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# STATE OF MINNESOTA

DEPARTMENT OF PUBLIC SAFETY - DIVISION OF EMERGENCY MANAGEMENT  
TOWN SQUARE, 444 CEDAR ST. SUITE 223 - SAINT PAUL, MN 55101

## MINNESOTA DUTY OFFICER

### HAZARDOUS MATERIALS INCIDENT REPORT: TANKS

REPORT DATE: 12-10-98 TIME: 1451 DUTY OFFICER: 9

**REPORTED BY:**

NAME: Tim Modjeski  
CO: Northern Environmental  
ADDRESS: 2222 Hwy 52 N  
CITY: Rochester STATE: MN  
PHONE: 507-282-3800 ZIP: 55901  
ALT. PHONE:

**RESPONSIBLE PARTY/PROPERTY OWNER:**

CONTACT: Mark Ogren  
CO: ~~Kroy Petroleum Co.~~ Croix Petroleum Co.  
ADDRESS: 1749 S. Greeley St  
CITY: Stillwater STATE: MN  
PHONE: 651-439-5755 ZIP: 55082  
ALT. PHONE:

DISCOVERY DATE: 12-10-98 TIME: 1000 PREVIOUSLY REPORTED SITE?: Y (N) UNK -LEAK#

SITE NAME & ADDRESS: SAME Croix Petroleum Co offices

CITY: Stillwater ZIP: COUNTY: Washington

NUMBER/SIZE OF TANK'S:	TANK CONTENTS:	AGE OF TANK'S:	TYPE:
2 @ 12,000	Diesel	10 yrs	U.S.T./A.S.T. - STEEL/FIBRE GLASS
1 @ 12,000	Gasoline	"	U.S.T./A.S.T. - STEEL/FIBRE GLASS
1 @ 1,000	Htg. oil	"	U.S.T./A.S.T. - STEEL/FIBRE GLASS
@			U.S.T./A.S.T. - STEEL/FIBRE GLASS

NATIVE SOIL TYPE: Sand SURFACE WATER NEARBY? Y (N) UNK

ARE THERE ANY MONITORING WELLS ON SITE? Y (N) UNK

WHAT IS THE SITE WATER SOURCE: MUNICIPAL / PRIVATE WELL/UNK

CONTAMINATED SOIL EXCAVATED?: Y (N) UNK QUANTITY:

ABLE TO DIG OUT OF CONTAMINATION?: Y (N) UNK

GROUND WATER ENCOUNTERED?: Y (N) UNK DEPTH TO GROUND WATER?:

FREE PRODUCT FOUND?: Y (N) STAINED SOILS?: Y (N) PETROLEUM ODORS?: Y (N)

HIGHEST VAPOR READING: 1 ppm ANALYTICAL RESULTS: Completed

NARRATIVE: 450 ppm per Diesel range organic. Contamination was from Htg. oil tank which was in separate basin.  
T. 13840

**DUTY OFFICER NOTIFICATIONS MADE: (AGENCY, NAME, TIME)**

MPCA TANKS, ATTN: STACEY VAN PATTON - FAX

ANY QUESTIONS? CONTACT THE MINNESOTA DUTY OFFICER AT 649-5451 OR 1-800-422-0798

This Space For MPCA Use Only:

MPCA PROJECT MANAGER: JME

LEAK NUMBER: 12308

Who Took: \_\_\_\_\_

PM: \_\_\_\_\_

Priority: \_\_\_\_\_ High  
                  \_\_\_\_\_ Action  
                  \_\_\_\_\_ No action

Action: \_\_\_\_\_ Advise  
                  \_\_\_\_\_ Visit by \_\_\_\_\_  
                  \_\_\_\_\_ State money spent  
                  \_\_\_\_\_ File  
                  \_\_\_\_\_ No File

**REMARKS:**

Copy To? \_\_\_\_\_

**Send Packet?**

- \_\_\_\_\_ Disposal Packet
- \_\_\_\_\_ Reporting Packet
- \_\_\_\_\_ Spill Bill Packet
- \_\_\_\_\_ VIC Packet
- \_\_\_\_\_ VPIC Packet
- \_\_\_\_\_ Other \_\_\_\_\_

**Quickie Closure:(circle one)**

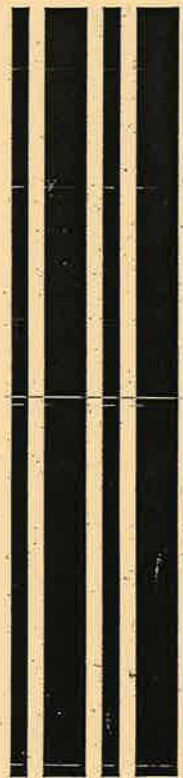
**Why Closed:**

- |        |                              |                                     |  |
|--------|------------------------------|-------------------------------------|--|
| Send P | <u>1</u> --Referred to LEAKS | <u>6</u> --Referred to local/county | <u>10</u> --No Response Necessary                  |
|        | <u>2</u> --Referred to RCRA  | <u>7</u> --Referred to Region       | <u>11</u> --Closed for other reasons (see remarks) |
|        | <u>3</u> --Referred to AQ    | <u>8</u> --Referred to GWSW         | <u>12</u> --AG Lead                                |
|        | <u>4</u> --Referred to WQ    | <u>9</u> --Response Completed       |  |
|        | <u>5</u> --Referred to VIC   |                                     |  |

Quickie  
**SPILL #** \_\_\_\_\_

Why Closed

Send P





# Minnesota Pollution Control Agency

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April 3, 2000

Mr. Mark Ogren  
Croix Oil Company  
1749 South Greeley Street  
Stillwater, MN 55082

RE: Petroleum Tank Release Site File Closure  
Site: Croix Petroleum, 1749 South Greeley Street, Stillwater  
Site ID#: LEAK00012308

Dear Mr. Ogren:

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.

The MPCA reserves the right to reopen this file and to require additional investigation and/or cleanup work if new information or changing regulatory requirements 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 (Supp. 1997) 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 (1996), the Minnesota Superfund Law.

Because you performed the requested work, the state may reimburse you for a major portion of your costs. The Petroleum Tank Release Cleanup Act establishes a fund which may provide partial reimbursement for petroleum tank release cleanup costs. This fund is administered by the Department of Commerce Petro Board. Specific eligibility rules are available from the Petro Board at 651/297-1119 or 651/297-4203.

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.

Mr. Mark Ogren  
Page 2  
April 3, 2000

For specific information regarding petroleum contamination that may remain at this leak site, please call the MPCA File Request Program at 651/297-8499. The MPCA fact sheet #3.35 *Leak/Spill and Underground Storage Tank File Request Form* (August 1997) 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 651/297-8594.

Sincerely,



Jessica Ebertz  
Project Leader  
Metro Site Remediation Section

JME:tf

cc: Moril Weldon, Stillwater City Clerk  
Kim Kallestad, Stillwater Fire Chief  
Eric Magee, Washington County Solid Waste Officer  
Tim Modjeski, Northern Environmental  
Minnesota Department of Commerce Petrofund Staff



# Minnesota Pollution Control Agency

January 5, 1999

Mr. Mark Ogren  
Croix Petroleum  
1749 South Greeley Street  
Stillwater, Minnesota 55082

RE: Petroleum Storage Tank Release Investigation and Corrective Action  
Site: Croix Petroleum Company Offices, 1749 South Greeley Street, Stillwater  
Site ID No#: LEAK00012308

Dear Mr. Ogren:

## Notice of Release

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

## Legal Obligations

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

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

## Request to Take Corrective Action

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

520 Lafayette Rd. N.; St. Paul, MN 55155-4194; (612) 296-6300 (Voice); (612) 282-5332 (TTY)

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

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

#### Required Response

MPCA staff requests a response to this letter within 30 days. Please tell us whether you intend to proceed with the requested work. If you do not respond within this time frame, the MPCA staff will assume that you do not intend to comply, in which case the MPCA Commissioner may order you to take corrective action. Failure to cooperate with the MPCA in a timely manner may result in reduced reimbursement from the Petro Board. See Minn. R. 2890, (Supp. 1997). The enclosed fact sheets will provide you with the information necessary to complete a successful investigation and clean-up. If you have any questions concerning this letter or need additional information, please contact me at (651)297-8594. Please reference the above LEAK # in all correspondence. If you are calling long distance, you may reach the MPCA St. Paul office by calling 1-800-657-3864.

Sincerely,

*JME*  
Chauntle S. Anderson

Jessica Ebertz  
Project Manager  
Metro Site Remediation Section  
Metro District

JME:csa

Enclosure

cc: Morli Weldon, City Clerk, Stillwater  
Eric Magee, Washington County Solid Waste Officer  
Tim Modjeski, Northern Environmental  
Bob Barthol, Fire Chief, Stillwater





Edo  
4-3-00

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

SITE ID#	RELEASE SITE	APPLICANT	REGION
LEAK00001903	Former Pump & Munch	Boyer Ford Trucks	Metro
LEAK00007905	Sears Logistic Services #8702	Sears Roebuck & Company	Metro
LEAK00011457	Gotvald Implement	Gotvald Implement	2
LEAK00012297	McGarvey Coffee	Superior Coffee	Metro
LEAK00012308	Croix Oil Company Offices	Croix Oil Company	Metro
LEAK00012427	RIM, ESKO	Ram Mutual Insurance Co.	1
LEAK00012597	Former DX Service Station	EEIA General Partnership	Metro
LEAK00013060	Edwards Oil Bulk Facility	Edwards Oil Company	1
LEAK00013475	United Farmers Elevator	Dooley's Petroleum	4
LEAK00013720	Monson Lumber Co. Hatwick	Monson Lumber Company	4
LEAK00013883	Farmers Union Oil of Southern Valley	Farmers Union Oil of Southern Valley	3

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) (1998).

2. Compliance with Applicable Requirements: **ADEQUATE**

Information readily available to the Minnesota Pollution Control Agency staff shows that the applicant has complied with the applicable requirements of Laws 1999, Chapter 203, section 2, to be coded as Minnesota Statutes Section 115C.09, subdivision 3(i).

The determinations in this report are made solely for the purpose of determining eligibility for reimbursement under Minn. Stat. § 115C.09, subd. 2 (1998) and Laws 1999, Chapter 203, section 2, to be coded as Minnesota Statutes Section 115C.09, subdivision 3(i). Nothing in this site report releases any person from liability, and the Minnesota Pollution Control Agency 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: 3/5/01



Mark Schmitt  
 Supervisor  
 Policy and Planning  
 Site Remediation Unit

# Petroleum Tank Release Compliance Checklist

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

SITE NAME Croix Oil Co. Offices LEAK000 12308

leaking  
X  
heating oil

**UNREGULATED TANK(S)**.....[USTs 110 gallons or less; OR ASTs 500 gallons or less; OR ASTs between 500 – 1,100 gallons if they are greater than 500 feet from surface water; OR residential (for non-commercial purposes) and heating oil ASTs/USTs 1,100 gallons or less; OR farm USTs 1,100 gallons or less; OR any farm AST, regardless of size if used for farming purposes; OR ASTs that are on site for less than 30 days (regardless of size)]

**STATE REGULATED TANKS**.....[heating oil USTs with a capacity more than 1,100 gallons OR all ASTs not specified above]

ASTs  
X

**FEDERALLY REGULATED TANKS**.....[all USTs not specified above]

STATUS OF RESPONSIBLE PARTY: Regular Applicant  Limited Use Applicant

## UNREGULATED TANKS, STATE TANKS, FEDERAL TANKS

Release Notification: Date release discovered: 12/10/98 Date release reported: 12/10/98

When/how was release discovered? \_\_\_\_\_

Was there environmental damage due to delay? Yes \_\_\_\_\_ No \_\_\_\_\_

Adequate  Inadequate Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

Comments: \_\_\_\_\_

Cooperation Issues: Yes \_\_\_\_\_ No  (If Yes, please prepare a narrative to be appended to the CSR).

## STATE TANKS, FEDERAL TANKS

Corrosion Protection: Tanks: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_ Piping: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

Applicable for steel piping/steel USTs installed on or after 8/1/85. Steel piping/steel USTs installed before 8/1/85 require corrosion protection no later than 12/22/98. Heating oil USTs installed before 8/1/85 don't ever require corrosion protection. ASTs do not require corrosion protection. VIOLATIONS WHICH OCCURRED BEFORE 12/22/98 SHOULD BE CITED AS INADEQUATE BUT NOT RECOMMENDED FOR REDUCTION.

Adequate  Inadequate Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

AST Secondary Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

Containment: Applicable only for dikes or other structures that would contain a spill as required by Minn. R. 7151.6400, subp. 1B (Supp. 1998). Does not apply to impervious liners or other AST safeguards. VIOLATION WHICH OCCURRED PRIOR TO 11/1/98 SHOULD BE CITED AS INADEQUATE BUT NOT RECOMMENDED FOR REDUCTION.

Adequate  Inadequate Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

**FEDERAL TANKS**

**Spill Prevention:** Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_  
Applicable for USTs installed on or after 12/22/88. USTs installed before 12/22/88 require spill prevention by 12/22/98. VIOLATIONS WHICH OCCURED PRIOR TO 12/22/98 SHOULD BE CITED AS INADEQUATE BUT NOT RECOMMENDED FOR REDUCTION.

\_\_\_\_\_ **Adequate** \_\_\_\_\_ **Inadequate** Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

**Overfill Protection:** Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_  
Applicable for USTs installed on or after 12/22/88. USTs installed before 12/22/88 require spill protection by 12/22/98. VIOLATIONS WHICH OCCURED PRIOR TO 12/22/98 SHOULD BE CITED AS INADEQUATE BUT NOT RECOMMENDED FOR REDUCTION.

\_\_\_\_\_ **Adequate** \_\_\_\_\_ **Inadequate** Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

**Leak Detection: TANKS: Tank Leak Detection:** Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

Tank Tightness Testing Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

<u>If tank was installed:</u>	<u>Then the leaks detection deadline is:</u>
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: Pipe leak detection:** Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

Pipe tightness testing: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A \_\_\_\_\_

(Applicable for pressurized piping installed after 12/22/88. Pressurized piping installed before 12/22/88 must have leak detection by 12/22/90.)

VIOLATIONS WHICH OCCURRED BEFORE 12/22/93 SHOULD BE CITED AS INADEQUATE BUT NOT RECOMMENDED FOR REDUCTION.

**Audit Program:** Has the RP entered the audit program? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, evaluate further to determine if reductions should be waived (for tank violations only). The only time consideration will be given for waiving the tank system violations is when there is **documented** enrollment in the audit program **before** discovering a release at the site.

\_\_\_\_\_ **Adequate** \_\_\_\_\_ **Inadequate** Recommend Reduction? Yes \_\_\_\_\_ No \_\_\_\_\_

Completed by: JME Date: 2-27-01 10/00

OFFICE USE ONLY:

LEAK # 12308 PHASE 2  
ENTERED 2/16/01 JC

RECEIVED

JAN 29 2001

JAN 29 2001

RECEIVED

MN Dept. of Commerce

MINNESOTA PETROLEUM TANK RELEASE COMPENSATION BOARD  
APPLICATION FOR REIMBURSEMENT

I. APPLICANT INFORMATION

Name Croix Oil Company

Mailing Address P.O. Box 15, 1749 South Greely Street

City Stillwater State MN Zip 55082

Contact Person (if different from above "Name")

Day Phone (651) 439-5755 Ext: Fax

Check One:

Check One:

- Responsible Person
- Volunteer
- Non-Responsible Person  
(see Application Guide)

- Corporation
- Partnership
- Individual
- Municipality
- State, federal, or other public agency

10/88 to 10/20/98 Dates applicant owned or operated tank(s) [complete if "Responsible Person" box is checked]

/ / to / / Dates applicant owned property [complete if "Volunteer" box is checked]

II. LEAK SITE INFORMATION

Petrofund Leak Number 12308 MPCA Project Manager Jessica Ebertz

Tank Facility Name Croix Oil Company

Address 1749 South Greely Street

City Stillwater, MN Zip 55082

Day Phone (651)439-5755 County of Leak Site: Washington

closed  
4/3/00

12/10/98 Date petroleum leak detected

12/10/98 Date petroleum leak reported to MPCA

Yes  No Is tank leak on personal residential property?

cubic yards Total amount of contaminated soil excavated at this site

III. ASSIGNMENT CERTIFICATION / TERMINATION

CHECK ALL THAT APPLY:

- Petrofund Assignment Agreement for this application has been executed (attach original of new assignment form)
- Assignment form is already on file with the Department of Commerce

List Assignees: \_\_\_\_\_

Not applicable

**IV. APPLICATION PHASE**

Check appropriate box and complete the information requested for the box checked (*see Application Guide for further information*)

 **Preremoval site assessment**

/ / Date of assessment report

/ / Date of property sale, if applicable

 **Phase 1 Soil Corrective Action Costs or Remedial Investigation Costs**

01/05/99 Date of MPCA soil treatment letter (*attach copy*)

 **Phase 2 Installation Costs of MPCA-approved Soil or Groundwater Comprehensive Corrective Action Design System (CCAP/CAD) or Groundwater Monitoring and System Maintenance Costs**

/ / Date of CCAP/CAD approval letter (*attach copy*)

04/03/00 Date of MPCA site closure letter (*attach copy*)

**V. SOURCE AND CAUSE**

What was the source and cause of the petroleum release at this site? (*see Application Guide*)            The release was discovered during the removal of the 1,000 gallon heating fuel UST. Some pitting was noted on the tank description, but the most likely causes would be overfilling and possible loosening of the pipe connections over time.

How was the release discovered?            Headspace readings of soil beneath the tank indicated small amount of organic vapor. Analytical results confirmed the presence of DRO.

If the release was not reported to the MPCA within 24 hours of discovery, state the reason why:           

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

Yes  No Did any of the persons listed above incur corrective action costs related to this petroleum release?

If yes, list name(s) and address(es) if known:           

**VI. TYPE OF REMEDIATION SYSTEM**

Please check the type of soil or groundwater remediation system used at this site or projected for it.

**Soil Remediation Technologies**

- Biopiles  Bioventing  Incineration  Landfarming  
 Low-temperature thermal desorption  Soil vapor extraction  
 Soil washing  Natural attenuation

**Groundwater Remediation Technologies**

- Air sparging  Biosparging  Dual phase extraction  
 In-situ groundwater bioremediation  Natural attenuation

**VII. COMPETITIVE BIDDING**

List all written bids/proposals obtained to perform corrective action at this site (*attach additional sheets if necessary*).

**Attach copies of all signed and dated bids/proposals.**

	Bidder Selected*	Name	Amount of Bid	Date of Bid	Task
Consultants	<input checked="" type="checkbox"/>	Northern Environmental Technologies, Inc.	\$2,653.60	06/28/99	ISA
	<input type="checkbox"/>	Omni Environmental	\$2,655.00	06/23/99	ISA
	<input checked="" type="checkbox"/>	Northern Environmental Technologies, Inc.	\$2,040.00	12/10/99	RI/CAD Report
Contractors	<input checked="" type="checkbox"/>	Thein Well Drilling (included in NETI proposal)	\$ 935.00	03/05/99	ISA Drilling
	<input type="checkbox"/>	Matrix Technologies Corp.	\$1,105.00	03/05/99	ISA Drilling
	<input type="checkbox"/>				
	<input type="checkbox"/>				

\*If lowest bid/proposal was not selected, explain that decision on a separate sheet.

**VIII. MPCA TANK INFORMATION AND COMPLIANCE**

Yes  No Have you submitted an underground storage tank audit?

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 documents "*Do Underground Storage Tank 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/overflow protection requirements.

If you are unsure how tank rules apply to your tanks, please call the UST Compliance and Assistance Unit at (612) 297-8679. Please tell the receptionist you have questions about this form.

*(List all tanks at the site. Please attach additional sheets if necessary.)*

Tank #	Petroleum Product	Capacity	Tank Material	Date Installed	Date Registered	Date Removed (if applicable)
1	Diesel	12,000	Steel (STI-P-3)	1988	1988	10/28/98
2	Diesel	12,000	Steel (STI-P-3)	1988	1988	10/28/98
3	Gasoline	12,000	Steel (STI-P-3)	1988	1988	10/28/98
4	Heating Oil	1,000	Steel	>20 yrs.	unknown	10/30/98
5						

**TANKS**

Tank #	Leak Detection (select method below)	Corrosion Protection (select method below)	Spill Bucket (Yes/No)	Overfill Protection (select method below)
1	5	3	N	2
2	5	3	N	2
3	5	3	N	2
4	1	1	N	1
5				

**Leak detection method (select all that apply):**

1. None
2. Inventory control plus annual tightness testing
3. Inventory control plus tightness testing every 5 years
4. Manual tank gauging
5. Manual tank gauging plus annual tightness testing
6. Manual tank gauging plus tightness testing every 5 years
7. Statistical inventory reconciliation (SIR)
8. Automatic tank gauging
9. Interstitial monitoring
10. Vapor monitoring
11. Ground water monitoring
12. Other (specify):

**Corrosion protection method:**

1. None
2. Fiberglass, jacketed steel or composite tank
3. STI-P 3 tank
4. Anodes installed
5. Impressed current system
6. Lined tank
7. Other (specify):

**Overfill protection method:**

1. None
2. Ball float valve
3. Automatic shutoff
4. Audible alarm
5. Other (specify):

If tank tightness tests were performed, indicate dates of all tests: 2/94 5/96 7/97

## PIPING

Tank #	Pressurized Piping Leak Detection		Suction Piping Leak Detection	Corrosion Protection (select method below)
	Continuous Leak Detection (select method below)	Periodic Leak Detection (select method below)	Check valve located at: <input type="checkbox"/> Tank <input type="checkbox"/> Pump (select method below)	
1	1	1	1	5
2	1	1	1	5
3	1	1	1	5
4	1	1	1	1
5				
<b>Continuous method:</b> 1. None 2. Automatic flow restrictor 3. Automatic shutoff device 4. Continuous alarm		<b>Periodic method:</b> 1. None 2. Annual tightness test 3. Statistical inventory reconciliation (SIR) 4. Electronic line leak detector 5. Interstitial monitoring 6. Groundwater monitoring	<b>Suction leak detection method:</b> 1. None 2. Tightness test every 3 years 3. Statistical inventory reconciliation (SIR) 4. Interstitial monitoring 5. Vapor monitoring 6. Groundwater monitoring	<b>Corrosion protection method:</b> 1. None 2. Steel with anodes 3. Coated steel with anodes 4. Impressed current 5. Fiberglass or flexible piping

If piping tightness tests were performed, indicate dates of all tests: \_\_\_\_\_

\_\_\_\_\_ Zahl's \_\_\_\_\_ Identify MPCA-certified tank removal contractor who performed tank excavation

# \_\_\_\_\_ 45 \_\_\_\_\_ Tank removal contractor's MPCA certification number

B. **Aboveground Storage Tanks.** Complete the following information to reflect the status of all aboveground tanks at this site 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)
- ◆ whether the volume of the secondary containment area is adequate for the contents of the largest tank (Yes/No)

Tank #	Contents	Capacity	Date Installed	Registered (Yes/No/Unk)	Description of Secondary Containment			Volume (Yes/No)
					Walls	Base	Verification	
1								
2								
3								

**IX. ELIGIBLE COSTS**

10/01/98 to 02/28/00 Dates of work covered by invoices submitted with this application

- Yes  No Does this application contain costs listed as ineligible under Minn. Rule 2890.0071? (see Application Guide)
- Yes  No Are any of the costs included in this application in dispute? If so, describe the disputed issue(s) on a separate sheet.
- Yes  No Are any of the costs included with this application subject to bankruptcy proceedings? If so, please describe the nature of the proceedings on a separate sheet.
- Yes  No Are ongoing corrective action costs expected at this site? If so, explain briefly below.

Type of Work	Approximate Cost
_____	\$ _____
_____	\$ _____
_____	\$ _____

Please provide a chronological description (including dates) of the clean-up activities covered on this application, including any special circumstances (attach additional sheets if necessary):

ISA performed on 7/14/99, LSI report.

- Yes  No Has the applicant made a claim against any third party for costs for which the applicant is seeking reimbursement or for any costs associated with this release? If so, attach a separate sheet identifying all third parties and provide a copy of all correspondence between the applicant and third parties.
- Yes  No Is the applicant aware of any action the applicant committed or of any action committed by a consultant or contractor which may have caused or aggravated the contamination at this site? If so, please explain:

\_\_\_\_\_  
\_\_\_\_\_

**X. INSURANCE**

- A.  Yes  No Did the applicant have in effect one or more insurance policies at the time of the release?  
*If "No," skip to question D. If "Yes," proceed to the next question.*
- B.  Yes  No Was a claim filed for coverage of any of the costs for which the applicant is seeking reimbursement in this application? *If "Yes," skip to question C.*  
  
If "No," please explain why no claim was filed: \_\_\_\_\_  
\_\_\_\_\_  
*(Skip to question D.)*
- C.  Yes  No Did the insurer agree to cover your claim?  
If "Yes":
  - State the amount of benefits received (or to be received) \$ \_\_\_\_\_
  - Provide a copy of the insurance policy and the insurer's explanation of benefits.If "No":
  - Provide a copy of the insurance policy and the insurer's letter explaining the reasons for denying your claim.
- D.  Yes  No Is the applicant aware of any other insurance policy, whether held by the applicant or another person, that could cover any of the eligible costs in this application? If so, please explain: \_\_\_\_\_  
\_\_\_\_\_



**XI. CONSULTANTS/CONTRACTORS**

Complete the following for **ALL** contractors, subcontractors, consultants, engineering firms or others who performed corrective actions at this site and whose work is covered by invoices included in this application. (See Application Guide.)

Describe any relationship, financial or otherwise, between the applicant and anyone who performed work at this site: None

**Land Farmer/Compost Site or Thermal Treatment Facility**

# \_\_\_\_\_ Petrofund Registration Number County \_\_\_\_\_  
Name of individual or firm: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ (City) \_\_\_\_\_ (State) \_\_\_\_\_ (Zip)  
Contact Person: \_\_\_\_\_ Day phone #: ( \_\_\_\_\_ ) \_\_\_\_\_

**Consultants/Contractors (ATTACH ADDITIONAL PAGES IF NECESSARY)**

# 1020 Petrofund Registration Number  
Name of individual or firm: Northern Environmental Technologies, Inc.  
Mailing Address: 112 Seventh Street NE Rochester MN 55906  
(City) (State) (Zip)  
Contact Person: David W. Anderson Day phone #: (507) 282-3800

# 1201 Petrofund Registration Number  
Name of individual or firm: Spectrum Labs  
Mailing Address: 301 West County Road E2 New Brighton MN 55112  
(City) (State) (Zip)  
Contact Person: Roberta taylor Day phone #: (651) 633-0101

# 1090 Petrofund Registration Number  
Name of individual or firm: Thein Well Drilling  
Mailing Address: P.O.Box 429 Clara City MN 56222  
(City) (State) (Zip)  
Contact Person: Willard Greely Day phone #: (320) 847-3207

**XII. ATTACHMENTS**

The following attachments are included with this application (see Application Guide):

- Either A or B must be included:  
 Attachment A Standardized Invoice Summary  
 Attachment B Itemized Cost Worksheet

- Check all that apply:  
 Attachment C Small Business Owner Form  
 Attachment D Small Gasoline Retailer Form  
 Attachment E Combined Leaksite Costs Over \$250,000

**XIII. CERTIFICATION PAGE** (see Application Guide)

**APPLICANT SIGNATURE and NOTARIZATION** (SIGNATURE AND NOTARIZATION REQUIRED)

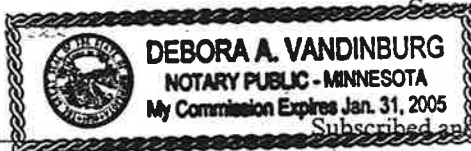
If information contained in this application changes in any material way after this application is submitted to the Petrofund, I will immediately notify the Petrofund in writing of those changes.

I understand that the information used to support this application is subject to audit by the Minnesota Pollution Control Agency and the Minnesota Department of Commerce.

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 gathered and evaluated 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, then 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.

I further certify that I am authorized to sign and submit this application on behalf of Croix Oil Company  
Corporation / Partnership / Municipality / Public Agency



**NOTARIZATION**

Signature Mark J. Ogren  
Name (print/type) MARK J. OGREN of JANUARY, 1999 <sup>2001</sup>  
Title President Notary Public Debora A. Vandenburg  
Date Signed 1/25/01 My commission expires 1/31/05

**CONSULTANT SIGNATURE** (SIGNATURE REQUIRED)†

I, David W. Anderson, confirm that all costs claimed by Northern Environmental Technologies, Inc. as a part of this  
(Individual name) (Consultant company)  
application are a true and accurate account of services performed. I further confirm that no costs submitted for inclusion on this  
application by my consulting company are ineligible as listed in Minn. Rule 2890.0071.

David W. Anderson Geologist 1/22/01  
Consultant Signature Title Date

†Duplicate this section if more than one consultant signature is required.

**APPLICATION PREPARER'S SIGNATURE** (SIGNATURE REQUIRED)

David W. Anderson  
(Preparer's name)  
David W. Anderson Geologist 1/22/01  
Preparer's Signature Title Date

\* NOTE: SUBMIT CERTIFICATION PAGE CONTAINING ORIGINAL SIGNATURES.

Please send this application and accompanying documents to:  
MINNESOTA DEPARTMENT OF COMMERCE - PETROFUND  
133 EAST SEVENTH STREET  
ST. PAUL, MN 55101-2333  
(651) 297-1119 / (651) 297-4203 / 1-800-638-0418

THIS APPLICATION IS EFFECTIVE JULY 1, 2000 - JUNE 30, 2001

## ATTACHMENT A STANDARDIZED INVOICE SUMMARY

Please use this form if the costs you are submitting for reimbursement have been invoiced to you on the standardized invoice forms prescribed by the Petrofund Board. **This attachment must accompany your application if you entered into a contract on or after October 6, 1995.**

For each standardized invoice form you are submitting with this application, enter the Grand Total from the Actual Invoice Amount column on the corresponding line in the box below. Add these numbers together, subtract the amount of insurance reimbursement you have received, and multiply the resulting total by the appropriate reimbursement rate.

STANDARDIZED INVOICE SUMMARY	
Preremoval Site Assessment.....	\$ _____
Underground Storage Tank Removal Assessment .....	\$ _____
Initial Site Assessment.....	\$ <u>2231.00</u> _____
Additional Site Assessment .....	\$ _____
Remedial Investigation / Corrective Action Design Report .....	\$ <u>2328.75</u> _____
Remedial Design / Maintenance .....	\$ _____
Contractor Services.....	\$ _____
Tank Removal .....	\$ _____
Interest.....	\$ _____
TOTAL .....	\$ <u>4559.75</u> _____
Insurance Reimbursement (subtract)    -	\$ ( <u>0.00</u> )
	= \$ <u>4559.75</u> _____
	x 90%*
TOTAL REIMBURSEMENT REQUEST =	\$ <u>4103.78</u> _____

\* If a different reimbursement rate applies, calculate at that rate. See Application Guide.

☞ Please attach a copy of a site map that shows the former tank basin, the excavation area, and any on-site structures. If new tanks were installed, the map also should show their sizes and location(s). The site map should also identify the location of any soil borings and monitoring wells on the property.

➔ **Tank removal costs are eligible only to those applicants that are small gasoline retailers or small business owners as defined in Minn. Stat. §115C.09, Subd. 3f and 3g.**



February 23, 2000

**RECEIVED**

**FEB 25 2000**

Ms. Jessica Ebertz  
Minnesota Pollution Control Agency  
520 Lafayette Road  
Saint Paul, Minnesota 55155-4194

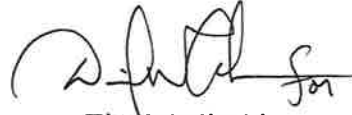
**MPCA, Metro District  
Site Remediation**

**RE: Alteration of LSI Reporting Format for Croix Oil Company, 1749 South Greely Street, Stillwater, MN  
MPCA Leak # 12308**

Dear Ms. Ebertz:

Per our earlier conversation, during tank removal activities at the site, impacted soil was detected beneath the 1000-gallon heating oil UST. As a result, five soil borings were advanced in the proximity of the former UST basin and around the site as part of a LSI. Field screening and analytical results did not detect the presence of petroleum hydrocarbons in the subsurface and groundwater was not encountered. While on-site, a walking well survey and a vapor risk assessment were conducted. However, based on the analytical results, the County Well Index was not searched. As such, figures 4 and 5, appendices F and G, and information pertaining to them, are not included in this report.

Thank You,



Tim Modjeski  
Project Manager

**RECEIVED**

FEB 25 2000

MPCA, Metro District  
Site Remediation

**LIMITED SITE INVESTIGATION**

**CROIX OIL COMPANY  
1749 SOUTH GREELY STREET  
STILLWATER, MN 55932**

**MPCA LEAK # 12308**

**FEBRUARY 15, 2000**



**Tanks and Emergency Response Section**  
**Minnesota Pollution Control Agency**

**Remedial Investigation Report Form**

Fact Sheet #3.24

January 1997

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This form must be completed for all sites in which a remedial investigation (RI) is conducted--this includes either a *Limited Site Investigation (LSI)* or a *full RI*. Completing this form will provide the MPCA with the minimum amount of information necessary for a *full RI*. Additional information should be included if deemed important for making a site cleanup decision. If the consultant has concluded that a *LSI* is applicable to this site, Section 6 and Section 7 may be deleted from this report.

Refer to Minnesota Pollution Control Agency (MPCA) fact sheet #3.1, "Leaking Underground Storage Tank Investigation and Cleanup Policy" for guidance for the overall objectives of a RI and other MPCA fact sheets regarding investigations.

When a tank has been excavated, refer to fact sheets #3.6, "Excavation of Petroleum Contaminated Soil" and #3.7, "Excavation Report Worksheet for Petroleum Release Sites" for reporting requirements.

If free product is discovered the initial reporting should be done in accordance with fact sheet #3.3 "Free Product: Evaluation and Recovery" and fact sheet #3.4, "Free Product Recovery Report Worksheet."

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Leak Number: 12308

Date: 2/15/00

Responsible Party: Croix Oil Company

R.P. phone #: (651) 439-5755

Facility Name: Croix Petroleum

Facility Address: 1749 South Greely Street

City: Stillwater

County: Washington

Zip Code: 55082

Location of site: LAT: 45N 3'29" LONG: 92W 48'18" Circle one: UTM/**State**

## TABLE OF CONTENTS

SECTION 1: Emergency and High Priority Sites

SECTION 2: Site and Release Information

SECTION 3: Excavated Soil Information

SECTION 4: Extent and Magnitude of Soil Contamination

SECTION 5: Aquifer Characteristics/Ground Water Contamination Assessment

SECTION 6: Extent and Magnitude of Ground Water Contamination **(Not Applicable)**

SECTION 7: Evaluation of Natural Biodegradation **(Not Applicable)**

SECTION 8: Well Receptor Information/Assessment

SECTION 9: Surface Water Risk Assessment

SECTION 10: Vapor Risk Assessment/Survey

SECTION 11: Discussion Section

SECTION 12: Conclusions and Recommendations

SECTION 13: Required Figures

SECTION 14: Appendices

SECTION 15: Consultant (or other) Information



### Section 1: Emergency and High Priority Sites

- |  |     |    |
|--|-----|----|
| 1. Is an existing drinking water well impacted?  | YES | NO |
| 2. Are there existing vapor impacts?   | YES | NO |
| 3. Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million (ppm) range in ground water in a well located close to the surface water. | YES | NO |
| 4. Has the release occurred in the last 30 days?   | YES | NO |
| 5. Has free product been detected at the site?   | YES | NO |
| 6. Is a sand or gravel aquifer impacted, which is tapped by water wells, within or potentially within 500 feet from the edge of the plume or does impacted soil overlie a karsted limestone or fractured bedrock? If yes, explain:                         | YES | NO |

If you answered *YES* to any of questions 1 through 6 above describe below the actions taken to date to reduce or eliminate the risk posed by the release.

## Section 2: Site and Release Information

2.1 Describe the land use and pertinent geographic features within 1,000 feet of the site.

**The site was a bulk petroleum facility, located on relatively level topography in the southwest section of Stillwater. The site is within a scattered, light industrial, commercial and residential area approximately ¼ mile north of Highway 36 and approximately 1.4 miles west of Highway 95. The main residential areas of the city are approximately 0.4 miles to the north and east of the site. The St. Croix River and associated river valley cliffs are over a mile away to the northeast. Lily Lake is approximately 2200 feet to the north of the site and an unnamed pond (locally known as Brick Pond) is approximately 1000 feet to the north-northeast. Within the immediate area of the site, there is a strip mall and a retail gas station.**

**Table 1.**

Provide the following for all tanks that have been at the site:

Tank #	UST or AST	Capacity	Contents	Age	Status*	Condition
1	UST	12K	Diesel	9 yrs.	Removed (10/28/98)	Excellent, no corrosion or pitting
2	UST	12K	Diesel	9 yrs.	Removed (10/28/98)	Excellent, no corrosion or pitting
3	UST	12K	Gasoline	9 yrs.	Removed (10/28/98)	Excellent, no corrosion or pitting
4	UST	1000	Heating Oil	Unknown	Removed (10/30/98)	Good, some pitting not substantial

\*Indicate: *removed (date), abandoned in place (date), or currently used*

2.2 Describe the status of the other components of the tank system(s), (i.e., piping and dispensers) for those tanks listed above. **Dispensers and piping for the 12K tanks appeared to be in very good condition and the fill ports did not show evidence of overfilling. The heating oil tank fill port and piping also appeared to be in good condition.**

2.3 Identify and describe the source or suspected source(s) of the release. **The most likely cause of release from the 1000-gallon heating oil UST would have been from leaks at the tank/piping connection and/or periodic overfilling of the tank.**

2.4 What was the volume of the release? (if known): **Unknown** gallons

2.5 When did the release occur? (if known): **Unknown**

### Section 3: Excavated Soil Information

3.1 Was soil excavated for off-site treatment? Yes No

If *YES* then complete the fact sheet #3.7 "Excavation Report Worksheet for Petroleum Release Sites" and include it as an appendix.

Date excavated: \_\_\_\_\_

Volume removed: \_\_\_\_\_ cubic yards

3.2 Indicate soil treatment type:

- land treatment
- thermal treatment
- composting/biopiling
- other (\_\_\_\_\_)

Name and location of treatment facility:

\_\_\_\_\_  
\_\_\_\_\_

### Section 4: Extent and Magnitude of Soil Contamination

4.1 Were soil borings conducted in or immediately adjacent to all likely source areas (e.g., underground storage tank basins, above ground storage tank areas, piping, dispensers, remote fill pipes, known spill areas)? *YES NO*

4.2 To adequately define the vertical extent of contamination soil borings should be completed at least five feet below the water table or ten feet below the deepest measurable (field screening and visual observation) contamination, whichever is deeper. Were all soil borings completed to the required depth? *YES NO*  
**PID readings were <1 ppm for all headspace measurements from all boreholes. Push probe refusal was encountered in all boreholes at varying depths (Table 2). Groundwater was not encountered in any of the boreholes.**

4.3 To adequately evaluate site stratigraphy at least one boring should be completed 20 feet below the water table, unless a confining layer is present. Was this done? *YES NO*

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see fact sheet #3.19, "Soil and Ground Water Investigations Performed During Remedial Investigations" regarding exceptions and MPCA approval for depth of drilling): **Probe advancement was refused in all boreholes at varying depths, groundwater was not encountered in any borehole.**



4.5 If any non-petroleum compounds were detected list them below and identify possible sources of these compounds. **Not applicable**

4.6 Describe the vertical and horizontal extent and magnitude of soil contamination.  
**No contamination was detected in any of the head space readings collected from the soil borings. Likewise, petroleum hydrocarbons were not detected in any of the analytical soil samples.**

## Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

5.1 Hydraulic conductivity is used to evaluate risk to present or potential ground water receptors. The level of potential risk determines the level of confidence required of the hydraulic conductivity values. Indicate average hydraulic conductivity and methods used for measurement and estimation.

### Measurement

Methods of measuring aquifer parameters are *aquifer* and *permeameter* tests. Aquifer tests such as pumping and slug tests are necessary to evaluate parameters of the actual undisturbed aquifer material. Pumping tests evaluate the largest volume of aquifer material, providing the best measurement of *in situ* aquifer parameters. Slug tests provide *in situ* parameters representing a smaller portion of the aquifer. Permeameter tests are laboratory methods used for the evaluation of discrete samples collected from the aquifer. Permeameter tests require an adequate number of representative field samples, and, inherent sampling and analysis technique limitations must be considered when evaluating results.

### Estimation

Methods of estimating hydraulic conductivity may involve grain size analysis or correlating a field description with a reference range of values. As with laboratory measurements, estimation methods require an adequate number of representative field samples. Use the most conservative value of a range when using estimates. If there is any question that sediments may be permeable enough to comprise a resource aquifer, confirm by conducting test(s).

*Provide hydraulic conductivity values that support the level of investigation based on risk and remediation potential. Be sure to have tests and estimations performed and analyzed by personnel trained and/or experienced in hydrogeologic investigations. Improperly performed or analyzed tests may be returned as incomplete. Attach all supporting information for the determination in the Methodologies appendix:*

\_\_\_\_\_ cm/sec

Indicate the measurement or estimation used:

\_\_\_ Pumping test analysis by \_\_\_\_\_ method(s).

\_\_\_ Slug tests by \_\_\_\_\_ method(s).

\_\_\_ Permeability tests by \_\_\_\_\_ method(s).

\_\_\_ Grain-size distribution approximations by \_\_\_\_\_ method(s).

\_\_\_ \*Reference from \_\_\_\_\_.

\*provide author(s), year published, title, publisher and page(s).

5.2 Indicate the thickness of the aquifer. If the investigation does not provide enough information to determine the aquifer thickness, assume the aquifer is greater than 20 feet thick:

- less than 10 feet
- between 10 and 20 feet
- 20 feet or greater

5.3 Describe in detail the geology underlying the site including confining layers, bedrock formations and the lateral extent of these formations:

The impacted aquifer or the aquifer that is likely to be impacted at the site is considered a resource aquifer if one of the following situations exist:

- The aquifer is a current water supply source.
- The water bearing unit has a hydraulic conductivity greater than  $1 \times 10^{-2}$  cm/sec and a minimum thickness of 10 feet.
- The water bearing unit has a hydraulic conductivity between  $1 \times 10^{-4}$  cm/sec and  $1 \times 10^{-2}$  cm/sec and a minimum thickness of 20 feet.
- The water bearing unit has a hydraulic conductivity less than  $1 \times 10^{-4}$  cm/sec and no other viable source of water supply is available. (*Bedrock may be considered a resource aquifer if it is the only water supply available.*)

5.4 Based on the aquifer characteristics and water supply availability, is the aquifer at the site a resource aquifer? YES NO  
N/A

5.5 If other water supplies are available, explain. **Municipal Water**

5.6 Are there any other reasons the impacted aquifer should not be considered a resource aquifer? **Not applicable**

**Table 5.**

Indicate the water level measured in all of the soil borings. **Not Applicable**

	Soil Boring									
	1	2	3	4	5	6	7	8	9	10
<b>Water level depth, ft</b>										

Notes:

5.7 Is contaminated soil in contact with ground water?      N/A                              YES    NO

If YES or if ground water contamination appears likely then complete tables 6 and 7 below.

**Table 6.**

Indicate the laboratory analytical results for water samples collected from the borings, temporary wells or push probes. **Not Applicable**

Well/Boring Number	Date Analyzed	Depth	Benzene	Toluene	Ethylbenzene	Xylene	GRO	DRO

Notes:

**Table 7.**

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes. Indicate contaminant and report in units of ug/l (ppb). **Not Applicable**

Well/Boring Number	Date Analyzed						

Notes:

5.8 If any non-petroleum compounds were, detected list them below and indicate whether they exceed the Health Risk Limits (HRLs). Also, identify possible sources of these compounds.  
**Not Applicable**

5.9 If contaminated soil is not in contact with ground water, what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit?                              40 - 45 feet

5.10 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e.g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area. **No mottling of soils was observed during lithologic examinations. Groundwater levels in the area are greater than 40 feet below grade.**

5.11 In your judgment, is there a sufficient distance separating the petroleum



contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer to prevent petroleum contamination of the resource aquifer? Please explain in detail. In your explanation consider the data and information of this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product).

YES NO

**Based on the distance separating impacted soil and approximate groundwater levels for the area, the silty material encountered during soil borings, field screening and analytical results of samples, especially from borehole GP-1, and the heavy end hydrocarbon involved, there is minimal risk to groundwater.**

### Additional Ground Water Investigation

Complete **Section 6 and Section 7** only if: 1) a resource aquifer has been impacted at or above Minnesota Department of Health HRLs, 2) a resource aquifer has been impacted below the HRLs, but the levels are likely to reach the HRLs, or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer. Regardless of whether you are submitting a LSI or a full RI, all sections following Section 7 must be completed.

### Section 6. Extent and Magnitude of Ground Water Contamination

**Table 8.**

Monitoring well construction. **Not Applicable**

Well Number	Unique Well Number	Date Installed	Relative Surface Elevation	Riser Height Above Grade	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)

*Notes: (location and elevation of benchmark)*

**Table 9.**

Water table summary. **Not Applicable**

Well Number	Date	Depth of Water from Top of Casing	Product Thickness	Depth of Water Below Grade	Relative Groundwater Elevation

*Notes: (ground water above/below screen, etc.)*

**6.1** Were any deep monitoring wells completed at the site? YES NO

If YES, which are deep wells?

Before a deep well is installed contact the MPCA project hydrologist for guidance on its necessity and placement. A deep monitoring well may be necessary if: 1) Contamination exist more than 10 feet below the water table or 2) the impacted aquifer is a resource aquifer or is hydraulically connected to a resource aquifer presently utilized by a water supply well located within 500 feet of the site.

Provide estimates of the following additional aquifer parameters:

Horizontal Gradient (dh/dl): \_\_\_\_\_  
 Vertical Gradient (dv/dl): \_\_\_\_\_  
 Porosity: \_\_\_\_\_  
 Flow direction: \_\_\_\_\_  
 Hydraulic Conductivity (K) \_\_\_\_\_ m/s  
 Pore velocity \_\_\_\_\_ meters/year

**Table 10.**

All ground water monitoring data should be collected from a minimum of *two quarterly sampling events*.

Indicate the laboratory analytical results for water samples. **Not Applicable**

Well #	Date	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	GRO	DRO

Notes: (e.g., free product, dry well, units etc.)

**Table 11.**

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in water samples. **Not Applicable**

Well Number	Date Analyzed						

Notes: units

6.2 If any non-petroleum compounds were detected list them below and indicate whether they exceed the HRLs. Also, identify possible sources of these compounds. **Not Applicable**

6.3 Is there a clean or nearly clean (below HRLs) downgradient monitoring well located along the longitudinal axis of the contaminant plume? *YES NO*  
 (approximately 20 degrees plus or minus the axis) *N/A*

6.4 Is there a worst case well completed through the source area of the release? *YES NO*

If you have answered *NO* to any of the above three questions, please explain why a well was not completed in the required location.

Remedial Investigation Report Form

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January 1997

6.5 Provide an estimate of the longitudinal length of the dissolved contaminant plume: \_\_\_\_\_ feet

6.6 Describe the extent and magnitude of the ground water contamination:

## Section 7: Evaluation of Natural Attenuation

**Table 12.**

Complete the bio-activity data in the table below. Data should be from two quarterly rounds of sampling. Refer to the fact sheet #3.21, "Assessment of Natural Biodegradation at Petroleum Tank Release Sites," for acceptable methodologies and indicate the chosen method in the Methodologies appendix. **Not Applicable**

Monitoring Well	Temp. °C	pH	Dissolved oxygen (mg/l)	Nitrate (mg/l)	(Fe II) (mg/l)	(H <sub>2</sub> S, HS <sup>-</sup> ) (mg/l)

Notes:

7.1 Discuss the results of the bio-activity evaluation. Specifically, compare the concentrations of the inorganic parameters inside and outside the plume.

7.2 In your judgment, is natural biodegradation occurring at this site? Please *YES NO* Explain.

### Section 8: Well Receptor Information/Assessment

Include in the appendices of this report: 1) A list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department; 2) well logs; and 3) map showing ½ mile radius, 500 foot radius, water supply wells, other potential petroleum sources, and addresses for properties within 500 feet.

**Table 13.**

Complete the following table for all water supply wells located within 500 feet of the edge of the plume and any municipal or industrial wells found within ½ mile.

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from site

Notes:

8.1 Is municipal water available in the area? YES NO

8.2 Were all property owners within 500 feet of the nearest edge of the contaminant plume successfully contacted to determine if water wells are present? If No, please explain. YES NO

8.3 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the edge of the plume as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens is not considered a separate aquifer.) **Nearby apartments and businesses are connected to municipal water supply, no shared private wells. The County Well Index was not searched due to the absence of detectable hydrocarbon concentrations from soil samples collected from the site.**

8.4 Are there any plans for ground water development in the impacted aquifer within 1/2 mile of the site, or one mile down gradient of the site if the aquifer is fractured? Please give the name, title and telephone number of the person that was contacted for this information. YES NO  
N/A

Telephone \_\_\_\_\_



### Section 10: Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site ? YES NO

If YES, describe:

10.2 Is there any indication that free product or highly contaminated ground water may be traveling offsite within the utility corridors? If YES, have they been investigated with borings or push probes? YES NO

10.3 Discuss the potential for vapor migration/accumulation near the site. In your discussion consider: Soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers and location of nearby basements. **Vapor migration, as a result of heavy hydrocarbons detected at the site, would be minimal. The soils encountered during tank removal and soil boring activities, was a fine grained, silty sand. Hydrocarbon impacted soil was detected beneath the 1000-gallon heating oil tank at an approximate depth of six feet below grade. Having the combination of heavy end hydrocarbons and silty soils, will result in minimal volatilization and movement of the hydrocarbons through the surrounding soil. Soil boring GP-1, located adjacent to the former heating oil UST, confirms the lack of vertical and horizontal movement and lack of volatilization (see Tables 2 and 3).**

If the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities, complete the following table with vapor monitoring data collected. Location numbers should be mapped on an accompanying figure of the surveyed area. **Not Applicable**

Table 14.

Location #	Date	PID reading (ppm)	Percent of the LEL

Notes:

10.4 Describe and interpret the results of the vapor survey.  
**Thirteen nearby commercial businesses, besides the site buildings, were checked for petroleum vapors. No readings above background were detected at any of the businesses.**



## Section 11: Discussion

### 11.1 Discuss the risks associated with the remaining soil contamination?

**The small amount of hydrocarbon material remaining in the soil, beneath the former 1000-gallon heating oil UST, has been shown by soil boring GP-1 to be immobile and relatively non-volatile.**

**At six feet below grade, the hydrocarbon material should readily biodegrade. Due to the distance of separation between impacted soil and the approximate groundwater level, it is very unlikely that any remaining impacted soil will pose a risk to groundwater.**

### 11.2 Discuss the risks associated with the impacted ground water?

**Groundwater was not encountered in any of the boreholes. The deepest advanced soil probe on-site was 20 feet below grade prior to refusal. Based on soil vapor monitoring and soil sample analytical results (both were unable to detect the presence of hydrocarbons) there is minimal risk of hydrocarbon impact to initial groundwater in the vicinity of the 1000-gallon heating oil UST.**

### 11.3 Discuss other concerns not mentioned above:

**None**

## Section 12: Conclusions and Recommendations

Recommendation for site:             site closure  
    additional vapor monitoring  
    additional ground water monitoring  
    active cleanup

The recommendation above should be based on fact sheet #3.1, "Leaking Underground Storage Tank Investigation and Cleanup Policy." Describe below how you applied the policy to support your recommendation. **Petroleum vapors were not detected in any borehole. Soil sample analytical results did not detect measurable concentrations of petroleum hydrocarbons in any of the soil samples collected.**

If additional monitoring is recommended, indicate the proposed monitoring schedule and frequency:

If active cleanup is proposed, then MPCA staff will review this RI report at a higher than normal priority to determine if active cleanup is required. We will respond with either a request for proposal for additional monitoring or a Corrective Action Design report. Please indicate below what cleanup technology you are considering at this time.

## Section 13: Required Figures

Indicate attached figures:

- Figure 1, 1a:** Site location map (*approximate scale is not acceptable*) and a large scale site map show all potential receptors within 300 feet of the site. The large scale site map should show those properties with basements and wells.
- Figure 2, 2a, 2b, etc.:** Site maps showing: structures; all past and present petroleum storage tanks, piping, and dispensers; extent of soil excavation; boring and well locations (including any drinking water wells on site); horizontal extent of soil contamination; horizontal extent of ground water contamination; and location of end points for all geologic cross sections.
- Figure 3, 3a:** Ground water gradient contour maps (for sites with monitoring wells).
- Figure 4** Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination.
- Figure 5:** Vapor survey map showing utilities and buildings with basements and monitoring locations (if a survey was required).
- Figure 6:** Geologic cross sections.

## Section 14: Appendices

Indicate attached appendices.

- |            |                   |   |
|------------|-------------------|---|
| <u>X</u>   | <i>Appendix A</i> | Excavation Report Worksheet for Petroleum Release Sites.  |
| <u>X</u>   | <i>Appendix B</i> | Laboratory Analytical Reports for Soil and Ground Water.  |
| <u>X</u>   | <i>Appendix C</i> | Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Well Installation, and Water Sampling. |
| <u>X</u>   | <i>Appendix D</i> | Geologic Logs for Each Well or Boring, Including Well As-Built on Log.  |
| <u>N/A</u> | <i>Appendix E</i> | Well Construction Diagrams and Copies of the Minnesota Department of Health Well Record.  |
| <u>N/A</u> | <i>Appendix F</i> | Copies of Water Supply Well Logs With Legible Unique Numbers.   |
| <u>N/A</u> | <i>Appendix G</i> | A List of Addresses Within 500 Feet From the Edge of the Plume and Confirmation of Status of Water Supply From the City Utility Billing department.       |

**Section 15: Consultant (or other) Information**

*By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leaksite. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leaksite that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (1994) or Minn. Rules 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.*

Name and Title:

Signature:

Date signed:

Dave Anderson, Geologist

[Signature]

2/15/00

Tim Modjeski, P.M.

[Signature]

2/15/00

\_\_\_\_\_

\_\_\_\_\_

  /  /  

\_\_\_\_\_

\_\_\_\_\_

  /  /  

Company and mailing address:

Northern Environmental

112 Seventh Street NE

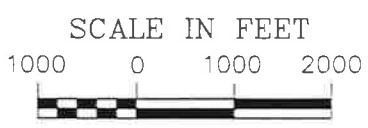
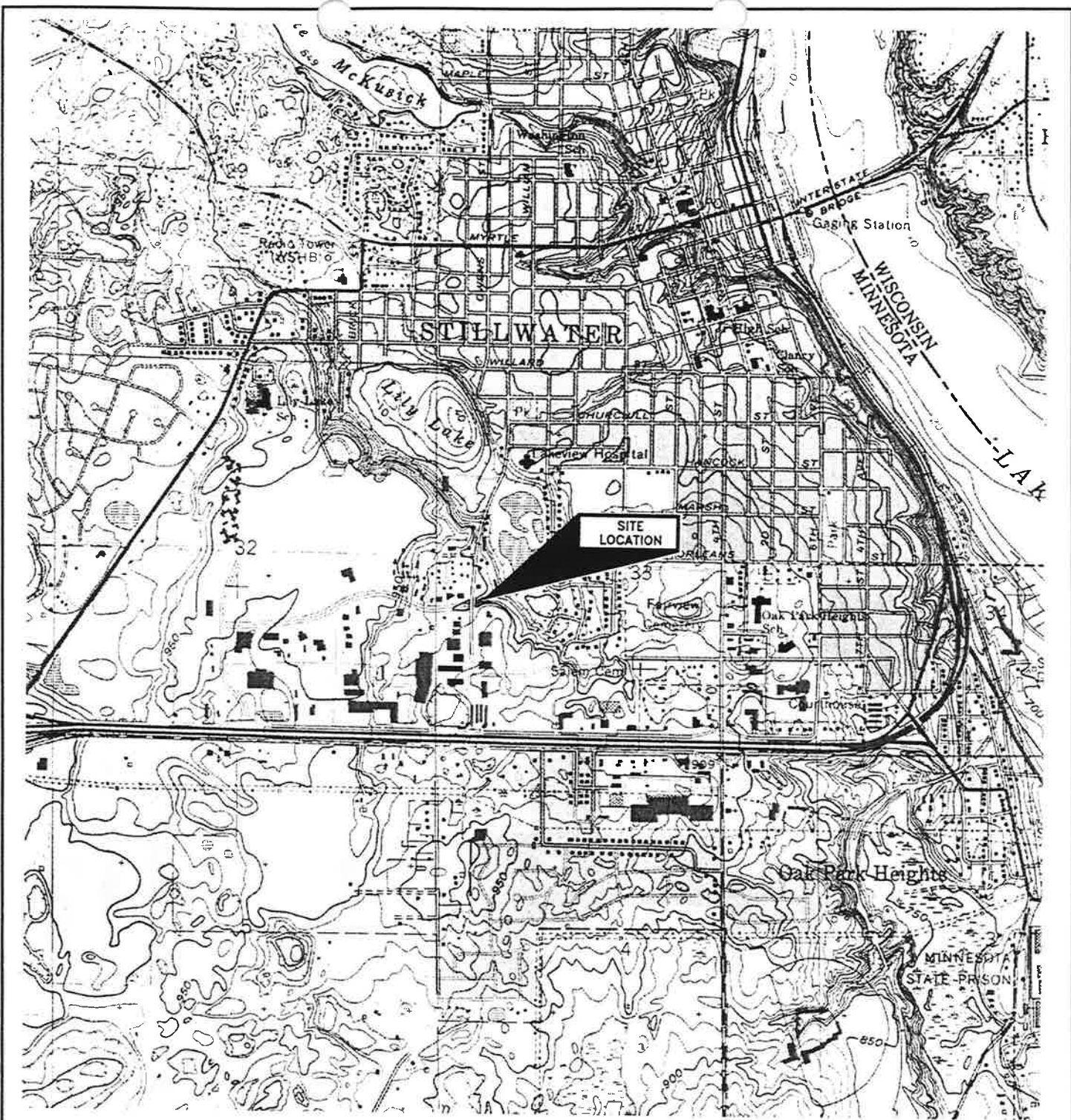
Rochester, MN 55906

Phone: (507) 282-3800

Fax: (507) 282-3100

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BASE MAP SOURCE: USGS 7.5' QUADRANGLE (STILLWATER, MINNESOTA)

DRAWN BY: MTJ | PROJ: COC09-1108-0007 | DATE: 02/18/00

REV. DATE | THIS DRAWING AND ALL INFORMATION CONTAINED THEREON IS THE PROPERTY OF NORTHERN ENVIRONMENTAL INCORPORATED AND SHALL NOT BE COPIED OR USED EXCEPT FOR THE PURPOSE FOR WHICH IT IS EXPRESSLY FURNISHED.

**▲ Northern Environmental™**  
Hydrologists • Engineers • Geologists

CROIX OIL COMPANY  
STILLWATER, MINNESOTA

SITE  
LOCATION

<b>Northern Environmental</b> <sup>SM</sup> Hydrologists • Engineers • Geologists	Prepared By: <i>DNA</i>	Date: <i>2/</i>	Page:
	Reviewed By:	Date:	
Client: <i>Croix Oil Co.</i>			
Project No. <i>CO-09-1108-0007</i>			

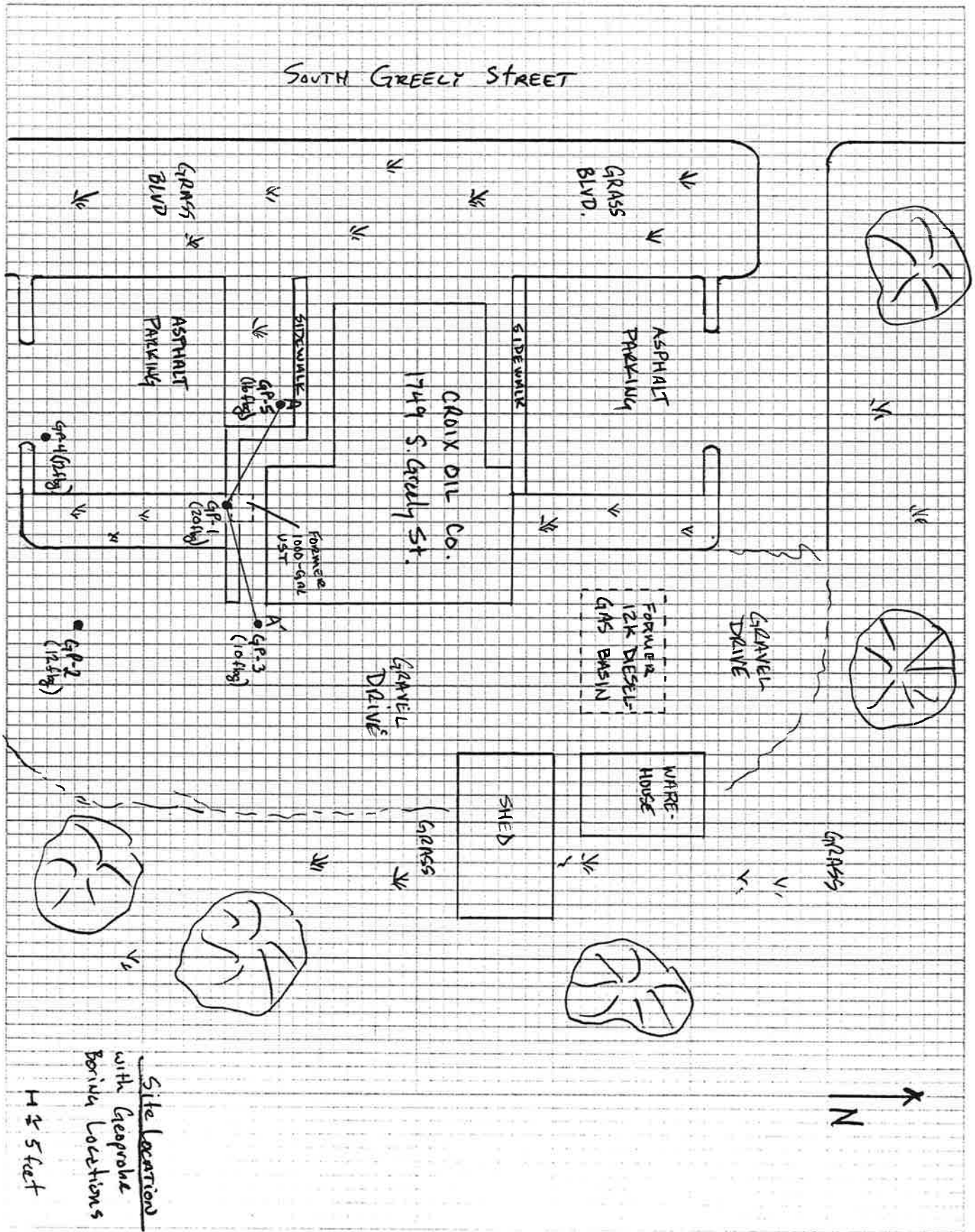
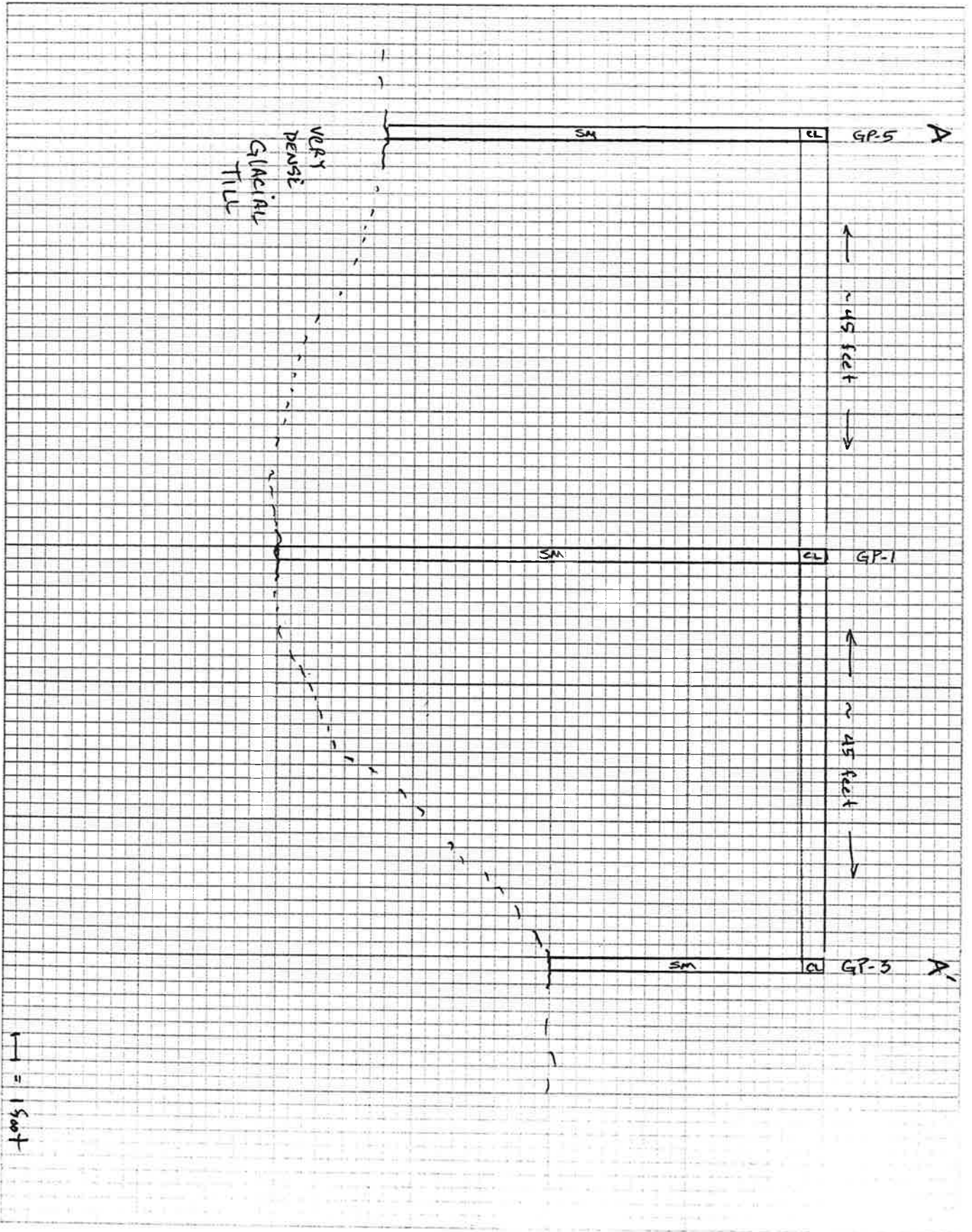


Fig. 2

Client: *CROIX OIL CO.*

Project No. *COC-09-1108-0007*



*fig 10*



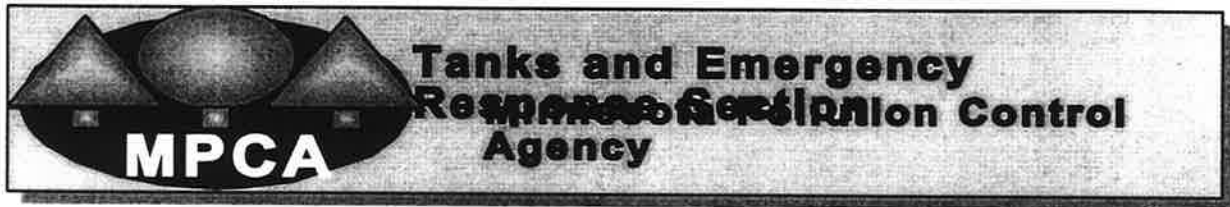
**APPENDIX A**  
**EXCAVATION REPORT WORKSHEET**

**EXCAVATION REPORT**

**CROIX OIL COMPANY  
1749 SOUTH GREELY STREET  
STILLWATER, MN 55932**

**MPCA LEAK # 12308**

**FEBRUARY 9, 2000**



## EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES

Fact Sheet #3.7

April 1997

Complete the information below and submit to the Minnesota Pollution Control Agency (MPCA) Tanks and Emergency Response Section to document excavation and treatment of petroleum contaminated soil. Conduct excavations in accordance with "Excavation of Petroleum Contaminated Soil" (fact sheet #3.6). Please attach any available preliminary site investigation reports to this excavation report.

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

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

### PART I: BACKGROUND

A. Site: **Croix Oil Co.**  
Street: **1749 South Greely Street**  
City, Zip: **Stillwater, 55082**  
County: **Washington**

B. Owner/Operator: **Croix Oil Co.**  
Mailing Address:  
Street/Box: **P.O. Box 15**  
City, Zip: **Stillwater, 55082**

C. Excavating Contractor: **Zahl Const.**  
Contact:  
Telephone:  
Tank Contractor Certification #: **45**

D. Consultant: **Northern Environmental**  
Contact: **Tim Modjeski**  
Street/Box: **2222 Hwy. 52 North**  
City, Zip: **Rochester, 55901**  
Telephone: **(507) 282-3800**

- E. Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.):  
**Northern personnel and Zahl Construction personnel**

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.

## PART II: DATES

- A. Date release reported to MPCA: 10/30/99
- B. Dates site work performed (tanks removed, soil excavation, soil borings, etc.):

Work Performed	Date
<u>Removed two 12K diesel USTs, and one 12K gasoline UST</u>	<u>10/28/99</u>
<u>Removed one 1000-gallon heating oil UST</u>	<u>10/30/99</u>

## PART III: SITE AND RELEASE INFORMATION

- A. Describe the land use and pertinent geographic features within 1,000 feet of the site.  
(i.e. residential property, industrial, wetlands, etc.)

**The site was a bulk petroleum facility, located on relatively level topography in the southwest section of Stillwater. The site is within a scattered, light industrial, commercial and residential area, approximately ¼ mile north of Highway 36 and approximately 1.4 miles west of Highway 95. The main residential areas of the city are approximately 0.4 miles north and east of the site. The Saint Croix River and associated river valley cliffs are over a mile away to the northeast. Lily Lake is approximately 2200 feet to the north of the site and an unnamed pond (locally known as Brick Pond) is approximately 1000 feet to the north-northeast. Within the immediate vicinity of the site, there is a strip mall and a retail gas station.**

**Table 1.**

B. Provide the following information for all tanks at the site at the time of the release:

Tank #	UST or AST	Capacity (gal)	Contents	Age	Status*	Condition
1	UST	12 K	Diesel	9 yrs.	Removed 10/28/99	Excellent, no corrosion or pitting
2	UST	12 K	Diesel	9 yrs.	Removed 10/28/99	Excellent, no corrosion or pitting
3	UST	12 K	Gasoline	9 yrs.	Removed 10/28/99	Excellent, no corrosion or pitting
4	UST	1000	Heating Oil	unknown	Removed 10/30/99	Good, some pitting, not substantial

\*Indicate: *removed (date), abandoned in place (date), or currently used*

C. Describe the status of the other components of the tank system(s), (i.e., piping and dispensers) for those tanks listed above. **Dispensers and piping for the 12K USTs appeared to be in good condition and the fill ports did not show any evidence of overfilling. The heating oil tank fill port and piping also appeared to be in good condition.**

D. Identify and describe the source or suspected source(s) of the release and how the release was discovered. **The most likely cause of release from the 1000-gallon heating oil UST would have been from leaks at the tank/piping connection and/or periodic overfilling of the tank.**

E. What was the volume of the release? (if known): Unknown gallons

F. When did the release occur? (if known): Unknown

G. Describe source of on-site drinking water. Municipal Well

**PART IV: EXCAVATION INFORMATION**

A. Dimensions of UST excavations:

3 x12K tank basin: Length 30 feet Width 40 feet Depth 12 feet

1000-gallon tank basin: Length 10 feet Width 8 feet Depth 6 feet

- B. Original tank backfill material (sand, gravel, etc.): **Medium to coarse grained sand**
- C. Native soil type (clay, sand, etc.): **fine grained, silty sand**
- D. Quantity of contaminated soil removed for treatment (cubic yards): **N/A**

---

Note: If more than 150 cubic yards removed, please attach copy of written approval from MPCA.]

- E. Were new tanks installed at the site? (**yes/no**) If yes, how much soil was excavated to accommodate the installation of the new tanks?
- F. Was ground water encountered or a suspected perched water layer or was there evidence of a seasonally high ground water table (i.e. mottling)? (**yes/no**) At what depth?
- G. If ground water was not encountered during the excavation, what is the expected depth of ground water? **> 40 feet below grade.**
- H. If a soil boring was required (Additional investigation is required at sites that have visual or other evidence of contamination remaining in the suspected source area, with sandy or silty sand soil [Unified Soil Classification System/American Society for Testing Materials] and where the water table is within 25 feet of the ground surface. See fact sheet #3.6 "Excavation of Petroleum Contaminated Soil," Part VI Additional Investigation.) describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report. **A Limited Site Investigation will be performed in the area surrounding the former heating oil tank basin. See LSI report.**
- I. If no soil boring was required, explain: **N/A**
- J. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (**yes/no**) Describe this evidence of contamination, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc. **N/A**  
[NOTE: If free product was observed, contact MPCA staff immediately as outlined in fact sheet #3.3 "Free Product: Evaluation and Recovery"].
- K. Was bedrock encountered in the excavation? (**yes/no**) At what depth?
- L. Were other unique conditions associated with this site? (**yes/no**) If so, explain.

**PART V: SAMPLING INFORMATION**

- A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil: **Soil was considered impacted if headspace screening results of soil samples yielded organic vapors greater than 10 ppm above background readings, as indicated on a photoionization detector (PID). The PID was calibrated to a 250 ppm isobutylene gas standard prior to field screening and was equipped with a 11.7 eV lamp.**
- B. List all soil vapor headspace analysis results. Indicate all sampling locations using sample codes (with sampling depths in parentheses), e.g. R-1 (2 feet), R-2 (10 feet), etc. "R" stands for "removed." Samples collected at different depths at the same location should be labeled R-1A (2 feet), R-1B (4 feet), R-1C (6 feet), etc. If the sample was collected from the sidewall or bottom after excavation was complete, label it S-1 (for sidewall) or B-1 (for "bottom").

**Table 2.**

<b>Sample Number</b>	<b>Soil Type</b>	<b>Headspace Reading</b>
<b>12K Diesel/Gasoline UST Basin</b>		
S-1 (12)	Fine, silty sand	<1 ppm
S-2 (12)	Fine, silty sand	<1 ppm
S-3 (12)	Fine, silty sand	<1 ppm
S-4 (12)	Fine, silty sand	<1 ppm
S-5 (12)	Fine, silty sand	<1 ppm
S-6 (12)	Fine, silty sand	<1 ppm
S-7 (12)	Fine, silty sand	<1 ppm
S-8 (12)	Fine, silty sand	<1 ppm
S-9 (12)	Fine, silty sand	<1 ppm
S-10 (12)	Fine, silty sand	<1 ppm
B-1 (14)	Fine, silty sand	<1 ppm
B-2 (14)	Fine, silty sand	<1 ppm
B-3 (14)	Fine, silty sand	<1 ppm
B-4 (14)	Fine, silty sand	<1 ppm
B-5 (14)	Fine, silty sand	<1 ppm
B-6 (14)	Fine, silty sand	<1 ppm
<b>1K Heating Oil UST Basin</b>		
B1 (6)	Fine, silty sand	<1 ppm

C. Was removed soil placed back into the excavation basin? (**YES/NO**)

If no, please complete Part VIII: Soil Treatment Information section. If yes, a Limited Site Investigation is necessary (see fact sheet #3.19, Soil and Ground Water Investigations Performed During Remedial Investigations).

## D. Briefly describe the soil analytical sampling and handling procedures used:

**Soil samples for headspace readings and laboratory analysis were collected from the backhoe bucket using a clean trowel. Headspace soil samples were placed into zip-loc bags and allowed to volatilize prior to PID reading. Their concentration and location was noted in the project log-book. For each analytical sample, 25 grams of soil was weighed and placed into a 50 ml. wide mouth sample jar. For gasoline range organics analysis, 25 ml. of methanol was added to the sample jars.**

**Analytical samples were labeled with project specific information, given unique sample numbers and placed into an insulated chest, with ice, pending transport to the analytical laboratory. The samples were stored, transported and delivered under standard chain of custody protocol.**

E. List all soil sample analytical results from bottom and side-wall samples (i.e., soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: side-wall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), stockpile samples SP-1, etc. Be sure the sample codes correspond to the site map required in part VI. Do not include analyses from the stockpiled soil. **Results presented in mg/kg (parts per million).**

Sample Number	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO
12K Diesel and Gasoline UST Basin						
B-1 (14)	<0.2	<0.2	<0.2	<0.2	NA <sup>1</sup>	<2
B-2 (14)	<0.2	<0.2	<0.2	<0.2	NA	<2
B-3 (14)	<0.2	<0.2	<0.2	<0.2	NA	<2
B-4 (14)	<0.2	<0.2	<0.2	<0.2	NA	4 <sup>2</sup>
B-5 (14)	<0.2	<0.2	<0.2	<0.2	<1.0	NA
B-6 (14)	<0.2	<0.2	<0.2	<0.2	<1.0	NA
1000-gallon Heating Oil UST Basin						
B1 (6)	<0.2	<0.2	<0.2	<0.2	NA	460

1: Not Analyzed, 2: Result is below practical quantification limit (PQL)

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



## PART 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 and depth of excavation;
  - e. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), and any soil borings (e.g., SB-1). Also, attach all boring logs.
  - f. North arrow, bar scale and map legend.
  - g. Provide location of any on-site water wells. If on-site water wells exist, please provide well logs and/or construction diagrams.

## PART VII: SUMMARY

Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in parts VI and VII of "Excavation of Petroleum Contaminated Soil" (fact sheet #3.6). If no further action is recommended, the MPCA staff will review this report following notification of soil treatment. **Based on field screening and analytical results for soil samples collected within the diesel and gasoline UST basin, there was no indication of hydrocarbon impact to native soil. However, based on analytical results for the soil sample collected beneath the heating oil UST, there is confirmation of a release from this tank system. Although BTEX constituents were not detected, the remaining concentration of DRO in soil requires further investigation.**

## PART VIII: SOIL TREATMENT INFORMATION

- A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method:       N/A
- B. Location of treatment site/facility:       N/A
- C. Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):  
      N/A
- D. Identify the location of stockpiled contaminated soil:  
      N/A

**PART IX: CONSULTANT (OR OTHER) PREPARING THIS REPORT**

*By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. 115.075 (1994) or Minn. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.*

Name and Title:

Signature:

Date signed:

Dave Anderson, Geologist

[Signature]

2/15/00

Tina Modjeski, P.M.

[Signature]

2/15/00

Company and mailing address:

Northern Environmental  
112 Seventh Street NE  
Rochester, MN 55906  
Phone: (507) 282-3800  
Fax: (507) 282-3100

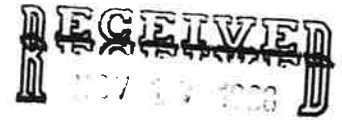
If additional investigation is not required at the site, please mail this form and all necessary attachments to:

(Project Manager)  
Minnesota Pollution Control Agency  
Hazardous Waste Division  
Tanks and Emergency Response Section  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

If additional investigation is required at the site, include this form as an appendix to the Remedial Investigation Report Form. Excavation reports indicating a limited site investigation is necessary will not be reviewed by MPCA staff until the limited site investigation has been completed.

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**LABORATORY ANALYSIS REPORT**

**DATE:** November 13, 1998

**PAGE:**

1 Of 6

**BY:**.....

**CLIENT:** Northern Environmental  
372 West Co Rd. D  
New Brighton, MN 55112

**PROJECT NO.:** 103098-200004  
**COLLECTION DATE:** 10/28/98  
**COLLECTED BY:** Client  
**RECEIVED DATE:** 10/30/98  
**PROJECT DESC:** COC09-1108-0007

**CONTACT:** Tim Modjeski

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L16716-1</u> <u>B-1</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 11/10/98</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	111%
4-Fluorochlorobenzene	PID	88.8%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<b>Date Preserved: 11/06/98</b>				
<b>Date Extracted: 11/06/98</b>				
<b>Date Analyzed: 11/06/98</b>				
Diesel Range Organics	mg/kg	2	10	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	67.7%
n-Triacontane (C-30)	FID	133%

\* means Coeluting Compounds  
 ND means Not Detected or below reported MDL  
 MDL means Method Detection Limit  
 PQL means Practical Quantification Limit  
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT**

**DATE:** November 13, 1998 **PAGE:** 2 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 103098-200004  
 372 West Co Rd. D **COLLECTION DATE:** 10/28/98  
 New Brighton, MN 55112 **COLLECTED BY:** Client  
**CONTACT:** Tim Modjeski **RECEIVED DATE:** 10/30/98  
**PROJECT DESC:** COC09-1108-0007

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>POL</u>	<u>L16716-2</u> <u>B-2</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 11/11/98</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

<b>Surrogate Recovery</b>	<b>Detector</b>	<b>% Recovery</b>
4-Fluorochlorobenzene	FID	99.6%
4-Fluorochlorobenzene	PID	84.3%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>POL</u>	<u>RESULT</u>
<b>DRH</b>				
<b>Date Preserved: 11/06/98</b>				
<b>Date Extracted: 11/09/98</b>				
<b>Date Analyzed: 11/09/98</b>				
Diesel Range Hydrocarbons	mg/kg	2	10	ND

<b>Surrogate Recovery</b>	<b>Detector</b>	<b>% Recovery</b>
n-Nonane (C-9)	FID	65.9%
n-Triacontane (C-30)	FID	124%

\* means Coeluting Compounds  
 ND means Not Detected or below reported MDL  
 MDL means Method Detection Limit  
 PQL means Practical Quantification Limit  
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)



**LABORATORY ANALYSIS REPORT**

**DATE:** November 13, 1998 **PAGE:** 4 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 103098-200004  
 372 West Co Rd. D **COLLECTION DATE:** 10/28/98  
 New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 10/30/98  
**CONTACT:** Tim Modjeski **PROJECT DESC:** COC09-1108-0007

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L16716-4</u> <u>B-4</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 11/10/98</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	116%
4-Fluorochlorobenzene	PID	97.3%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<b>Date Preserved: 11/06/98</b>				
<b>Date Extracted: 11/09/98</b>				
<b>Date Analyzed: 11/10/98</b>				
Diesel Range Organics	mg/kg	2	10	(r)4

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
n-Nonane (C-9)	FID	72.9%
n-Triacontane (C-30)	FID	135%

(r) Result is above MDL, but below PQL.  
 \* means Coeluting Compounds  
 ND means Not Detected or below reported MDL  
 MDL means Method Detection Limit  
 PQL means Practical Quantification Limit  
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT**

**DATE:** November 13, 1998 **PAGE:** 5 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 103098-200004  
372 West Co Rd. D **COLLECTION DATE:** 10/28/98  
New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 10/30/98  
**CONTACT:** Tim Modjeski **PROJECT DESCP:** COC09-1108-0007

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
EPA 8020/WIS DNR GRO				
Date Analyzed: 11/09/98				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
Gasoline Range Organics	mg/kg	1.0	2.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
4-Fluorochlorobenzene	FID	114%
4-Fluorochlorobenzene	PID	97.3%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>RESULT</u>	<u>ANALYSIS DATE</u>
Lead (6010B)	mg/kg	5.0	8.1	11/13/98

\* means Coeluting Compounds  
ND means Not Detected or below reported MDL  
MDL means Method Detection Limit  
PQL means Practical Quantification Limit  
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)





# CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS



- 1214 W. Venture Ct.  
Mequon, WI 53092  
414-241-3133  
FAX 414-241-9222
- 372 West County Road D  
New Brighton, MN 55112  
612-635-9100  
FAX 612-635-0643
- 954 Circle Drive  
Green Bay, WI 54304  
414-592-8400  
FAX 414-592-8444
- 330 South 4th Avenue  
Park Falls, WI 54552  
715-762-1544  
FAX 715-762-1844
- 1203 Storbeck Drive  
Waupun, WI 53963  
414-324-8600  
FAX 414-324-3023
- 217 S. 7th Street Suite 208  
Brainerd, MN 56401  
218-825-9001  
FAX 218-825-9002

Check office originating request

Project No: <b>COC-09-1108-007</b> Task No: _____		Laboratory: <b>Spectrium</b>						
Project Location: <b>STILLWATER, MN</b>		Wisconsin DNR Certification #: _____						
Project Manager: <b>TIM MODJESKI</b>		Laboratory Contact: <b>Tom Halvorsen</b>						
Sampler: <b>TIM MODJESKI</b>		Price Quote: <b>Annual Bid</b>						
Sampler: <b>Tom Modjeski</b>		<b>TURNAROUND TIME REQUIRED</b>						
Sampling Date(s): <b>10/28/98</b>		<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush						
Reports to be Sent to: <b>Dan Barnett</b>		Date Needed: _____						
Lab ID No.	Sample No.	Collection Date		No. of Containers, Size & Type	Description		Preservative	
		Date	Time		Water	Soil		Other
1671a-1	B-1	10/28/98	11:45	2		✓		
2	B-2	10/28/98	12:00	2		✓		
3	B-3	10/28/98	1:45	2		✓		
4	B-4	10/28/98	1:55	2		✓		
5	B-5	10/28/98	3:15	2		✓		
6	B-6	10/28/98	3:30	2		✓		

**ANALYSES REQUESTED**

<input checked="" type="checkbox"/> DRO (WI Modified Method)	<input checked="" type="checkbox"/> DRO (WI Modified Method)	<input checked="" type="checkbox"/> BETX (EPA Method 8020)	<input checked="" type="checkbox"/> PVOC (EPA Method 8020)	<input checked="" type="checkbox"/> VOC (EPA Method 8021)	<input checked="" type="checkbox"/> PAH (EPA Method )	<input checked="" type="checkbox"/> Pb (EPA Method )
--	--	--	--	---	---	--

*Halvorsen*

---

**Packed for Shipping by:**  
*Steve Christensen*

**Shipment Date:**  
**10/30/98**

---

Relinquished By: <i>Tom Modjeski</i>	Relinquished By: <i>Steve Christensen</i>
Company: <b>NETI</b>	Company: <b>NETI</b>
Received By: <i>Steve Christensen</i>	Received By: <i>John Modjeski</i>
Company: <b>NETI</b>	Company: <b>NETI</b>

---

Date: <b>10/29/98</b>	Date: <b>10/30</b>
Time: <b>4:50</b>	Time: <b>11:55</b>
Date: <b>10/29/98</b>	Date: <b>10/30</b>
Time: <b>4:50</b>	Time: <b>11:53</b>





301 West County Road E2 • St. Paul, MN 55112  
(651) 633-0101 • FAX (651) 633-1402

**LABORATORY ANALYSIS REPORT**

<b>DATE:</b>	November 11, 1998	<b>PAGE:</b>	2 Of 2
<b>CLIENT:</b>	Northern Environmental 372 West Co Rd. D New Brighton, MN 55112	<b>PROJECT NO.:</b>	103098-200004
		<b>COLLECTION DATE:</b>	10/30/98
		<b>COLLECTED BY:</b>	Client
		<b>RECEIVED DATE:</b>	10/30/98
<b>CONTACT:</b>	Tim Modjeski	<b>PROJECT DESC:</b>	COC09-1108-0007

*This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on a dry weight basis. The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.*

Report Submitted By,

Thomas L. Halverson  
Laboratory Manager

TLH:wmc  
ne315-6

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**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS**

**LABORATORY ANALYSIS REPORT**

**DATE:** July 27, 1999

**PAGE:** 1 Of 6

**JUL 28 1999**

**CLIENT:** Northern Environmental  
372 West County Road D  
New Brighton, MN 55112

**PROJECT NO.:** 071499-200004  
**COLLECTION DATE:** 7/14/99  
**COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007

**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-1</u> <u>GP-1-20</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 7/20/99</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

**Surrogate Recovery**  
1-chloro-4-Fluorobenzene      **Detector**      **% Recovery**  
PID      100%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<b>Date Preserved: 7/19/99</b>				
<b>Date Extracted: 7/19/99</b>				
<b>Date Analyzed: 7/20/99</b>				
Diesel Range Organics <sup>(L)</sup>	mg/kg	2	10	ND

<sup>(L)</sup>LCS/LCSD recovery was low for DRO.

\* means Coeluting Compounds

ND means Not Detected or below reported MDL

MDL means Method Detection Limit

PQL means Practical Quantification Limit

mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT**

**DATE:** July 27, 1999 **PAGE:** 2 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 071499-200004  
372 West County Road D **COLLECTION DATE:** 7/14/99  
New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007  
**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-2</u> <u>GP-2-12</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 7/20/99</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

**Surrogate Recovery** **Detector** **% Recovery**  
1-chloro-4-Fluorobenzene PID 106%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<b>Date Preserved: 7/19/99</b>				
<b>Date Extracted: 7/19/99</b>				
<b>Date Analyzed: 7/20/99</b>				
Diesel Range Organics <sup>(L)</sup>	mg/kg	2	10	ND

<sup>(L)</sup>LCS/LCSD recovery was low for DRO.  
\* means Coeluting Compounds  
ND means Not Detected or below reported MDL  
MDL means Method Detection Limit  
PQL means Practical Quantification Limit  
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)



**LABORATORY ANALYSIS REPORT**

**DATE:** July 27, 1999 **PAGE:** 3 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 071499-200004  
372 West County Road D **COLLECTION DATE:** 7/14/99  
New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007  
**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-3</u> <u>GP-3-10</u> <u>RESULT</u>
<b>EPA 8020</b>				
<i>Date Analyzed: 7/20/99</i>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

**Surrogate Recovery** **Detector** **% Recovery**  
1-chloro-4-Fluorobenzene PID 103%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<i>Date Preserved: 7/19/99</i>				
<i>Date Extracted: 7/19/99</i>				
<i>Date Analyzed: 7/20/99</i>				
Diesel Range Organics <sup>(L)</sup>	mg/kg	2	10	ND

<sup>(L)</sup>LCS/LCSD recovery was low for DRO.  
\* means Coeluting Compounds  
ND means Not Detected or below reported MDL  
MDL means Method Detection Limit  
PQL means Practical Quantification Limit  
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT**

**DATE:** July 27, 1999 **PAGE:** 4 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 071499-200004  
372 West County Road D **COLLECTION DATE:** 7/14/99  
New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007

**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-4</u> <u>GP-4-12</u> <u>RESULT</u>
EPA 8020				
Date Analyzed: 7/20/99				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

<u>Surrogate Recovery</u>	<u>Detector</u>	<u>% Recovery</u>
1-chloro-4-Fluorobenzene	PID	89.2%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
WIS DNR DRO				
Date Preserved: 7/19/99				
Date Extracted: 7/19/99				
Date Analyzed: 7/20/99				
Diesel Range Organics <sup>(L)</sup>	mg/kg	2	10	ND

<sup>(L)</sup>LCS/LCSD recovery was low for DRO.

\* means Coeluting Compounds

ND means Not Detected or below reported MDL

MDL means Method Detection Limit

PQL means Practical Quantification Limit

mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT**

**DATE:** July 27, 1999 **PAGE:** 5 Of 6  
**CLIENT:** Northern Environmental **PROJECT NO.:** 071499-200004  
 372 West County Road D **COLLECTION DATE:** 7/14/99  
 New Brighton, MN 55112 **COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007  
**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-5</u> <u>GP-5-16</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 7/20/99</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND

**Surrogate Recovery** **Detector** **% Recovery**  
 1-chloro-4-Fluorobenzene PID 110%

<u>ANALYSIS</u>	<u>UNITS</u>	<u>MDL</u>	<u>PQL</u>	<u>RESULT</u>
<b>WIS DNR DRO</b>				
<b>Date Preserved: 7/19/99</b>				
<b>Date Extracted: 7/19/99</b>				
<b>Date Analyzed: 7/20/99</b>				
Diesel Range Organics <sup>(L)</sup>	mg/kg	2	10	ND

<sup>(L)</sup>LCS/LCSD recovery was low for DRO.  
 \* means Coeluting Compounds  
 ND means Not Detected or below reported MDL  
 MDL means Method Detection Limit  
 PQL means Practical Quantification Limit  
 mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

**LABORATORY ANALYSIS REPORT****DATE:** July 27, 1999**PAGE:**

6 Of 6

**CLIENT:** Northern Environmental  
372 West County Road D  
New Brighton, MN 55112**PROJECT NO.:** 071499-200004  
**COLLECTION DATE:** 7/14/99  
**COLLECTED BY:** Client  
**RECEIVED DATE:** 7/14/99  
**PROJECT DESCRP.:** COC09-1108-0007**CONTACT:** Robert Anderson

<u>ANALYSIS</u>	<u>UNITS</u>	<u>Sample No.:</u> <u>Sample ID.:</u> <u>MDL</u>	<u>PQL</u>	<u>L24356-6</u> <u>Trip Blank</u> <u>RESULT</u>
<b>EPA 8020</b>				
<b>Date Analyzed: 7/20/99</b>				
Benzene	mg/kg	0.2	1.0	ND
Toluene	mg/kg	0.2	1.0	ND
Ethylbenzene	mg/kg	0.2	1.0	ND
m,p-Xylene*	mg/kg	0.3	1.0	ND
o-Xylene	mg/kg	0.2	1.0	ND
<b>Surrogate Recovery</b>	<b>Detector</b>	<b>% Recovery</b>		
1-chloro-4-Fluorobenzene	PID	108%		

\* means Coeluting Compounds

ND means Not Detected or below reported MDL

MDL means Method Detection Limit

PQL means Practical Quantification Limit

mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on a dry weight basis. The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,



Gerard Herro  
Laboratory Manager

TLH:wmc  
ne208-1

# CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS



- 1214 W. Venture Ct.  
 Mequon, WI 53092  
 414-241-3133  
 FAX 414-241-8222
- 372 West County Road D  
 New Brighton, MN 55112  
 651-635-9100  
 FAX 651-635-0643
- 954 Circle Drive  
 Green Bay, WI 54304  
 920-592-8400  
 FAX 920-592-8444
- 330 South 4th Avenue  
 Park Falls, WI 54552  
 715-762-1544  
 FAX 715-762-1844
- 1203 Storbeck Drive  
 Waupun, WI 53983  
 920-324-8600  
 FAX 920-324-3023
- 217 S. 7th Street Suite 208  
 Brainerd, MN 56401  
 218-825-9001  
 FAX 218-825-9002

Check office originating request

<b>Project No:</b> 09-1108-0007 <b>Task No:</b> <b>Project Location:</b> STILLWATER, MN <b>Project Manager:</b> Tim Modjeski <b>Sampler:</b> Andrew Grealy <b>Sampler:</b> Robert Anderson <b>Sampling Date:</b> 7/14/99 <b>Reports to be Sent to:</b> Robert Anderson		<b>Laboratory:</b> SPECTRUM <b>Wisconsin DNR Certification #:</b> <b>Laboratory Contact:</b> T. HANESON <b>Price Quote:</b> ANNUAL BID. <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush <b>Date Needed:</b> 8-3-99 <b>TURNAROUND TIME REQUIRED</b>		Sample Integrity - To be completed by receiving lab Seal intact upon receipt <input type="checkbox"/> yes <input type="checkbox"/> no Method of shipment <input type="checkbox"/> °C Refrigerator No. Contents Temperature	
<b>Lab ID No.</b> 2356-1 <b>Sample No.</b> GP-1-20 <b>Collection Date</b> 7/14 <b>Time</b> 10:34 <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	
<b>Lab ID No.</b> 2356-2 <b>Sample No.</b> GP-2-12 <b>Collection Date</b> 7/14 <b>Time</b> 11:00 <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	
<b>Lab ID No.</b> 2356-3 <b>Sample No.</b> GP-3-10 <b>Collection Date</b> 7/14 <b>Time</b> 11:20 <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	
<b>Lab ID No.</b> 2356-4 <b>Sample No.</b> GP-4-12 <b>Collection Date</b> 7/14 <b>Time</b> 11:40 <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	
<b>Lab ID No.</b> 2356-5 <b>Sample No.</b> GP-5-16 <b>Collection Date</b> 7/17 <b>Time</b> 12:05 <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	
<b>Lab ID No.</b> 2356-6 <b>Sample No.</b> TRIP <b>Collection Date</b> - <b>Time</b> - <b>No. of Containers, Size &amp; Type</b> 3x60mL		<b>Water</b> <input checked="" type="checkbox"/> <b>Soil</b> <input type="checkbox"/> <b>Other</b> <input type="checkbox"/> <b>Description</b> MEOH		<b>DRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>GRO (WI Modified Method)</b> <input checked="" type="checkbox"/> <b>BETX (EPA Method 8020)</b> <input checked="" type="checkbox"/> <b>PVOC (EPA Method 8020)</b> <input type="checkbox"/> <b>VOC (EPA Method 8021)</b> <input type="checkbox"/> <b>PAH (EPA Method )</b> <input type="checkbox"/> <b>Pb (EPA Method )</b> <input type="checkbox"/>	

**Comments:**

Packed for Shipping by: Robert Anderson  
 Shipment Date: 7/14/99

Relinquished By: Robert Anderson Company: NEVI	Relinquished By: Company: Received By: Robert Anderson Company: spectrum	Date: 7/14/99 Time: 15:10	Date: 7/14/99 Time: 3:10p
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**APPENDIX C**  
**METHODS AND PROCEDURES**

## Methods and Procedures

**Soil Sampling:** Soil samples are collected in accordance with the Minnesota Pollution Control Agency (MPCA), April 1996, Tanks and Emergency Response Section Fact Sheet # 3.22 entitled *Soil Sample Collection and Analysis Procedures*.

Soil samples are collected at approximate five foot intervals (two foot intervals if organic vapors are detected) for field screening, lithological examination and for potential laboratory analysis. Soil samples are also collected within the capillary fringe above the water table (if encountered). For each analytical sample, 25 grams of soil was weighed and placed into a 50 ml. wide mouth sample jar for Diesel Range Organics analysis, or 25 ml. of methanol was added for Gasoline Range Organics analysis.

**Field Screening of Soils:** Field screening of soil samples is accomplished using a photoionization detector (PID) calibrated to 250 parts per million (ppm) isobutylene gas standard and equipped with a 11.7 eV. lamp. Soil samples are placed in zip-loc bags and allowed to volatilize. The PID probe is placed into the bag and a head-space reading is collected. Readings are written on the boring log with associated depths and soil descriptions.

**Groundwater Monitoring and Sampling:** Groundwater samples are collected in accordance with the MPCA, April 1996, Tanks and Emergency Response Section Fact Sheet # 3.23 entitled *Groundwater Sample Collection and Analysis Procedures*.

The depth to water is measured in each monitoring well prior to any other activity. An electronic water level indicator is used to determine depth to water and is read from the top of the well casing at a designated reference point. A new disposable bailer is then lowered into the well to check for free product.

A minimum of five casing volumes of water is purged from the wells using a disposable bailer. The groundwater parameters: pH, temperature, electrical conductivity and dissolved oxygen are monitored until readings stabilize, insuring fresh formation water had entered the well.

Groundwater is collected using a disposable bailer and transferred into appropriate sample bottles. Samples for GRO, BTEX and volatile compounds are collected first, followed by DRO samples and then inorganic bio-degradation parameters

**Sample Handling, Storage and Transport:** Analytical samples are labeled with project specific information, given unique sample numbers and placed into an insulated chest with ice pending transport to the laboratory. The samples are stored, transported and delivered under standard chain of custody protocol to a Petrofund certified laboratory.

**APPENDIX D**  
**GEOLOGIC LOGS**



## VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <i>COC-09-1108-0007</i>	PROJECT NAME: <i>Croix Oil Company</i>	
BORING NUMBER: <i>GP-1</i>	COORDINATES:	DATE: <i>7/14/99</i>
ELEVATION:	GWL: Depth      Date/Time	DATE STARTED:
ENGINEER/GEOLOGIST: <i>B. Anderson</i>	Depth      Date/Time	DATE COMPLETED:
DRILLING METHODS: <i>Geoprobe</i>	PAGE: <i>1</i>	OF: <i>1</i>

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
				Concrete, baserock			
				Black organic clay	CL		
5				Red-brown, silty sand, (SM) 60% fine grained sand, 40% silt 45% fine gravel. damp.			HN <sub>u</sub> = < 1 ppm
10				Red-brown, silty sand (SM)	SM		HN <sub>u</sub> = < 1 ppm
15				Red-brown, silty sand (SM)			HN <sub>u</sub> = < 1 ppm
20				brown, silty sand (SM)			HN <sub>u</sub> = < 1 ppm
	GP-1-20 Soil			brown, poorly-graded fine grained silty sand (SM) damp, very dense, compact <u>Probe refusal at 20 ft.</u>			HN <sub>u</sub> = < 1 ppm

NOTES:

## VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <i>COE-09-1109-0007</i>		PROJECT NAME: <i>Croix oil Co.</i>	
BORING NUMBER: <i>GP-2</i>		COORDINATES:	DATE: <i>7/14/99</i>
ELEVATION:		GWL: Depth      Date/Time	DATE STARTED:
ENGINEER/GEOLOGIST: <i>Bob Anderson</i>		Depth      Date/Time	DATE COMPLETED:
DRILLING METHODS: <i>Geoprobe</i>			PAGE <i>1</i> OF <i>1</i>

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
5	X			Concrete / base rock	CL		
	X			Black organic clay (cc)			
	X			reddish-brown, poorly graded, fine grained silty sand (SM), damp, med. dense.	SM		HN <sub>4</sub> = 21 ppm
10	X			reddish-brown silty sand (SM) damp, (same)			HN <sub>4</sub> = 21 ppm
15	X			Red-brown, poorly sorted, fine grained sand silty sand (SM) damp, very dense. Probe refusal @ 12 ft.			HN <sub>4</sub> = 21 ppm
	X						

NOTES:



## VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <i>CO-09-1108-0007</i>	PROJECT NAME: <i>Croix Oil Company</i>	
BORING NUMBER: <i>GP-21</i>	COORDINATES:	DATE: <i>8/14/99</i>
ELEVATION:	GWL: Depth      Date/Time	DATE STARTED:
ENGINEER/GEOLOGIST: <i>Bob Anderson</i>	Depth      Date/Time	DATE COMPLETED:
DRILLING METHODS: <i>Geoprobe</i>	PAGE (    OF    )	

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
	X			Concrete / base rock	CL		
	X			Black Organic Clay, lean (CL)	CL		
5	X			Reddish-brown, poorly graded, fine grained sand (SM), damp, dense	SM		HN <sub>u</sub> = < 1 ppm
	X			same			HN <sub>u</sub> = < 1 ppm
10	X			same, (very dense)			HN <sub>u</sub> = < 1 ppm
	X			probe refusal @ $\approx 12' \pm$			
	GP-4-12						

NOTES:

## VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: <i>COC-09-1108-0007</i>	PROJECT NAME: <i>Crux Oil Company</i>	
BORING NUMBER: <i>GP-5</i>	COORDINATES:	DATE: <i>7/14/99</i>
ELEVATION:	GWL: Depth      Date/Time	DATE STARTED:
ENGINEER/GEOLOGIST: <i>Bob Anderson</i>	Depth      Date/Time	DATE COMPLETED:
DRILLING METHODS: <i>Geoprobe</i>		PAGE ( OF )

DEPTH ( )	SAMPLE TYPE & NO.	BLOWS ON SAMPLER PER ( )	RECOVERY ( )	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
				Concrete / base rock			
				Black organic lean clay (CL)	CL		
5				Reddish-brown, poorly graded, fine grained silty sand (SM), damp, dense	SM		HN <sub>4</sub> = < 1 ppm
10				Same			HN <sub>4</sub> = < 1 ppm
15				Same			HN <sub>4</sub> = < 1 ppm
	GP-5-16			Same, very dense Probe refusal @ ~ 16 fgs.			HN <sub>4</sub> = < 1 ppm

NOTES: