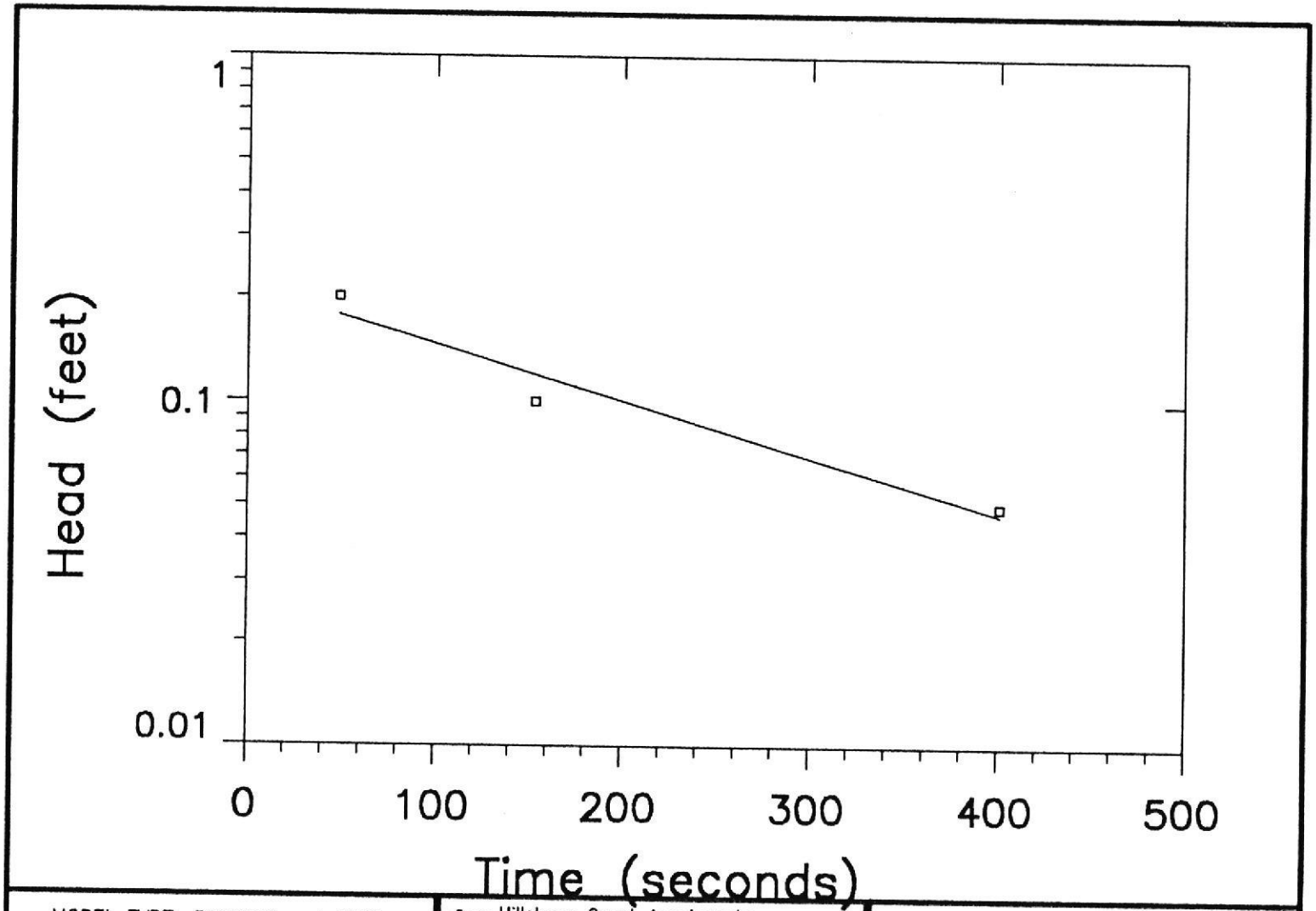
TRANSMISSIVITY: 0.37201square cm/sec

CONDUCTIVITY: 0.00012 cm/sec

MODEL TYPE: UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

No.	TIME (secs)	Head, H (ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	20.00	0.0700	0.0488	30.17
2	253.0	0.0200	0.0321	-60.93
3	970.0	0.0100	0.00890	11.01

CURRENT RESOLUTION MATRIIX NOT AVAILABLE



MODEL TYPE: BOUWER and RICE

CONDUCTIVITY: .0002017 cm/sec

TRANSMISSIVITY: .6150 sq. cm/sec

INITIAL HEAD: 2.000 ft

Data Set: MW-3 | Date: 7-23-93

for: Hillsboro Court Apartments

by: NOVA ENVIRONMENTAL SERVICES INC.

WELL DATA: Units: ft

AQUIFER: Endless

THICKNESS: 100.0

SCREEN: top: 7.210 base: 17.21

DIAMETER: casing: .1660 intake: .6880

DEPTH: Water Table: 8.000 TD: 17.21

Well Slug Test Data

Well: MW-3

New Hope, MN

DATA SET: MW-3

CLIENT: Hillsboro Court Apartments
LOCATION: New Hope, MN
COUNTY:
PROJECT: Well Slug Test Data
AQUIFER: Endless
INTAKE RADIUS: 0.344 ft
SCREEN TOP: 7.210 ft
INITIAL HEAD: 2.000 ft

DATE: 7-23-93
WELL NO.: MW-3
WELL DEPTH: 17.21 ft
WATER TABLE: 8.000 ft
THICKNESS: 100.00 ft
CASING RADIUS: 0.083 ft
SCREEN BASE: 17.21 ft
TRANS. RATIO: 1.0000

MODEL PARAMETERS:

TRANSMISSIVITY: 0.61504square cm/sec

CONDUCTIVITY: 0.00020 cm/sec

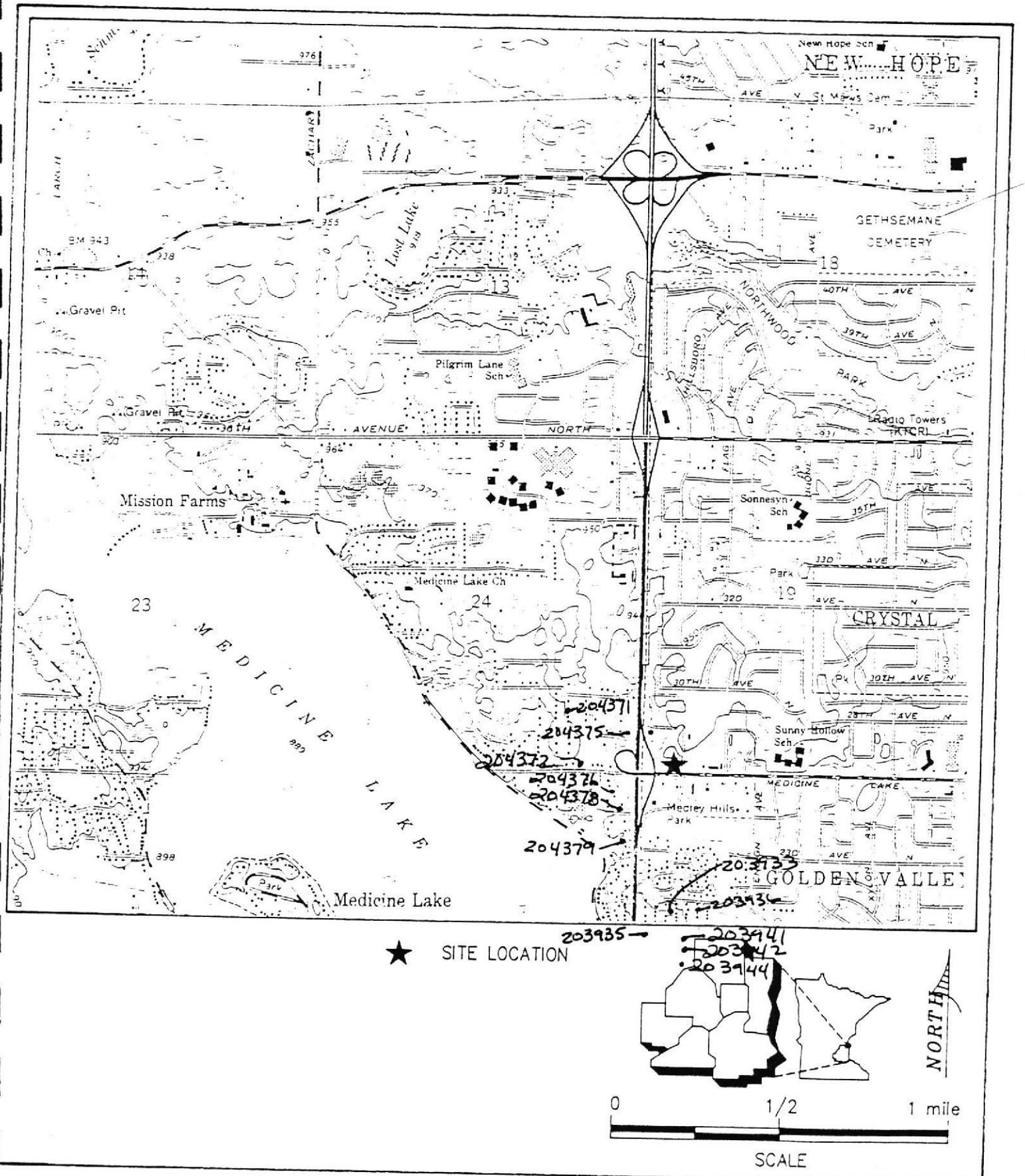
MODEL TYPE: UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

No.	TIME (secs)	Head, H (ft) DATA	SYNTHETIC	DIFFERENCE (percent)
1	49.00	0.200	0.176	11.66
2	154.0	0.100	0.119	-19.34
3	401.0	0.0500	0.0474	5.13

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

APPENDIX I

WATER WELL LOGS



SITE LOCATION MAP
HILLSBORO COURT APARTMENTS
NEW HOPE, MINNESOTA

M93-445

Nova Environmental Services, Inc.

AUG - 93

1

-1A Plymouth 204378

Henry Gess Well Co.

(204)

MILLER-DAVIS CO., MINNEAPOLIS 3070-C

EMPLOYEE Pierna 96 5 25 th ave

WEEK ENDING ______ 19__ WEEK No. ______

DAY OF WEEK	BEFORE NOON IN HR.	BEFORE NOON IN MIN.	BEFORE NOON OUT HR.	BEFORE NOON OUT MIN.	AFTERNOON IN HR.	AFTERNOON IN MIN.	AFTERNOON OUT HR.	AFTERNOON OUT MIN.	EVENING IN HR.	EVENING IN MIN.	EVENING OUT HR.	EVENING OUT MIN.	TOTAL TIME EACH DAY REGULAR	TOTAL TIME EACH DAY O'TIME
SUNDAY	3" Well 115 ft.													
MONDAY													0-115 Drift	
TUESDAY	20 G. P. M.													
WEDNESDAY														
THURSDAY	25 ft to water												20	
FRIDAY														
SATURDAY	6 ft. 8" 2048 Screen												Aquifer	
OTHER INFORMATION														
TOTAL FOR WEEK														

I hereby certify that the above is a true report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported Sept 17 1964 Signature Henry Gess

CODED

118-22-25 AAACCA

Elev. 905 ± 5'

115 / 790

120-C

No. M89 67

Budd

E. H. RENNER & SONS WELL COMPANY

5465 Co. Rd. 18 North Minneapolis 28

~~2107~~ 4166

INVOICES: NE¼ Sec 25 118 N-22
(Well) No. 118-22-25 aadd A
(Pump) No. Osseo (58)
2043-71

ADP 1968

WELL LOG

Date Started March 2 19 67 Date Completed March 10 19 67

Owner or Contractor Ronald C. Johnson Address 9605 A 24th. Ave. N. Mpls. 55427

Job Location Same 118-22-25 AAdcAd

Elev. 905±5'

Lot ____ Block ____ Twp or city Plymouth County Hennepin State of Minnesota

Well: A-52

Cased with 4" Black Seamless (Type and Size) Ft. 135 Total Depth of Well 139' from grade

Feet of Open Hole None Finished in Sandrock and gravel Water Level 22

Tested at 20 gallons per min Draw down of None feet.

CODED

Screen:

Size 3" x 5' Make Johnson Stainless Steel Slot or Guage 10 Number 746

Pump:

Make Aermotor H.P. ½ Type Sub. Tank Size 42

Motor Serial No. ____ Pump Serial No. S50LXPE 110 Drop Pipe 42 feet

Size 1" Capacity of pump 11 @ 50# G.P.M. Date Installed March 10, 1967

Well pit Original discharge 120-C

KIND OF FORMATION	COLOR OF FORMATION	STARTED DEPTH	ENDED DEPTH	TOTAL THICKNESS OF FORMATION	REMARKS
Clay	Yellow	0	29	29	QTUB CLAY
Fine sand	Brown	29	51	22	QFUB SAND
Gravel	Brown	51	56	5	PQFUB GRVL
Sandy clay	Red	56	74	18	QTUR CLAY
Clay	Blue	74	96	22	QTUG CLAY
Muddy sand	Yellow	96	130	34	QFUB SAND MUD
Sandrock and gravel	Yellow	130	139	9	QFUB SAND, GRVL
					Aquifer QBAA ~~QBAA~~

Don STODOLA Well Co.

Osseo

CARL HUTTEN
2520 Lancaster Lane mpls. Plymouth — 50' to water
5-20-67

4" well 161' @ 4.00	644.00
Permit	15.00
Johnson SS screen	100.00
Pitless	100.00
3/4 HP sub & 42 gal tank	375.00
	1234.00

204376

Paid in full
6/27/67

118-22-25 AAAbcd
Elev. 925±5
120-C

4/9

50' to water

0-40 brown clay
40-135 red clay gravel
135-161 white sandstone

} ATUB CLAY / QUBRCLNGRVL
OSA } T/ 790 + 30STP SNDS

Aquifer: No Casing Record

925
161
764

CODED

Mork Well Co

118-22-24
DDBBCC
Elev. 950±5

120-C OK

(299)

Osseo

A

ID-17
264571

Oman Willard Oct 18 Nov -71
2740 Nathan Lane

110 ft. 4" well
80 ft. water level
#948 Stainless Steel Screen 6" OL
4x2" lead seal
Installed Nov 24-71
1-1/2 hp. Sub. Air motor
4-2 gal tank w/ float
90 ft. 1" galv. pipe
98 ft. #12-3 cable
1 - 4" pitless 12 ft 1" type K copper
2 ft #12-3 wire. 25 g.p.m.
Stewart

SAND, GRVL, CLAY
CLAY
CLAY, SAND
GRVL, SAND

QUUB 0-45- Sand gravel Brown clay.
QTUB 45-96- Brown clay
QUUR 96-151- Reddish clay w/ sand mixed
QFUU 151-170- gravel sand water bearing

B/280

Aquifer QBAA-QUBA

950
170
780

CODED

1A 544-3045

33-25 9530-27 AHP

Allen Eugene Carlson

27th ave. No. & Hwy #18

0 to 8 pit PITI (PITT 14 CLAY)

8 to 40 Clay QTW QFL SAND

40 to 65 Sand PLTS HDPN, SILT

65 to 86 Hardpan QTW 204375

86 to 93 Water Sand QAW 6/83 SAND

Water level 50 ft

2" 18 Slot Johnson screen

Test pump at 25 G.P.M.

4" Well

118-22-24 ddd Abb

CODED

Elev. 925±5'

120-C

Associated Well Co.

Aquifer QBAA-QBAA

Mork Well Co. 12/9/76 Rechecked SSLD

120-C 313 A

~~118-22-24~~
~~DDCDCC~~
~~Elev 930±5~~

OK 1A-25 204372

Roskop Les
9730 26th Ave. Feb 7/69 2/11-1969

OK

4" @ 4.25 — 87' 118-22-24
#948-10 - 6'-3" OL DDCCDA
water level 50 ft. Elev 930±5

Installed May 22 - 1969
1 - ½ hp Aeromotor Sub.
2 - 42 gal tank w/ float
60 ft 1" galv pipe
65 ft #12.3 Elec wire

Howard 30 gpm

CODED

1-8- Dirt PITT PITT
8-25- Killgan gray) QTUG HOPN/SILT
25-42 rocks clay " QTUG6 ROCK, CLAY
42-70 muddy sand gray) QTUG SAND MUDD
70-87 sand grey - water QTUG SAND

Aquifer QBUA-QBUA

1A-25

Golden Valley 203933 120 c

MILLER-DAVIS CO., MINNEAPOLIS 8678-C 2016 [illegible]

EMPLOYEE Brandt & Andersen A055 Q (204)

WEEK ENDING 9·22 19 61 WEEK No.

DAY OF WEEK	BEFORE NOON IN		OUT		AFTERNOON IN		OUT		EVENING IN		OUT		TOTAL TIME EACH DAY	
	HR.	MIN.	HR.	MIN.	HR.	MIN.	HR.	MIN.	HR.	MIN.	HR.	MIN.	REGULAR	O'TIME
SUNDAY	85'													
MONDAY	[illegible]													
TUESDAY	[illegible]													
WEDNESDAY	[illegible]													
THURSDAY	90'		[illegible]											
FRIDAY														
SATURDAY														
OTHER INFORMATION														
TOTAL FOR WEEK														

CODED

PRFT
Quu 0-85 Drift
5/855
Aquifer
QUCRHB
QUUU

I hereby certify that the above is a true report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported 9-22 19 61 Signature H. Halvorson

118-27-30 bcdbbb

Elev. 935±5'

1A-25 QQ 648 A Golden Valley 20397

118-21-30 bcc cbd

Elev. 955

MILLER-DAVIS CO., MINNEAPOLIS 667B-C

EMPLOYEE Brandt + [illegible] ... ohn Ave [illegible]

WEEK ENDING ______ WEEK No. ______

CODED

DAY OF WEEK	BEFORE NOON IN HR.	BEFORE NOON IN MIN.	BEFORE NOON OUT HR.	BEFORE NOON OUT MIN.	AFTERNOON IN HR.	AFTERNOON IN MIN.	AFTERNOON OUT HR.	AFTERNOON OUT MIN.	EVENING IN HR.	EVENING IN MIN.	EVENING OUT HR.	EVENING OUT MIN.	TOTAL TIME EACH DAY REGULAR	TOTAL TIME EACH DAY O'TIME
SUNDAY	10'													
MONDAY											QUUY		0-100	Drift
TUESDAY														
WEDNESDAY	82'													
THURSDAY	40													
FRIDAY	Sand and gravel													
SATURDAY														
OTHER INFORMATION											TOTAL FOR WEEK			

Drift B/855

Aquifer QUUU- QUUU

I hereby certify that the above is a true report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported 3-23 1961 Signature H. Halmer

1 A-25 A Golden Valley 203[illegible] 120 C

Hoedy Burandt

MILLER-DAVIS CO., MINNEAPOLIS 667B-C

EMPLOYEE 1904 Hillsboro Ave No 19 WEEK No.

WEEK ENDING

DAY OF WEEK	BEFORE NOON IN HR.	MIN.	OUT HR.	MIN.	AFTERNOON IN HR.	MIN.	OUT HR.	MIN.	EVENING IN HR.	MIN.	OUT HR.	MIN.	TOTAL TIME EACH DAY REGULAR	O'TIME
SUNDAY	94' Deep												Quuu	0-94
MONDAY	3' Well													
TUESDAY	73' Till [illegible]													
WEDNESDAY	Red [illegible]													
THURSDAY	[illegible] screen													
FRIDAY	2' [illegible] sez													
SATURDAY														
											TOTAL FOR WEEK			

OTHER INFORMATION

CODED

I hereby certify that the above is a true report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported June 26 1964 Signature [illegible]

118 ~~[illegible]~~ 24 30 [illegible]

Elev. 945.5'

#01 (#46)

DRFT Drift

Aquifer QUUU QUUU

1A-25 (645) 203942 A 12

Golden Valley

EMPLOYER Gerdy Burandt, 1908 Hillsboro Ave No

WEEK ENDING ______ 19___ WEEK No. ______

DAY OF WEEK	MORNING IN HR.	MIN.	OUT HR.	MIN.	AFTERNOON IN HR.	MIN.	OUT HR.	MIN.	EVENING IN HR.	MIN.	OUT HR.	MIN.	TOTAL TIME EACH DAY REGULAR	O'RTIME
SUNDAY	3"	Well												
MONDAY	97'	Deep											Quad	0-97
TUESDAY	74'	to	water											
WEDNESDAY	1200	G.P.h.												
THURSDAY	2" -	50	GA.	screen	2"	leader								
FRIDAY			6' overall -		no	seal								
SATURDAY														
OTHER												TOTAL FOR WEEK		

DRFT Drift

Aquifer Quad - Quad

I hereby certify that the above is a true report of hours of my employment during said week, to ... of the Fair Labor Standards Act ...

19___ Signature [signature]

CODED

118-21-30 bcdccb

Elev. 940 ± 5'

1A-25 Golden Valley 1/3-4 104B

203944

HQ (693)

MILLER-DAVIS CO., MINNEAPOLIS 6678-C

EMPLOYEE Brandt and Anderson

WEEK ENDING 1-27 19 61 WEEK No.

DAY OF WEEK	BEFORE NOON IN HR.	MIN.	OUT HR.	MIN.	AFTERNOON IN HR.	MIN.	OUT HR.	MIN.	EVENING IN HR.	MIN.	OUT HR.	MIN.	TOTAL TIME EACH DAY REGULAR	O'RTIME
	90										PUT3		0-90 Drift	
SUNDAY	70	x	54 x	50										
MONDAY	90	"												
TUESDAY														
WEDNESDAY														
THURSDAY														
FRIDAY														
SATURDAY														
OTHER INFORMATION													TOTAL FOR WEEK	

CODED

DRFT Drift B/845

Aquifer PIT — PUT3

I hereby certify that the above is a true report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported June 30 19 61 Signature Y. Halvorson

118-21-30cbbbdA

Elev. 945±5'

1A-25

Golden Valley 203936 120c

2018

MILLER-DAVIS CO., MINNEAPOLIS 6678-C

EMPLOYEE Brandt & Anderson 2013 Kellogg

WEEK ENDING Oct 18 1962 WEEK No.

DAY OF WEEK	BEFORE NOON IN HR.	MIN.	OUT HR.	MIN.	AFTERNOON IN HR.	MIN.	OUT HR.	MIN.	EVENING IN HR.	MIN.	OUT HR.	MIN.	TOTAL TIME EACH DAY REGULAR	O'RTIME
SUNDAY	88 ft													
MONDAY	20 X 48 X 60											QUUU	0-88	Drift DRFT
TUESDAY	14" casing													B/837
WEDNESDAY	20 Town													
THURSDAY	Sand and gravel													
FRIDAY	59'. Sealing													
SATURDAY														
OTHER INFORMATION												TOTAL FOR WEEK		

I hereby certify that the above is a report of hours of my employment during said week, to comply with the Wage and Hour Division of the Fair Labor Standards Act of 1938.

Date Reported Oct 26 1962 Signature Golden

CODED

655.Q (206)

Aquifer QUUU ±5 QUUU

118-21-30 bcdbAb

Elev. 925±5'

APPENDIX J

HYDROGEOLOGIC SETTING AND GROUND WATER CONTAMINATION CHARACTERIZATION

Hydrogeologic Setting and Ground Water Contamination Characterization
Petroleum Release Sites

Minnesota Pollution Control Agency
Tanks and Spills Section
May 1992

Complete this worksheet for all sites with ground water contamination. The worksheet has several purposes. It summarizes remedial investigation (RI) results and conclusions for use by Minnesota Pollution Control Agency (MPCA) staff when reviewing the site to determine whether corrective action will be required to remediate ground water contamination. It also provides supplementary information on investigation, design and reporting requirements (presented in bold type) for sites with ground water contamination. Review this worksheet and all other relevant MPCA documents when developing RI work plans to ensure the investigation meets all RI requirements.

Base answers to the following questions on the results of the ground water receptor survey, RI activities, and published geologic literature. Answer the questions in the space provided, and attach additional sheets if necessary.

1. *Identify and describe the geologic units in which ground water has been impacted by the petroleum release. What is the thickness (or estimated thickness) and estimated lateral extent of the impacted unit?*

   The surficial glacial till unit has been impacted by the release. The till unit is approximately ___ feet thick and extends for several miles in all directions.

At all sites with ground water monitoring wells, the RI must include an estimate of hydraulic conductivity, and provide estimates of the ground water velocity in the impacted unit. Documentation of how you arrived at these estimates must be provided.

2. *What is the hydraulic conductivity, effective porosity, horizontal hydraulic gradient, vertical hydraulic gradient, estimated ground water velocity and flow direction in the impacted unit?*

   K = 1.0 x 10^{-5} to 2.0 x 10^{-4} Porosity = 0.30 dh/dl = _____
   V = 2.2 ft/yr flow direction: South dv/dl = _____

3. *What is the maximum concentration of benzene and total hydrocarbons detected on the site? (parts per billion (ppb) units)*

   Benzene Not detected (Well No. MW-1, 2, and 3, Date 9/29/93)
   Total Hydrocarbons Not detected (Well No. MW-1, 2 and 3, Date 6/29/93)

4. *What is the maximum concentration of benzene and total hydrocarbons detected at or beyond the property boundary? (ppb units)*

   Benzene Not detected (Well No. MW-1 and MW-3, Date 6/29/93)
   Total Hydrocarbons Not detected (Well No. MW-1 and MW-3, Date 6/29/93)

5. *Do contaminant concentrations for any compound exceed the Recommended Allowable Limit (RAL), at or beyond the site boundaries? (Yes/No)*

   No

6. *Do sources of contamination (including contaminated soil) remain at the site? (Yes/No)*
   If Yes, briefly describe.

   Yes. Impacted soil remains in the former tank basin based on tank removal observations and remedial investigation results.

7. *Is municipal water supply available at the site and within one mile downgradient of the site? (Yes/No)*

   No

8. *Are there presently any water wells which use the impacted aquifer located within one half mile downgradient of the site, or one mile downgradient of the site if the aquifer material is fractured? (Yes/No)* No

9. *Are there any plans for ground water development in the impacted aquifer within one half mile downgradient of the site, or one mile downgradient of the site if the aquifer material is fractured? (Yes/No)* No

If you answered No to questions 8 and 9, please skip to question 10 and continue.

If you answered Yes to question 8 or 9, and yes to question 5, corrective action will likely be required to remediate ground water contamination at the site. The RI report should include a proposed Corrective Action Design to meet the following cleanup goal and compliance point.

Cleanup Goal:	*The RAL for VOCs and 1 and part per million total hydrocarbons*
Compliance Point:	*At and beyond the site boundaries.*

At some LUST sites corrective actions may not be technically capable of achieving remediation to RALs. For a discussion of the options which should be considered when designing corrective actions for sites of this type please see the "LUST Program Cleanup Strategy" (Guidance Document 16). document.

<u>Stop</u> here if you answered Yes to question 8 or 9.

10. *Are there nonpotable water supply wells which use the impacted unit downgradient of the site? (Yes/No)* No

11. *Does the plume currently discharge to surface water? (Yes/No)* No
If yes, what is the estimated width of the plume at the shore of the surface water body, and what are the estimated concentrations of the following contaminants at the shore of the surface water body: (The estimation method should be described in the text of the RI report.)

Benzene _____, Ethyl Benzene _____, Toluene _____, Xylenes _____,
Total Hydrocarbons _____

If the answer to question number 11 is Yes, the use category of the surface water body should also be determined, in accordance with Minnesota Rules Chapter 7050, and reported.

12. *Does the plume have a projected point of entry to surface water? (Yes/No)* No
If Yes, what is the distance from the downgradient edge of the plume to the surface water body?

If you answered Yes to question 12, the RI report should characterize the hydrogeologic conditions and land use between the site and the surface water body, and should assess the potential for the plume to discharge to surface water and the likelihood of future ground water use in the vicinity of the plume.

13. *Is the impacted unit a bedrock aquifer? (Yes/No)* No

14. *Has contamination from the site impacted a quaternary surficial or buried aquifer that is presently used as a drinking water aquifer anywhere within a two mile radius of the site? (Yes/No)* No

<u>Stop</u> here if you answered Yes to question 13 or 14. If you answered No to both questions 13 and 14, please continue.

15. *Identify and describe the uppermost drinking water aquifer in the site vicinity. What is the depth to the top of the uppermost drinking water aquifer? What is the water level in the uppermost drinking aquifer?*

Available well logs indicate unconsolidated sand and gravel deposits in the upper most aquifer which are used for drinking water. The thickness of the unconsolidated deposit is approximately 170 feet below ground surface. Recorded water levels were 22 to 82 feet below grade.

16. *Is there a confining unit between the impacted unit and the uppermost drinking water aquifer? What is its thickness and extent?*

The surficial till unit overlies the upper most drinking aquifer. It is composed of silty sand with clay seams and is approximately 30 feet thick. Confining layers of clay are present between the impacted unit and the uppermost drinking water aquifer. The clay layers range in thickness from 14 to 135 feet.

17. *Is the uppermost drinking water aquifer a karst unit or a sole source aquifer?*

No

18. *Are there any existing or abandoned wells within approximately 1,000 feet downgradient of the site?*

No

19. *Are there any other site specific conditions which increase the risk of cross contamination from the impacted unit to a drinking water aquifer?*

No

20. *Based on the answers to questions 14 through 18 and any other site specific information available, summarize and assess the risk of cross contamination from the impacted unit to the uppermost drinking water aquifer.*

Based on the thickness (14 to 135 feet) soil type (clay) of the surficial impacted unit, the risk of impacting a drinking water aquifer is minimal.