US EPA RECORDS CENTER REGION 5
1000079

SECTION A

PART A APPLICATION

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PERMIT SECTION

Contents

SECTION A 1
PART A APPLICATION 1
A.1 Forms and Permits 3
A.1.1 RCRA Permit Application 3
A.1.2 Permits or construction approvals 3
A.2 Certifications 3
A.2.1 Siting Certification; Environmental Protection Act Section 39 (c) & 39.2 3
A.2.2 Facility Certification 3
A.2.3 Technical Information Certification 4
A.3 Public Disclosure Exemption Claims and Trade Secrets 4
A.4 Public Participation 4
A.4.1 Facility Mailing list and repository information 4
A.4.1.1 Facility Mailing List 4
A.4.1.2 Identification of Repositories 4
A.4.1.3 Contents of Repository, Public Notice of Repository Availability 4
A.4.1.4 Documentation of the Public Notices of Repositories 5
A.4.2 Notification of Permit Application Submittal 5
A.4.2.1 Content of Permit Application Notice 5
A.4.2.1 Documentation of Permit Application Notice 5
A.4.3 Pre-Application Meeting 5

LIST OF ATTACHMENTS

ATTACHMENT A-1 PART A APPLICATION

ATTACHMENT A-2 CURRENT MAILING LIST

ATTACHMENT A-3 NOTICE LETTER

ATTACHMENT A-4 PUBLIC NOTICE DOCUMENTATION

SECTION A

This Permit Application is submitted for the facility (Facility) located at 2537 LeMoyne Avenue, Melrose Park, Illinois, 60160. The information in this section is supplied in accordance with 35 IAC Sections 702.121, 702.123, 702.126(a) & (d), and 703.181.

A.1 Forms and Permits

A.1.1 RCRA Permit Application

This site operated as a TSDF under a RCRA Part B permit at this location from 1983 until cessation of operations on October 31, 2012. This Facility accepted and stored only F001 and F002 hazardous waste solvents until the permit renewal in 1996, when select U codes with constituents similar to F001/F002 were added.

In addition to accepting wastes, the site also distributed various halogenated solvents including Trichloroethylene (TCE), Tetrachloroethylene (PCE) 1,1,1-Trichlorethane (TCA), and limited amounts of Freon and Methylene Chloride (MC).

Attachment A-1 provides the completed Part A Application.

A.1.2 Permits or construction approvals

The City of Melrose Park requires issuance of permits related to any environmental work done at the site. This permit will be obtained prior to the implementation of the Corrective Measures Plan (CMP). The site does not have any permits, nor has it applied for any construction permits for any of the following programs: UIC program under SDWA and 704, NPDES program under the CWA and 309, PSD program, and Title 5 permits under the CAA, Nonattainment program under the CAA, NESHAPS pre-construction approval under the CAA, open dumping permits under the MPRSA, dredge or fill permits under Section 404 of the CWA, or any other relevant environmental permits including Illinois permits.

A.2 Certifications

A.2.1 Siting Certification; Environmental Protection Act Section 39 (c) & 39.2

This section is not applicable as no request is being made for a pollution control facility.

A.2.2 Facility Certification

The Part A Application has been signed by the required responsible parties. The owner and operator are the same entity.

A.2.3 Technical Information Certification

Required technical data will be certified (Sealed) by qualified Professional Engineer who is licensed to practice in the state of Illinois. This application does not contain any design drawings or engineering specifications currently requiring certification.

A.3 Public Disclosure Exemption Claims and Trade Secrets

This section is not applicable as no request is being made related to being exempt from public disclosure or related to any trade secret.

A.4 Public Participation

A.4.1 Facility Mailing list and repository information

A.4.1.1 Facility Mailing List

A printed and electronic copy of the current mailing list for the site is located in Attachment A-2

A.4.1.2 Identification of Repositories

The public participation requirements will be complied with, as required under section 39 (d), 703.193, 703.248, & 705.163, by placing a copy of this Corrective Measures Permit application with the government agency for public review:

Melrose Park Public Library
801 Broadway
Melrose Park IL
9:00am – 9:00 pm (M-Th)
9:00am – 6:00 pm (F)
10:00am – 2:00 pm (S)

A.4.1.3 Contents of Repository, Public Notice of Repository Availability

A public notice of the availability to review the application will be made within 30 days of submitting the application. Documentation will be provided to IEPA to substantiate complying with the public notice and the location of the repository. The notification will include, at a minimum, the following pieces of information:

- A statement the application materials have been prepared and are available for community members to review and copy at the repository location.
- The location and business hours of the repository.
- A statement that the applicant will update the repository materials periodically during the Illinois EPA's review of the permit application.

- The name, address and telephone number of the applicant's contact person to address questions regarding the application or to be added to the facility's mailing list for future permit activities.
- A statement regarding who to contact at IEPA for general information on the hazardous waste management permit program.

A.4.1.4 Documentation of the Public Notices of Repositories

Attachment A-2 provides the most recent copy of the facility mailing list.
Appendix A-3 contains a copy of the letter sent to individuals on the facility mailing list, including the date of mailing.
Attachment A-4 is a copy of the notice language published in a paper of general circulation and the publisher's certification stating that it published the notice once per week for three consecutive weeks.

A.4.2 Notification of Permit Application Submittal

A.4.2.1 Content of Permit Application Notice

A copy of the notice is presented in Attachment A-4.

A.4.2.1 Documentation of Permit Application Notice

Within 30 days of submitting the application the letter in Attachment A-3 will be sent to all individuals on the current mailing list in Attachment A-2.

A.4.3 Pre-Application Meeting

This section is not applicable as this application is associated with a Corrective Measures Plan.

ATTACHMENT A-1
PART A APPLICATION

OMB# 2050-0024; Expires 12/31/2014

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.	United States Environmental Protection Agency **RCRA SUBTITLE C SITE IDENTIFICATION FORM**

1. Reason for Submittal MARK ALL BOX(ES) THAT APPLY	**Reason for Submittal:** ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location) ☐ To provide a Subsequent Notification (to update site identification information for this location) ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application ☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____) ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below) ☐ Site was a TSD facility and/or generator of ≥1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)
2. Site EPA ID Number	**EPA ID Number** I L D 0 7 4 4 2 4 9 3 8
3. Site Name	**Name:** Trex Properties, LLC
4. Site Location Information	**Street Address:** 2537 LeMoyne Ave. **City, Town, or Village:** Melrose Park **County:** Cook **State:** Illinois **Country:** USA **Zip Code:** 60160
5. Site Land Type	☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other
6. NAICS Code(s) for the Site (at least 5-digit codes)	N/A A. ____ C. ____ B. ____ D. ____
7. Site Mailing Address	**Street or P.O. Box:** 1650 Des Peres Road, Suite 306 **City, Town, or Village:** St. Louis **State:** Missouri **Country:** USA **Zip Code:** 63131
8. Site Contact Person	**First Name:** Matt **MI:** D **Last:** Robinson **Title:** President **Street or P.O. Box:** 1650 Des Peres Road, Suite 306 **City, Town or Village:** St. Louis **State:** Missouri **Country:** USA **Zip Code:** 63131 **Email:** mrobinson@eltransfer.co. **Phone:** 314.775.0500 **Ext.:** 123 **Fax:** 314.835-1616
9. Legal Owner and Operator of the Site	**A. Name of Site's Legal Owner:** Trex Properties, LLC **Date Became Owner:** 06.19.2013 **Owner Type:** ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other **Street or P.O. Box:** 1650 Des Peres Road, Suite 306 **City, Town, or Village:** St. Louis **Phone:** 314.775.0500 **State:** Missouri **Country:** USA **Zip Code:** 63131 **B. Name of Site's Operator:** Trex Properties, LLC **Date Became Operator:** 06.19.2013 **Operator Type:** ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

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10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-10.

Y [✓] N [ ] **1. Generator of Hazardous Waste**
If "Yes", mark only one of the following – a, b, or c.

[✓] a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo.) or more of hazardous waste; **or** Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste; **or** Generates, in any calendar month, **or** accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.

[ ] b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs./mo) of non-acute hazardous waste.

[ ] c. CESQG: Less than 100 kg/mo (220 lbs./mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities in 2-4.

Y [ ] N [✓] **2. Short-Term Generator** (generate from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.

Y [ ] N [✓] **3. United States Importer of Hazardous Waste**

Y [ ] N [✓] **4. Mixed Waste (hazardous and radioactive) Generator**

Y [ ] N [✓] **5. Transporter of Hazardous Waste**
If "Yes", mark all that apply.

[ ] a. Transporter

[ ] b. Transfer Facility (at your site)

Y [ ] N [✓] **6. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste Part B permit is required for these activities.

Y [ ] N [✓] **7. Recycler of Hazardous Waste**

Y [ ] N [✓] **8. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark all that apply.

[ ] a. Small Quantity On-site Burner Exemption

[ ] b. Smelting, Melting, and Refining Furnace Exemption

Y [ ] N [✓] **9. Underground Injection Control**

Y [ ] N [✓] **10. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y [ ] N [✓] **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes", mark all that apply.**

a. Batteries [ ]
b. Pesticides [ ]
c. Mercury containing equipment [ ]
d. Lamps [ ]
e. Other (specify) _____ [ ]
f. Other (specify) _____ [ ]
g. Other (specify) _____ [ ]

Y [ ] N [✓] **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y [ ] N [✓] **1. Used Oil Transporter**
If "Yes", mark all that apply.

[ ] a. Transporter

[ ] b. Transfer Facility (at your site)

Y [ ] N [✓] **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark all that apply.

[ ] a. Processor

[ ] b. Re-refiner

Y [ ] N [✓] **3. Off-Specification Used Oil Burner**

Y [ ] N [✓] **4. Used Oil Fuel Marketer**
If "Yes", mark all that apply.

[ ] a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner

[ ] b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

❖ You can **ONLY** Opt into Subpart K if:

- you are at least one of the following: a college or university; a teaching hospital that is owned by or has a formal affiliation agreement with a college or university; or a non-profit research institute that is owned by or has a formal affiliation agreement with a college or university; AND
- you have checked with your State to determine if 40 CFR Part 262 Subpart K is effective in your state

Y☐ N☐ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ a. College or University

☐ b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university

☐ c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

Y☐ N☐ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

F001	D004	D019				
F002	D005	D021				
U080	D006	D027				
U121	D007	D028				
U210	D008	D029				
U226	D009	D030				
U228	D010	D034				
D039	D011	D035				
D040	D018	D038				

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☑ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes", you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

Site ceased handling hazardous wastes as of November 1, 2012. This permit aplication is only related to address corrective actions that are being performed at the site. Waste codes noted in this application are those previously permitted for storage at the site.

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
Tom Roberts	Tom Roberts MANAGER	6-27-13

EPA ID Number | I | L | D | 0 | 7 | 4 | 4 | 2 | 4 | 9 | 3 | 8 | OMB#: 2050-0024; Expires 12/31/2014

ADDENDUM TO THE SITE IDENTIFICATION FORM:
NOTIFICATION OF HAZARDOUS SECONDARY MATERIAL ACTIVITY

ONLY fill out this form if:

- You are located in a State that allows you to manage excluded hazardous secondary material (HSM) under 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent). See http://www.epa.gov/epawaste/hazard/dsw/statespf.htm for a list of eligible states; **AND**
- You are or will be managing excluded HSM in compliance with 40 CFR 261.2(a)(2)(ii), 261.4(a)(23), (24), or (25) (or state equivalent) **or** you have stopped managing excluded HSM in compliance with the exclusion(s) and do not expect to manage any amount of excluded HSM under the exclusion(s) for at least one year. Do not include any information regarding your hazardous waste activities in this section.

1. Indicate reason for notification. Include dates where requested.

☐ Facility will begin managing excluded HSM as of _____ (mm/dd/yyyy).

☐ Facility is still managing excluded HSM/re-notifying as required by March 1 of each even-numbered year.

☐ Facility has stopped managing excluded HSM as of _____ (mm/dd/yyyy) and is notifying as required.

2. Description of excluded HSM activity. Please list the appropriate codes and quantities in **short tons** to describe your excluded HSM activity ONLY (do not include any information regarding your hazardous wastes). Use additional pages if more space is needed.

a. Facility code (answer using codes listed in the Code List section of the instructions)	**b. Waste code(s) for HSM**	**c. Estimated short tons of excluded HSM to be managed annually**	**d. Actual short tons of excluded HSM that was managed during the most recent odd-numbered year**	**e. Land-based unit code** (answer using codes listed in the Code List section of the instructions)

3. Facility has financial assurance pursuant to 40 CFR 261.4(a)(24)(vi). (Financial assurance is required for reclaimers and intermediate facilities managing excluded HSM under 40 CFR 261.4(a)(24) and (25))

Y☐ N☐ Does this facility have financial assurance pursuant to 40 CFR 261.4(a)(24)(vi)?

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EPA ID Number | I | L | D | 0 | 7 | 4 | 4 | 2 | 4 | 9 | 3 | 8 |

OMB#: 2050-0024; Expires 12/31/2014

United States Environmental Protection Agency

HARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact	**First Name:** Matt	**MI:** D	**Last Name:** Robinson
	Contact Title: President		
	Phone: 314.775.0500	**Ext.:** 123	**Email:** drobinson@eltransfer.com
2. Facility Permit Contact Mailing Address	**Street or P.O. Box:** 1650 des Peres Road, Suite 306		
	City, Town, or Village: St. Louis		
	State: Missouri		
	Country: USA	**Zip Code:** 63131	
3. Operator Mailing Address and Telephone Number	**Street or P.O. Box:** 1650 des Peres Road, Suite 306		
	City, Town, or Village: St. Louis		
	State: Missouri	**Phone:** 314.772.0500 ext 123	
	Country: USA	**Zip Code:** 63131	
4. Facility Existence Date	**Facility Existence Date (mm/dd/yyyy):** 09/27/1974		

5. Other Environmental Permits

A. Facility Type *(Enter code)*	B. Permit Number	C. Description
Not Applicable	- - - - - - - - - - - - -	

6. Nature of Business: SITE IS VACANT - no operations are ongoing at the site

7. Process Codes and Design Capacities – Enter information in the Section on Form Page 3

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 8.

B. PROCESS DESIGN CAPACITY – For each code entered in Item 7.A; enter the capacity of the process.

1. AMOUNT – Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
2. UNIT OF MEASURE – For each amount entered in Item 7.B(1), enter the code in Item 7.B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.

C. PROCESS TOTAL NUMBER OF UNITS – Enter the total number of units for each corresponding process code.

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity
	Disposal	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectares-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment	
T01	Tank Treatment	Gallons Per Day; Liters Per Day
T02	Surface Impoundment	Gallons Per Day; Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Metric Tons Per Hour; or Million BTU Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTUs Per Hour; Gallons Per Day; Liters Per Hour; or Million BTU Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; or Million BTU Per Hour

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity (for T81 – T94)
	Treatment (Continued)	
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; Liters Per Hour; Kilograms Per Hour; or Million BTU Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR 260.10	
T94	Containment Building Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTU Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million BTU Per Hour
	Miscellaneous (Subpart X)	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; or Million BTU Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

Unit of Measure	Unit of Measure Code	Unit of Measure	Unit of Measure Code	Unit of Measure	Unit of Measure Code
Gallons	G	Short Tons Per Hour	D	Cubic Yards	Y
Gallons Per Hour	E	Short Tons Per Day	N	Cubic Meters	C
Gallons Per Day	U	Metric Tons Per Hour	W	Acres	B
Liters	L	Metric Tons Per Day	S	Acre-feet	A
Liters Per Hour	H	Pounds Per Hour	J	Hectares	Q
Liters Per Day	V	Kilograms Per Hour	X	Hectare-meter	F
		Million BTU Per Hour	X	BTU Per Hour	I

EPA ID Number | I | L | D | 0 | 7 | 4 | 4 | 2 | 4 | 9 | 3 | 8 |

OMB#: 2050-0024; Expires 12/31/2014

7. Process Codes and Design Capacities (Continued)

EXAMPLE FOR COMPLETING Item 7 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY		C. Process Total Number of Units	For Official Use Only
					(1) Amount (Specify)	(2) Unit of Measure		
X	1	S	0	2	533.788	G	001	
	1	S	O	1	0			
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
1	0							
1	1							
1	2							
1	3							

Note: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the line sequentially, taking into account any lines that will be used for "other" process (i.e., D99, S99, T04, and X99) in Item 8.

8. Other Processes (Follow instructions from Item 7 for D99, S99, T04, and X99 process codes)

Line Number (Enter #s in sequence with Item 7)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY		C. Process Total Number of Units	For Official Use Only
					(1) Amount (Specify)	(2) Unit of Measure		
X	2	T	0	4	100.00	U	001	

9. Description of Hazardous Wastes - Enter Information in the Sections on Form Page 5

A. EPA HAZARDOUS WASTE NUMBER – Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY – For each listed waste entered in Item 9.A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in Item 9.A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE – For each quantity entered in Item 9.B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all listed hazardous wastes.

For non-listed waste: For each characteristic or toxic contaminant entered in Item 9.A, select the code(s) from the list of process codes contained in Items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of Item 9.D(1).
3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 9.E.

2. PROCESS DESCRIPTION: If code is not listed for a process that will be used, describe the process in Item 9.D(2) or in Item 9.E(2).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in Item 9.A. On the same line complete Items 9.B, 9.C, and 9.D by estimating the total annual quantity of the waste and describing all the processes to be used to store, treat, and/or dispose of the waste.
2. In Item 9.A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In Item 9.D.2 on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING Item 9 (shown in line numbers X-1, X-2, X-3, and X-4 below) – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES									
								(1) PROCESS CODES (Enter Code)									(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0				
X	2	D	0	0	2	400	P	T	0	3	D	8	0				
X	3	D	0	0	1	100	P	T	0	3	D	8	0				
X	4	D	0	0	2												Included With Above

9. Description of Hazardous Wastes *(Continued. Use additional sheet(s) as necessary; number pages as 5a, etc.)*

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES									
								(1) PROCESS CODES (Enter Code)									(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
	1	F	0	0	1	0	T	S	0	1							Closure/Corrective Action
	2	F	0	0	2	0	T	S	0	1							Closure/Corrective Action
	3	U	0	8	0		T	S	0	1							Closure/Corrective Action
	4	U	1	2	1		T	S	0	1							Closure/Corrective Action
	5	U	2	1	0		T	S	0	1							Closure/Corrective Action
	6	U	2	2	6		T	S	0	1							Closure/Corrective Action
	7	U	2	2	8		T	S	0	1							Closure/Corrective Action
	8	D	0	3	9	0	T	S	0	1							Closure/Corrective Action
	9	D	0	4	0	0	T	S	0	1							Closure/Corrective Action
1	0	D	0	0	4		T	S	0	1							Closure/Corrective Action
1	1	D	0	0	5		T	S	0	1							Closure/Corrective Action
1	2	D	0	0	6		T	S	0	1							Closure/Corrective Action
1	3	D	0	0	7		T	S	0	1							Closure/Corrective Action
1	4	D	0	0	8		T	S	0	1							Closure/Corrective Action
1	5	D	0	0	9		T	S	0	1							Closure/Corrective Action
1	6	D	0	1	0		T	S	0	1							Closure/Corrective Action
1	7	D	0	1	1		T	S	0	1							Closure/Corrective Action
1	8	0	0	1	8	0	T	S	0	1							Closure/Corrective Action
1	9	D	0	1	9	0	T	S	0	1							Closure/Corrective Action
2	0	D	0	2	1	0	T	S	0	1							Closure/Corrective Action
2	1	D	0	2	7	0	T	S	0	1							Closure/Corrective Action
2	2	D	0	2	8		T	S	0	1							Closure/Corrective Action
2	3	D	0	2	9		T	S	0	1							Closure/Corrective Action
2	4	D	0	3	0	0	T	S	0	1							Closure/Corrective Action
2	5	D	0	3	4	0	T	S	0	1							Closure/Corrective Action
2	6	D	0	3	5	0	T	S	0	1							Closure/Corrective Action
2	7	D	0	3	8	0	T	S	0	1							Closure/Corrective Action
2	8																
2	9																
3	0																
3	1																
3	2																
3	3																
3	4																
3	5																
3	6																

EPA ID Number | I | L | D | 0 | 7 | 4 | 4 | 2 | 4 | 9 | 3 | 8 | OMB#: 2050-0024; Expires 12/31/2014

9. Description of Hazardous Wastes *(Continued. Use additional sheet(s) as necessary; number pages as 5a, etc.)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter Code)	D. PROCESSES (2) PROCESS DESCRIPTION (If code is not entered in 9.D.1)

10. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

11. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

12. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas (see instructions for more detail).

13. Comments

Operations at this site ceased as of November 1, 2012. Current application is associated with the closure of the site, including associated Corrective Actions.

ATTACHMENT A-2
CURRENT MAILING LIST

Attachment A-2, Mailing list

News Desk
Melrose Park Herald
1232 Central Ave.
Wilmette, IL 60091

Public Service Director
WBBM, Channel 2
630 N. McClurg St.
Chicago, IL 60611

Public Service Director
WMAQ, Channel 5
Merchandise Mart
Chicago, IL 60654

Public Service Director
WTTW, Channel 11
5400 N. St. Louis Ave.
Chicago, IL 60625

Public Service Director
WBBM, AM-FM
630 N. McClurg St.
Chicago, IL 60611

Public Service Director
WFMT / FM
303 E. Wacker Dr.
Chicago, IL 60618

The Honorable Richard Durbin,
United States Senator
230 S. Dearborn Street, Ste. 3892
Chicago, IL 60604

The Honorable Kathleen Willis
IL State Representative
112 N. Wolf Rd.
Northlake, IL 60164

The Honorable Mike Quigley
U.S. Congress, IL Dist. 5
1057 W. Belmont Ave.
Chicago, IL 60657

Mr. Steven Swanson
Chicago Tribune
435 N. Michigan
Chicago, IL 60611

Public Service Director
WGN, Channel 9
2901 W. Bradley Pl.
Chicago, IL 60618

Public Service Director
WLS, Channel 7
190 N. State Street
Chicago, IL 60601

Public Service Director
WFLD, Channel 32
300 N. State
Chicago, IL 60610

Public Service Director
WBEZ / FM
1819 W. Pershing Rd.
Chicago, IL 60609

Public Service Director
WGN / AM
435 N. Michigan
Chicago, IL 60611

The Honorable Mark Kirk
United States Senator
230 S. Dearborn Street, Ste. 3900
Chicago, IL 60604

The Honorable Don Harmon
IL State Senator, Dist 39
6933 W North Ave.
Oak Park, IL 60302

The Honorable Camille Lilly
Illinois State Representative, Dist. 78
5755 W. Division
Chicago, IL 60651

Attachment A-2, Mailing list

US Army Corp. of Engineers
Regulatory Functions Branch
111 N. Canal Street, 6TH Floor
Chicago, IL 60606-7206

Mr. John M. O'Malley
State's Attorney Office
118 N. Clark Street, Rm 434
Chicago, IL 60602

Ms. Mara McGinnis
IEPA, Office of Community Relations
1021 N. Grand Ave, East
PO Box 19276
Springfield, IL 62794-9276

Illinois Office of Attorney General
Environmental Enforcement Division
W. Randolph, Suite 12
Chicago IL 60601

ILDNR, Resource Management
600 N. Grand Ave. West
Springfield, IL 62706

ILDNR, Office of Water Resource Mgt.
524 S. Second
Springfield IL 62701-1787

ILDOA, Div. of Natural Resources
State Fairgrounds
P. O. Box 19281
Springfield, IL 62794

Illinois State Chamber of Commerce
215 E. Adams St.
Springfield, IL 62701

Waste Management Research & Information Center
1 East Hazelwood Dr.
Champaign, IL 61820

The Honorable Luis V. Gutierrez
U.S. Congress, IL Dist. 4
5531 W. Cermak Rd.
Cicero, IL 60804

Regional Office Manager
IEPA, Division of Land Pollution Control
Des Plaines Regional Office
9511 Harrison St.
Des Plaines, IL 60016

Illinois Office of Attorney General
Environmental Law Division
500 South 2nd Street
Springfield, IL 62701

Illinois. Historic Preservation Agency
Preservation Services / Archeology Sect.
1 Old State Capital Plaza
Springfield, IL 62701-1512

Ms. Deanna Glosser
ILDNR, Div. of Natural
Resource Review & Coordination
524 S. Second
Springfield IL 62701-1787

Mr. Scott Franks
ILDOT, Bureau of Environmental Programs
PO Box 19281
Springfield, IL 62794

Illinois Dept. of Commerce and Economic Opportunity
620 East Adams St.
Springfield, IL 62701

IL Dept. of Public Health
4212 W. St. Charles Rd.
Bellwood, IL 60104

IL State Natural History Survey
607 E. Peabody
Champaign, IL 61820

Attachment A-2, Mailing list

IL State Geological Survey
615 E. Peabody
Champaign, IL 61820

Illinois State Water Survey
2204 Griffith Drive
Champaign, IL 61820

Mr. Jack Hickey
Cook County Sheriff's Office
Cook County Bldg.
118 N. Clark St., Rm. 431
Chicago, IL 60602

Mr. John Guzzardi
Melrose Park ESDA
1553 N. 33nd Ave.
Melrose Park, IL 60160

Greenpeace USA
1017 W. Jackson Blvd.
Chicago, IL 60607

Detrex Corporation

Rafael P Gonzalez, Public Affairs Specialist
Land and Chemicals Div (L-8J)
USEPA, Region V
77 West Jackson Blvd.
Chicago, IL 60604

Ms. Mary Riegle
IEPA
1021 N. Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Sue Brauer, RCRA/TSCA Prgms. Sect.
RCRA Branch, 8th Floor
Land and Chemicals Division
U.S. EPA - Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Mary Setnicar, Chief
RCRA Branch, 8th Floor
Land and Chemicals Division
U.S. EPA - Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Office of Illinois Attorney General
Environmental Bureau North
500 South 2ND Street
Springfield, IL 62706

Illinois Dept. of Natural Resources
Resource Management
One Natural Resources Way
Springfield, Illinois 62702-9276

Ill. Historic Preservation Agency
Preservation Services/Archeology Sect.
1 Old State Capitol Plaza
Springfield, Illinois 62701-1512

Illinois Dept. of Natural Resources
Office of Water Resource Management
One Natural Resources Way
Springfield, Illinois 62702-9276

Illinois Dept. of Natural Resources
Div. of Natural Resource Review & Coord., Office of Realty/Env. Planning
One Natural Resources Way
Springfield, Illinois 62702-9276

Illinois Dept. of Agriculture
Division of Natural Resources
State Fairgrounds
Post Office Box 19281
Springfield, Illinois 62794

Attachment A-2, Mailing list

Scott Franks
Bureau of Environmental Programs
Illinois Dept. of Transportation
PO Box 19281
Springfield, IL 62794-9281

Warren Ribley, Director
Illinois Department of Commerce
and Economic Opportunity
620 East Adams Street
Springfield, Illinois 62701

Director
Ill. State Natural History Survey
607 East Peabody
Champaign, Illinois 61820

Director
Illinois State Water Survey
2204 Griffith Drive
Champaign, Illinois 61820

Haz. Waste Permit Monitoring Group
Environmental Information Limited
7301 Phms Lane, Suite 460
Edina MN 55439

IL League of Women Voters
332 South Michigan Ave. #1050
Chicago, IL 60604-4301

Kurt Erickson
Statehouse Press Room
401 S. 2nd St., Statehouse West Mezzanine
Springfield, IL 62706

Jack Darin
Sierra Club
70 E. Lake St., Ste. 1500
Chicago, Il 60601-7447

Tita LaGrimas, Dir. Reg. Affairs
Pollution Control Industries
4343 Kennedy Ave.
East Chicago, IN 46312

Illinois State Chamber of Commerce
215 East Adams Street
Springfield, Illinois 62701

George Vander Velde
Waste Management Research Center
1 East Hazelwood Drive
Champaign, Illinois 61820

Donald McKay, Director
Illinois State Geological Survey
615 East Peabody
Champaign, Illinois 6182

Operations Mgr.
Safety Kleen Dolton Recycle Center
633 E. 138th Street
Dolton IL 60419

Chicago Dept of Environment
30 N. LaSalle St., 25th Floor
Chicago IL 60602

Operations Mgr.
Envirite Corp
16435 South Center Ave.
Harvey, IL 60426

Midwest Center for Environmental Science &
Public Policy
5005 N. Palisades Rd.
Whitefish Bay, WI 53217-5756

Lionel Trepanier
Chicago Greens
PO Box 408316
Chicago, IL 60640

Sierra Club Prairie Group
PO Box 131
Urbana, IL 60803

Attachment A-2, Mailing list

Greg R. Michaud
Manager, Environmental Services
Johnson, Depp & Quisenberry
6450 S. 6th St. Rd., Suite B
Springfield, IL 62712-6875

Angela Tin, Dir. Environmental Programs
American Lung Assoc. of IL
3000 Kelly Lane
Springfield, IL 62711

Tommy Thomson, Village Clerk
Village of Franklin Park
9500 Belmont Avenue
Franklin Park, Illinois 60131

Barrett F. Pedersen, Mayor
Village of Franklin Park
9500 Belmont Avenue
Franklin Park, Illinois 60131

Kevin Barr, Mayor
Village of Schiller Park
9526 W. Irving Park Rd.
Schiller Park, IL 60176

Claudia Irsuto, Village Clerk
Village of Schiller Park
9526 W. Irving Park Rd.
Schiller Park, IL 60176

Angelo Saviano, Village President
Village of Elmwood Park
11 Conti Parkway
Elmwood Park, IL 60707

Gina Pesko, Clerk
Village of Elmwood Park
11 Conti Parkway
Elmwood Park, IL 60707

Anan Abu-Taleb, Village President
Village of Oak Park
123 Madison St.
Oak Park, IL 60302

Teresa Powell, Village Clerk
Village of Oak Park
123 Madison St.
Oak Park, IL 60302

Henderson Yarbrough, Sr., Mayor
Village of Maywood
40 Madison Street
Maywood, IL 60153

Gary Woll, Clerk
Village of Maywood
40 Madison Street
Maywood, IL 60153

James Garbowski, Mayor
City of Elmhurst
209 N. York St.
Elmhurst, IL 60126

Patty Spencer, Clerk
City of Elmhurst
209 N. York St.
Elmhurst, IL 60126

Sam Pulia, Village President
Village of Westchester
10300 W. Roosevelt Rd.
Westchester, IL 60154

Catherine Booth, Clerk
Village of Westchester
10300 W. Roosevelt Rd.
Westchester, IL 60154

Attachment A-2, Mailing list

Frank Pasquale, Mayor
Village of Bellwood
3200 Washington Blvd.
Bellwood, IL 60104

Lena Moreland, Clerk
Village of Bellwood
3200 Washington Blvd.
Bellwood, IL 60104

Joseph Tamburino, Mayor
Village of Hillside
425 Hillside Ave.
Hillside, IL 60162

Linda Gould, Clerk
Village of Hillside
425 Hillside Ave.
Hillside, IL 60162

Anthony Calderone
Village of Forest Park
517 Desplaines Ave.
Forest Park, IL 60130

Vanessa Moritz, Clerk
Village of Forest Park
517 Desplaines Ave.
Forest Park, IL 60130

Deborah Bullwinkel, Village President
Village of Villa Park
20 S. Ardmore Ave.
Villa Park, IL 60181

Hosanna Korynecky, Clerk
Village of Villa Park
20 S. Ardmore Ave.
Villa Park, IL 60181

Updates of the legislators can be made by using the General Assembly's web site:
http://www.ilga.gov/

mayors and clerks of communities within a 3 mile radius of your facility

ATTACHMENT A-3
NOTICE LETTER

Attachment A-3
Mailing List Letter

July 30, 2013

RE: Notice of permit renewal application
Trex Properties LLC (Trex Properties)
2537 LeMoyne Ave.,
Melrose Park IL 60160
ILD 074 424 938

To Whom It May Concern:

In accordance with 35 IAC 702.142 & 703.125, Trex Properties has submitted a Hazardous Waste Permit renewal application to the ILEPA on June 30, 2013. Prior operates a hazardous waste storage facility have ceased and ELT is currently in the process of addressing soil and Groundwater contamination concerns with IEPA.

The renewal application and supporting documents are available for examination and copying at the Melrose Park Public Library, 801 Broadway, Melrose Park, IL (9am-9pm M-Th, 9am-6pm F, & 10am-2pm S). The application will be updated as changes are made during the review process.

Anyone wishing to obtain additional information on the permit application, or to be added to the facility mailing list, should forward his or her inquiries/requests to Mr. Matt Robinson, 1650 Des Peres Rd Suite 306, Des Peres, MO 63131.

General information inquiries on IEPA's hazardous waste management permit program should be directed to:

Ms. Mary Riegle (217-524-3329), ILEPA, Bureau of Land, 1021 North Grand Ave. East, PO Box 9276, Springfield, IL 62794-9276, or

Mara McGinnis (217-524-3288), ILEPA, Bureau of Land, 1021 North Grand Ave. East, PO Box 9276, Springfield, IL, for public notification questions.

ATTACHMENT A-4
PUBLICATION NOTICE AND CERTIFICATION

Attachment A-4

News Paper Notification

In accordance with 35 IAC 702.142 & 703.125, Trex Properties LLC (Trex Properties) submitted a Hazardous Waste (HW) Permit renewal application to the ILEPA on June 30, 2013. As all activities at this 2537 LeMoyne Ave., Melrose Park, IL ceased as of November 1, 2012, this application only addresses closure activities associated with the former operations.

The renewal application and supporting documentation are available for review and copying at the Melrose Park Public Library, 801 Broadway, Melrose Park, IL (9am – 9 pm M-Th; 9am – 6pm F; & 10am – 2pm S). The application will be updated as changes are made during this review process.

Anyone wishing to obtain additional information on the permit application or to be added to the facility mailing list should forward his or her inquiries to Matt Robinson, Trex Properties at 1650 Des Peres Rd Suite 306, Des Peres, MO 63131. General information inquiries on the hazardous waste management permit program should be addressed to Ms. Mary Riegle, IEPA, Bureau of Land, 1021 N. Grand Ave. East, PO Box 9276, Springfield, IL 62794-9276.

Contents

FACILITY DESCRIPTION 1
B.2 TOPOGRAPHIC MAP 4
B.2.1 General Requirements [35 IAC 703.183(s)] 4
1) Topographic Map 5
2) Flood Control 5
3) Runoff Control 5
4) Zoning 5
5) Wind Rose 5
6) Legal Boundaries 5
7) Access Control 5
8) Injection and Withdrawal Wells 6
9) Sewers 6
10) Loading and Unloading Areas 6
11) Fire Control 6
12) Hazardous Waste Management Units 6
B.2.2 Additional map requirements for new land disposal facilities 6
B.2.2 Legal Description 6
B.3 LOCATION STANDARDS [703.184, 724.118] 7
B.3.1 Seismic Standard 7
B.3.2 Floodplain Standard 7
B-4 TRAFFIC INFORMATION [35 IAC 703.183(j)] 8
B-5 OPERATING RECORD [35 IAC 724.173] 8
B.5.1 Contents of Operating Records 8
B.5.2 Installation of Tanks 8

TABLE 1 Location in Application of Topographic Map Requirements B-6

LIST OF ATTACHMENTS

Attachment B-1 Site Location and Topographic Diagram
Attachment B-2 SWMUs and Former Hazardous Waste Container Storage Area
Attachment B-3 Sampling and Analysis Plan and IEPA approval letter
Attachment B-4 FIA Flood Map
Attachment B-5 Zoning Map
Attachment B-6 Wind Rose
Attachment B-7 Plat of Survey
Attachment B-8 Sewer Locations
Attachment B-9 Hydrant Locations

SECTION B

FACILITY DESCRIPTION

This section of the RCRA Part B Permit Application provides a general description of the facility in Melrose Park, Illinois, as required by Illinois Rule 35. The applicable sections of the Illinois Regulations are referenced where appropriate.

B.1 GENERAL DESCRIPTION
[35IAC 703.183(a)]

This Corrective Measures Plan Application is for the Facility located in Cook County at 2537 LeMoyne Avenue in Melrose Park, Illinois; see Attachment B-1.

The facility formally received waste under the classification of F001 and F002. The RCRA Part B Permit No. 0311860003 and United States Environmental Protection Agency (USEPA) ID No. ILD 074424938 (Permit) were issued by the IEPA pursuant to Section 3004(u) of RCRA and 35 Illinois Administrative Code (IAC) 724.201.

The facility was only permitted to receive waste under waste codes F001 and F002. The facility was used to collect and ship waste material to other RCRA treatment, storage and disposal facilities (TSDFs). The waste, brought in for temporary storage, was only received in DOT-approved containers and ultimately shipped to other RCRA TSDFs in the containers received. There was no combining / commingling, recycling or treatment of wastes at this site, strictly through-putting of containers.

The only permitted unit is currently (2013) undergoing closure via an approved closure plan approved by IEPA on March 29, 2013. It is currently expected that the decontamination of the storage area will be completed before the end of the third quarter of calendar year 2013 with a closure report being submitted shortly thereafter. With the closure of the hazardous waste management unit, Corrective Actions will focus on the various Solid Waste Management Units (SWMUs) as defined by IEPA. A diagram showing the location of Solid Waste Management Units (SWMUs) and the former hazardous waste storage area is presented in Attachment B-2.

The principal contact person for this Application is:

Mr. Matt Robinson
1650 Des Peres Road, Suite 306
St. Louis, MO 63131

A copy of the current closure plan and IEPAs approval letter are found in Attachment B-3

B.2 TOPOGRAPHIC MAP

B.2.1 General Requirements [35 IAC 703.183(s)]

The topographic mapping and other location information requirements are summarized on Table B-1, which provides the location within this permit application where the appropriate map/information is located. Attachment B-1 provides a figure that locates the Facility within the City of Melrose Park.

1) Topographic Map

Attachment B-1 provides a map of the property and the immediate vicinity with topographic elevations. The topography of the surrounding area is illustrated on a portion of the United States Department of the Interior Geological Survey Quadrangle Map included as Attachment B-1.

2) Flood Control

The Facility is not located in an area designated as a 100-year floodplain. Attachment B-4 shows a portion of the Federal Insurance Administration (FIA) Flood Map for the Village of Melrose Park relative to the Facility.

3) Runoff Control

The topographic maps presented in Attachment B-1 indicate the surface water drainage pattern around the Facility prior to implementation of the Corrective Measures.

4) Zoning

Provided in Attachment B-5 is a color-coded zoning map for Melrose Park where the Facility is located. The entire area within approximately 500 feet of the Facility is zoned as industrial. In the area from 500 feet to 1,000 feet from the Facility, in addition to industrially zoned land, there is some light manufacturing land on the east side of 25th Avenue east of the Facility. There is also some flat residential land located east of the light manufacturing and southwest of the Facility.

5) Wind Rose

A copy of a wind rose, provided by the National Climatic Data Center in Ashville, North Carolina, for Chicago's O'Hare Airport, is provided in Attachment B-6. The wind rose indicates that the prevailing wind in the vicinity of the Facility is from between west and south.

6) Legal Boundaries

A copy of a plat survey indicating the property boundaries of the site is provided in Attachment B-7.

7) Access Control

Upon closure of the current permit, the intent is to raze the building. Access to areas where Corrective Measures are being implemented will be addressed in a separate Corrective Measures Plan.

8) Injection and Withdrawal Wells

As determined from the Melrose Park Engineering Department, there are no groundwater injection or withdrawal wells within the village of Melrose Park. This encompasses the area within a radius of 1,000 feet of the Facility.

9) Sewers

Provided in Attachment B-8 is a figure locating the storm sewers near the Facility. The only sewer present on LeMoyne Avenue in front of the Facility is an 18-inch diameter combined sewer, which collects both sanitary and storm waters that flows to the east. The catch basin in the concrete driveway is connected to this combined sewer. There are no process sewers utilized at this Facility.

10) Loading and Unloading Areas

Upon completion of implementing the Corrective Measures Plan this site will no longer have a loading and unloading area. The former loading dock is shown in Attachment B-2.

11) Fire Control

Fire control is provided by fire extinguishers located within the Facility. There is a fire hydrant located directly in front of the Facility (see Attachment B-9) that would be used by the Melrose Park Fire Department in the event of a fire.

12) Hazardous Waste Management Units

Attachment B-1 provides a diagram showing the locations of the former hazardous waste container storage area along with the associated Hazardous Waste Management Units (HWMUs).

B.2.2 Additional map requirements for new land disposal facilities

This section is not applicable.

B.2.2 Legal Description

The legal description of the site is located on Attachment B-7

TABLE B-1
LOCATION OF REQUIRED TOPOGRAPHIC MAP INFORMATION

Items Required For Topographic Maps	*Location In Application (Attachment Nos.)*
1. Topographic map extending 1,000 feet beyond Facility	B-1
2. Contour intervals	B-1
3. Map scale and date	B-1, B-2, B-3
4. 100-year floodplain area	B-4
5. Surface waters including intermittent streams	B-1
6. Surrounding land uses	B-5
7. Wind rose	B-6
8. Orientation of the map	B-1, B-2, B-7
9. Legal boundaries of the Facility	B-7
10. Access control and internal roads	N/A
11. Injection and withdrawal wells	N/A
12. Buildings	B-2, B-7
13. Sewers	B-8
14. Loading and Unloading Areas	B-2
15. Fire Control Facilities	B-9
16. Barriers for drainage and flood control	N/A
17. Location of container storage area	B-2
18. Legal description of Facility	B-7

B.3 LOCATION STANDARDS [703.184, 724.118]

B.3.1 Seismic Standard

There are no Illinois political jurisdictions designated as being located within a seismic area as identified pursuant to 40 CFR 264, Appendix VI (1985). As such, no information is required with regards to the seismic standard.

B.3.2 Floodplain Standard

The Federal Insurance Administration (FIA) Flood Map found in Attachment B-4 indicates the Facility is NOT located within a 100-year floodplain (i.e. it is located within Zone C: areas of minimal flooding).

Therefore the requirements for: engineering analysis, structural or engineering studies, or procedures to remove wastes are not applicable.

B-4 TRAFFIC INFORMATION [35 IAC 703.183(j)]

The Facility is located on a dead-end portion of LeMoyne Ave., East of 25th Street that services only commercial / industrial businesses. The road was designed and constructed to handle heavy trucks. Additionally, because the street is a dead-end, the associated traffic is generally employees and trucks servicing these local businesses.

Traffic on the 0.33 acre site will be limited to those individuals who are involved in the CMP implementation.

B-5 OPERATING RECORD [35 IAC 724.173]

B.5.1 Contents of Operating Records [724.173]

Operating records associated with the Corrective Measures Plan will be maintained off site. The operating record consists of:

1) Copy of the Profile Sheets for any waste shipped off site;
2) Copies of all waste analysis results;
3) Copies of all manifests, and any required land ban forms for at least three years after the waste is last shipped off site;
4) A copy of the facilities operating permit;
5) A copy of the post closure cost estimates, if required;
6) A copy of any report required subsequent to implementation of the Contingency Plan; and
7) A copy of any correspondence/records from IEPA;

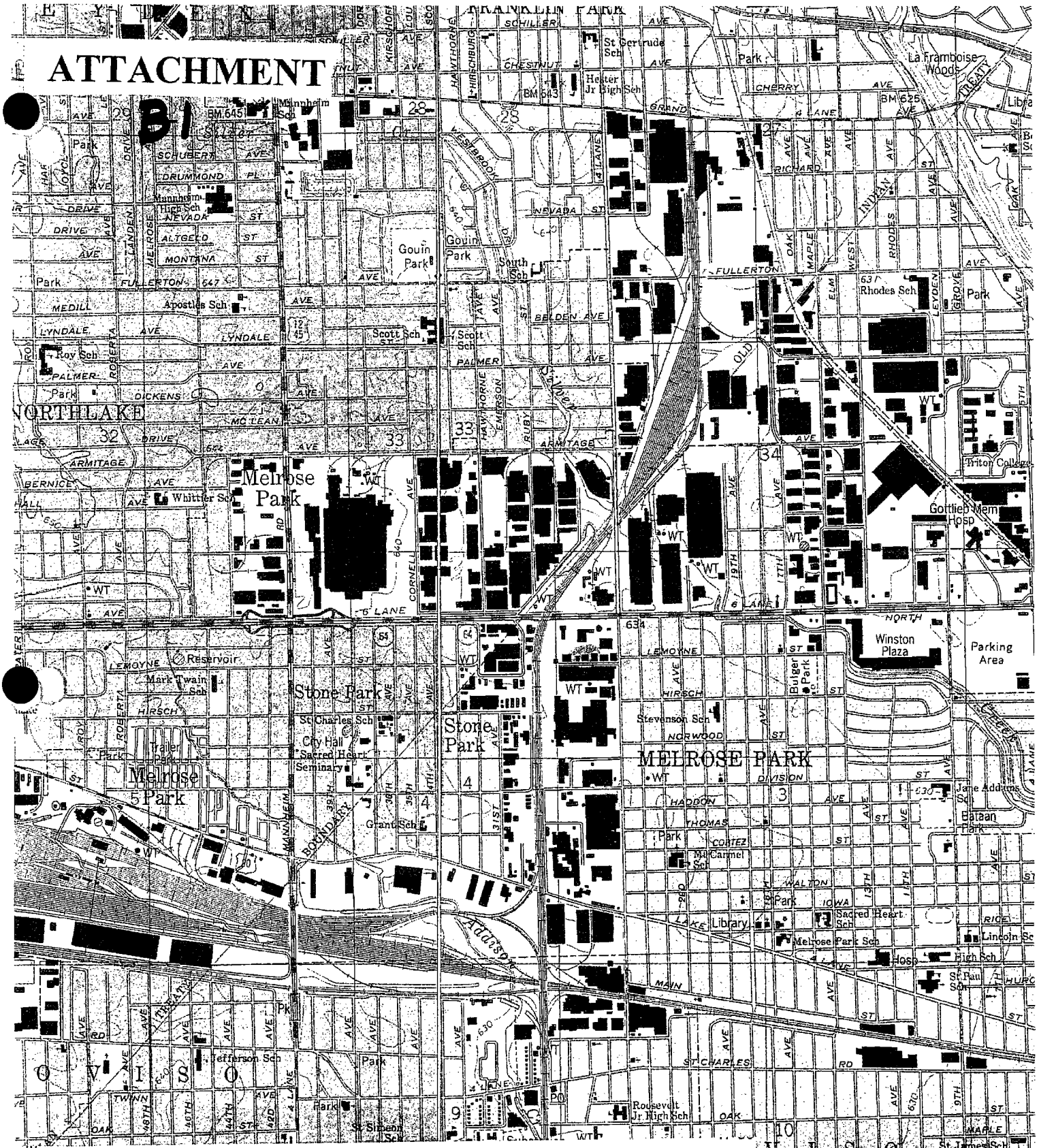
B.5.2 Installation of Tanks

This section is not applicable.

Attachment B-1
Site Location and Topographic Diagram

ATTACHMENT

B1



SCALE 1:24 000

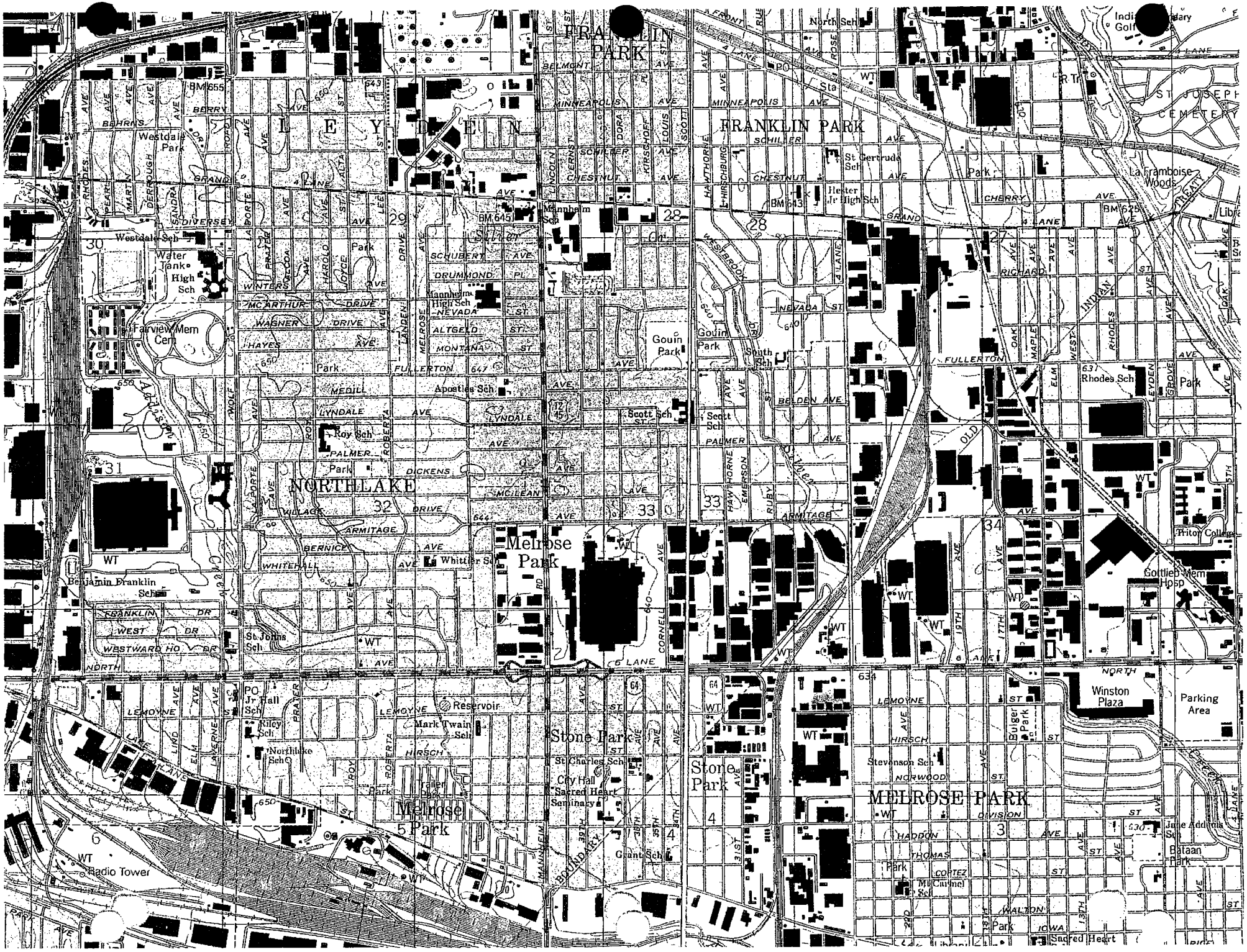
KILOMETERS 1 0.5 0 1 2

METERS 1000 0 1000 2000

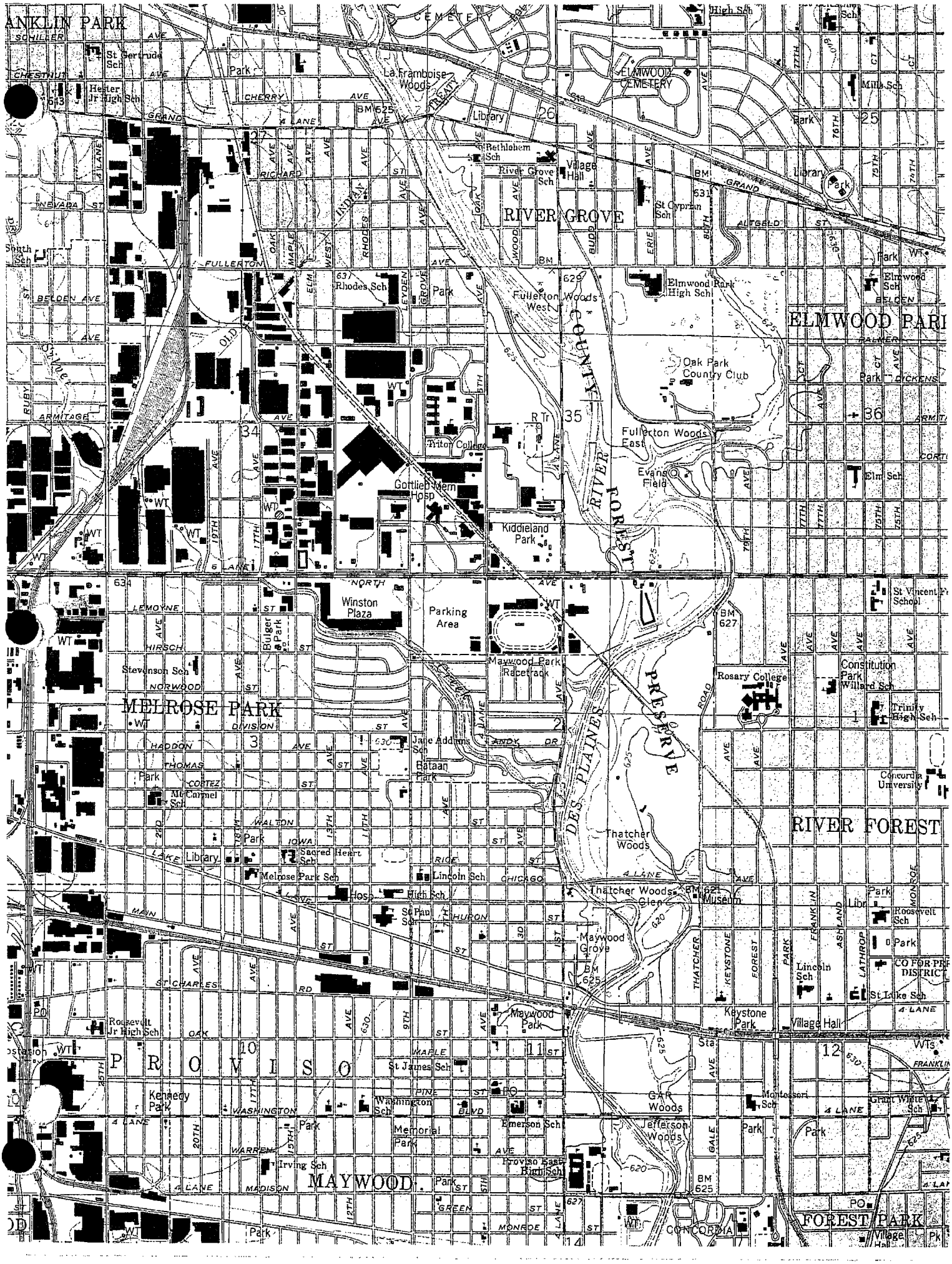
MILES 1 0.5 0

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
TO CONVERT FROM FEET TO METERS, MULTIPLY BY 0.3048



FRANKLIN PARK
LEYDEN
NORTHLAKE
Melrose Park
Stone Park
MELROSE PARK
Westdale Park
Westdale Sch
Water Tank
High Sch
Fairview Mem Cem
Mannheim High Sch
Mannheim Sch
Apostles Sch
Scott Sch
Roy Sch
Whittier Sch
Benjamin Franklin Sch
St Johns Sch
Jr Hall Sch
Riley Sch
Northlake Sch
Mark Twain Sch
Reservoir
St Charles Sch
City Hall
Sacred Heart Seminary
Grant Sch
Radio Tower
Gouin Park
South Sch
St Gertrude Sch
Hester Jr High Sch
North Sch
Rhodes Sch
Stevenson Sch
Mt Carmel Sch
Sacred Heart
Winston Plaza
Parking Area
Bulger Park
Gottlieb Mem Hosp
Triton College
La Framboise Woods
ST JOSEPH CEMETERY
Bataan Park
June Addams Sch
Park

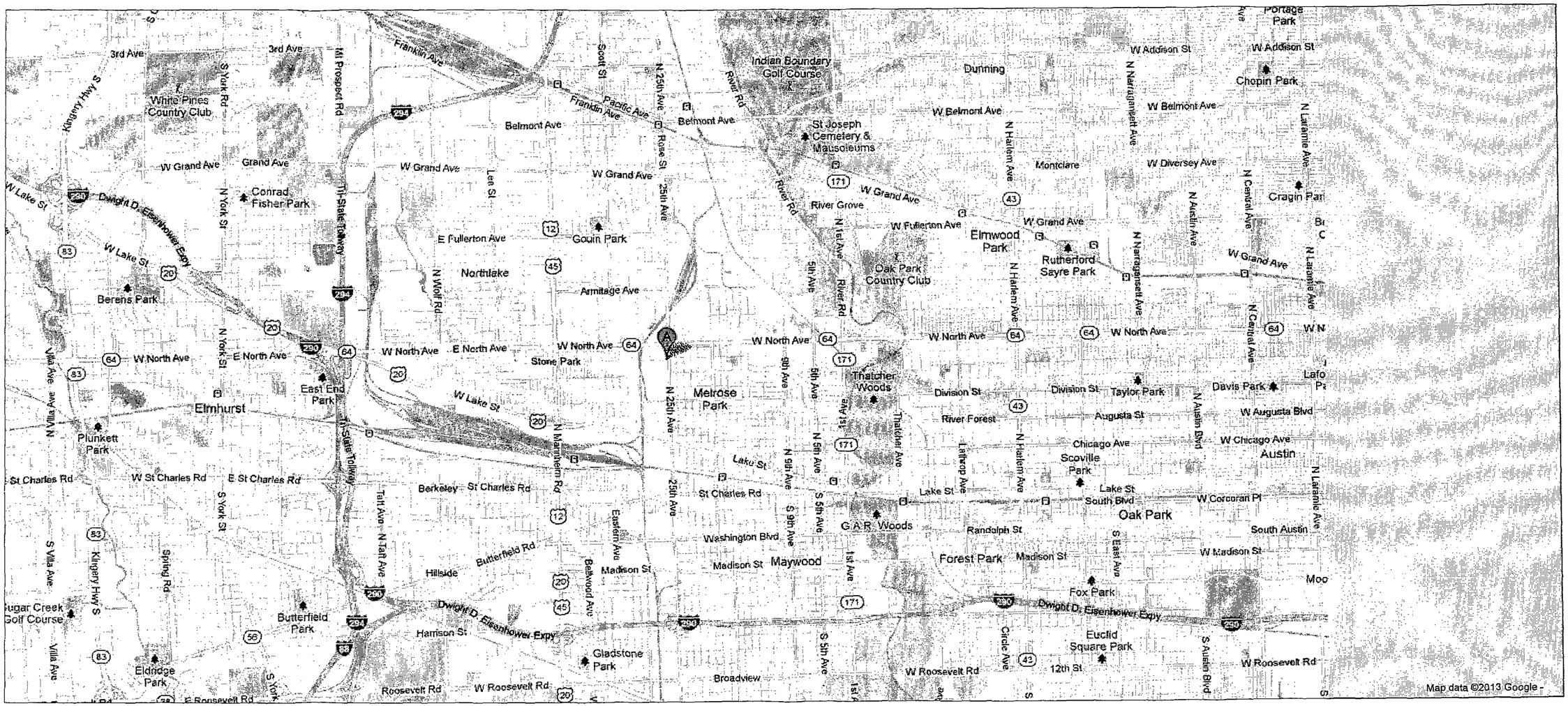

FRANKLIN PARK
CEMETERY
High Sch
St Gertrude Sch
Hester Jr High Sch
Park
La Framboise Woods
ELMWOOD CEMETERY
Mills Sch
Library
Bethlehem Sch
River Grove Sch
Village Hall
St Cyprian Sch
RIVER GROVE
Elmwood Park High Sch
Elmwood Sch
Rhodes Sch
Fullerton Woods West
ELMWOOD PARK
Oak Park Country Club
Triton College
Fullerton Woods East
Evans Field
Elm Sch
Gottlieb Mem Hosp
Kiddieland Park
FOREST PRESERVE
DES PLAINES RIVER
Winston Plaza
Parking Area
Maywood Park Racetrack
St Vincent Ferrer School
Rosary College
Constitution Park
Willard Sch
Trinity High Sch
Stevenson Sch
MELROSE PARK
Jane Addams Sch
Bataan Park
Concordia University
Mt Carmel Sch
Thatcher Woods
RIVER FOREST
Sacred Heart Sch
Melrose Park Sch
Lincoln Sch
Hosp
High Sch
Thatcher Woods Glen
Museum
Roosevelt Sch
Maywood Grove
Lincoln Sch
St Luke Sch
Keystone Park
Village Hall
Roosevelt Jr High Sch
Maywood Park
PROVISO
St James Sch
Kennedy Park
Washington Sch
GAR Woods
Montessori Sch
Grant Write Sch
Memorial Park
Emerson Sch
Jefferson Woods
Irving Sch
Proviso East High Sch
MAYWOOD
CONCORDIA
FOREST PARK

ATTACHMENT B-1

To see all the details that are visible on the screen, use the "Print" link next to the map.

SITE LOCATION

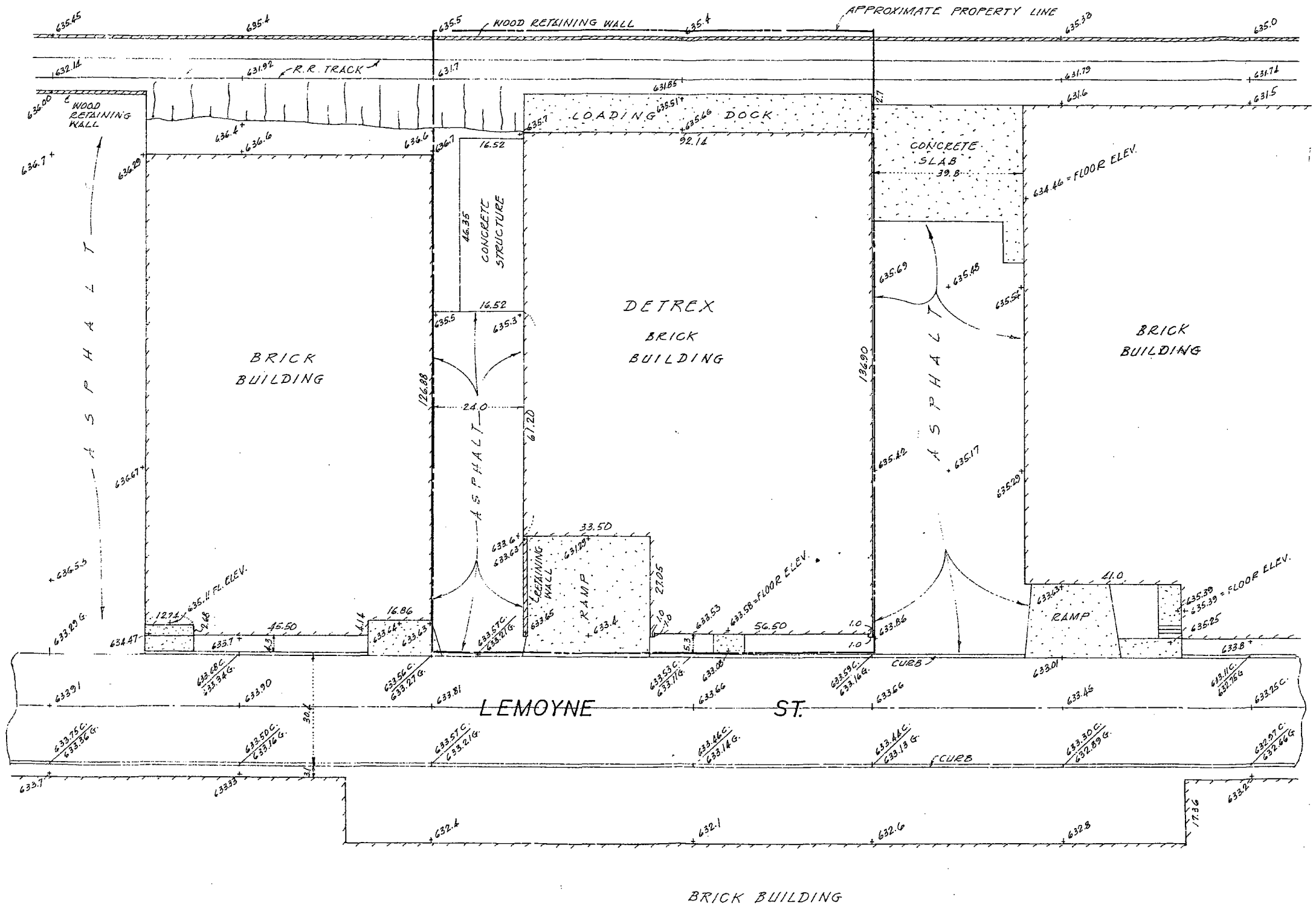
Google



ATTACHMENT B-1
SITE TOPO

CHICAGOLAND SURVEY CO.
5441 N. LINCOLN AVE. CHICAGO, ILLINOIS 60625 271-9447

TOPOGRAPHICAL SURVEY
FOR
DETREX — MELROSE PARK



N

SCALE: 1" = 20'

NOTES: C = CURB
G = GUTHER
ELEVATIONS ARE WITH REFERENCE TO USGS DATUM.

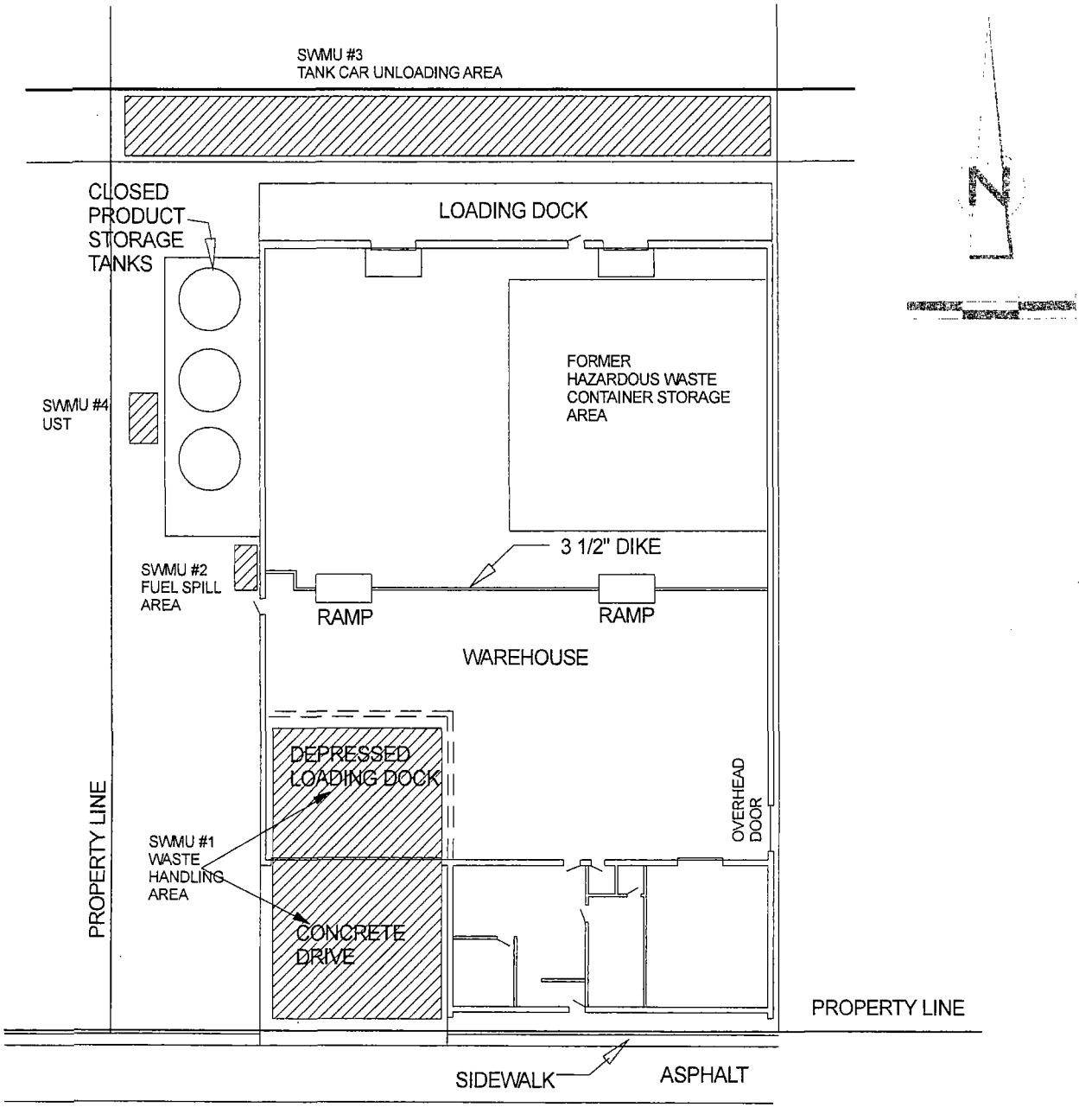
CHICAGO November 7, 1988

MILUTIN PROPADOVICH ILLINOIS LAND SURVEYOR NO. 1623

FILE NO.: 45-29

Attachment B-2
SWMUs and Former Hazardous Waste Container Storage Area

ATTACHMENT B-2
FACILITY PLAN



2537 LEMOYNE AVENUE

MELROSE PARK, IL

Attachment B-3
Sampling and Analysis Plan and IEPA approval letter

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, DIRECTOR

217/524-3300

March 29, 2013

Detrex Corporation
Attn: Mr. David Craig
P.O. Box 5111
Southfield, MI 48086-5111

Re: 03118660003 -- Cook County
Detrix Corporation
ILD 074424938
Log No. PS13-045
RCRA Permit File

Dear Mr. Craig:

This letter is in response to your letter December 12, 2012 and received on December 14, 2012 stating your intent to implement RCRA closure for Detrex Corporation located at 2537 West Le Moyne Street, Melrose Park, Illinos.

The Sampling and Analysis Plan dated January 24, 2013 and received on January 28, 2013 has been reviewed and approved.

After completing closure of the RCRA permitted hazardous waste management units and corrective action activities, a request for release of the financial assurance in accordance 35 Ill. Adm. Code 724.243(i), may be made. The written request should be submitted to the following address:

Illinois Environmental Protection Agency
Attn: Brian White
Bureau of Land #24
Waste Reduction and Comliance Section
Financial Assurance Unit
1021 North Grand Avenue East
Post Office Box 19276
Springfield Illinois 62794-9276

After completion of closure, the certification of closure form identified as Attachment B to the permit must be completed and submitted with 60 days. A representative of the Illinois EPA may then conduct a Closure Verification Inspection of the permitted hazardous waste management units.

Once your closure certification has been approved by the Illinois EPA, a RCRA Part B permit modification must be submitted to reflect the closure of the units at the facility in accordance with the procedures in 35 Ill. Adm. Code 703 Subpart G.

If you have any further questions in this matter please contact Mary Riegle at 217/524-3329.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:MER:03118660003-PS13-045-Final.docx

Cc: James E. Huff, P.E., Huff & Huff Incorporated

Cc: Bureau File
Ted Dragovich
Mary Riegle
DePlaines Office

SAMPLING AND ANALYSIS PLAN

For

DETREX CORPORATION

MELROSE PARK

CONTAINER STORAGE AREA

LPC No. 0311860003—Cook County

ILD074424938

Permit Log No. 113R

January 2013

Huff & Huff, Incorporated

environmental engineers
and consultants

1. INTRODUCTION

The Detrex Corporation (Detrex) has a RCRA Part B Permit for its Melrose Park facility, located at 2537 West Le Moyne Street, Melrose Park, Illinois. Specifically, the Part B permit was for a Container Storage Area that was capable of storing 240 55-gallon drums. The site location is depicted on Figure 1-1 and the drum storage area is depicted on Figure 1-2, inside the building in the north portion of the building. The storage area is curbed, has a concrete base, and is coated with a chemical resistant sealant. The primary hazardous wastes stored at this facility were chlorinated solvents.

Detrex has discontinued all operations at this location and all containerized hazardous wastes have been removed from the site. As part of the planned site closure, Detrex is prepared to conduct the formal closure of the drum storage area, in accordance with its approved Closure Plan. This Sampling and Analysis Plan has been prepared to detail the contaminants that will be analyzed for, the test methods to be utilized, and the level of decontamination that will be used to determine decontamination is complete.

Note, this Sampling and Analysis Plan, as well as the Closure Plan to be conducted are limited to the surface of the concrete. The floor will be checked for cracks, but no sub-concrete base soil sampling is planned, as Detrex is already actively involved in a site RFI investigation with pending remediation activities. Areas where concrete was cored from the recent subsurface investigation activities were plugged post sampling. It is Detrex's desire to complete the formal closure of the storage area, so that building demolition and remediation can begin.

2. SUMMARY OF CLOSURE PLAN

According to the approved Closure Plan, the following steps will be taken after removal of the hazardous waste inventory.

- Broom sweep the concrete pad and place all sweepings in a container for shipment to a RCRA permitted facility.
- Inspect the cracks, gaps, and unsealed joints.
- Unsealed joints will be repaired prior to proceeding with decontamination
- Steam clean area followed by triple rinsing
- Decontamination will be verified by collecting a sample of the final rinsate.
- The rinsate and the final wash samples will be submitted for analysis for the "major constituents that were in storage."
- Rinsate samples from the wet vacuum will be placed in 3 40-ml glass vials and shipped under chain of custody protocols for analysis.

- A trip blank will be shipped by the laboratory and analyzed for the same parameters.
- A post cleaning visual inspection of the secondary containment area will be conducted to assess the integrity of the containment area.
- Concrete core samples, if required, will be collected based on post cleaning inspections.

3. HAZARDOUS WASTE CONSTITUENTS TO BE ANALZED FOR IN SAMPLES

Based on the RCRA Part B permit, the following are the major constituents permitted to be stored at this facility:

- Tetrachloroethylene
- Trichloroethylene
- 1,1,1-Trichloroethane
- Dichloromethane
- Trichlorofluoromethane

In accordance with the approved Closure Plan, these constituents are considered the "major constituents that were in storage" and will serve as the basis for testing the rinsate to verify the sealed concrete pad has been adequately cleaned.

4. TEST METHOD and REPORTING LIMITS

The steam cleaning and three rinsate samples will be analyzed using SW 846, Method 5030B/8260B. Samples will be collected in three 40 ml vials provided by the NELAC approved laboratory. Unpreserved vials will be used as samples are planned for collection directly from wet vac reservoir. The Reporting Limits that will be strived for using this method is as follows:

Compound	Reporting Limit, mg/L
• Tetrachloroethylene	0.005
• Trichloroethylene	0.005
• 1,1,1-Trichloroethane	0.005
• Dichloromethane	0.005
• Trichlorofluoromethane	0.005

5. SAMPLES TO BE TAKEN and SAMPLING PROCEDURE

In accordance with the approved Closure Plan, individual samples from the steam cleaning condensate and the three individual rinses will be collected. A wet vac will be used to remove both the steam cleaning condensate and the three rinse streams from the floor. Samples will be collected directly out of the wet vac reservoir directly into the three VOA bottles, being careful as to avoid trapped air bubbles. The wet vac shall be new and will be rinsed with the steam cleaner prior to use and between rinses. New, disposable gloves will be used for sample collection.

Once in their respective bottles, all samples will be stored in a cooler iced down to maintain a sample holding environment of 4 °C or less. This temperature will be maintained until received by the laboratory conducting the sample analysis. Sample responsibilities will be tracked using chain-of-custody procedures. A trip blank will be generated by the laboratory which will travel with the sample bottles through the lab-to site-back to lab process and also analyzed for the same constituents. In addition, a field blank will be generated before beginning by pouring the same tap water source that will be used in the cleaning the new wet vac, and then sampling this water, with testing for the same constituents. Note, the trichlorofluoromethane is a common refrigerant, also called Freon 11.

6. FLOOR INSPECTION

In accordance with the approved Closure Plan, the floor will be inspected for integrity, and any cracks will be photo-documented and their locations measured off the northeast corner of the building. Cracks found prior to decontamination will be sealed to prevent penetration of any liquids.

Subsequent to the completion of decontamination operations, a visual examination of the secondary containment area will be conducted to assess the integrity of the containment system after closure. If visible staining of the concrete or cracks is observed in the concrete, concrete core samples will be collected in accordance with the RCRA permit.

If concrete cores are collected, they will be 1-inch diameter, immediately wrapped in visqueen and taped shut, and placed on ice for submittal for analysis for the primary constituents listed in Section 4. Decontamination shall be considered complete if sample results indicate non-detect for constituents denoted in section 4.

7. CONDENSATE AND RINSE DISPOSAL

The condensate and rinse waters will be combined into 55 gallon drums for disposal as a hazardous waste. The results of the individual samples will be sufficient for acceptance.

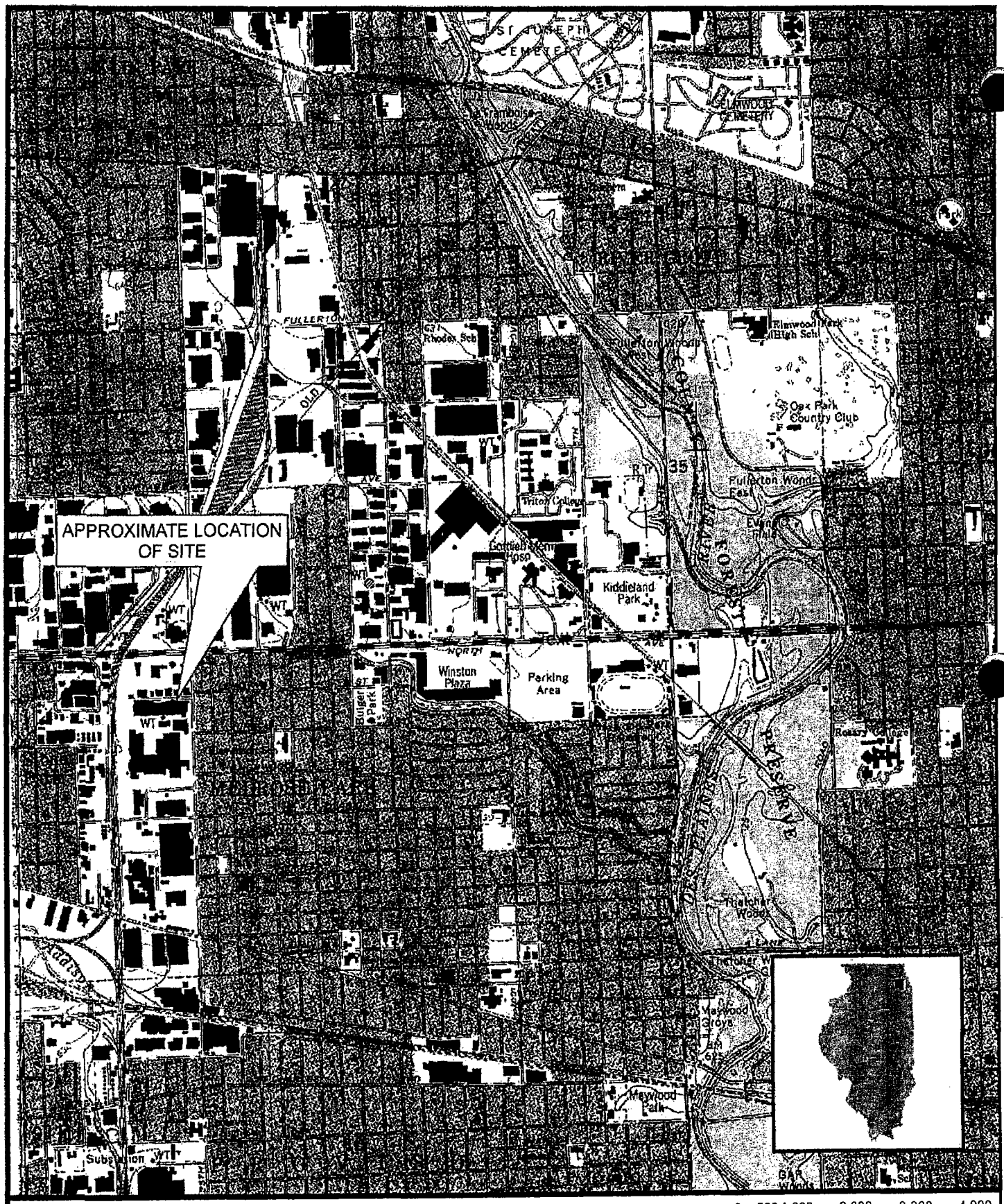
8. DEMONSTRATION OF CLOSURE

The final rinsate analysis will be utilized to demonstrate the storage pad has been adequately cleaned. The following objectives, the Class 1 Groundwater standards, will be compared to the final rinsate results to demonstrate that the pad has been adequately cleaned:

Constituent	Rinsate Target Concentrations, mg/L
• Tetrachloroethylene	0.005
• Trichloroethylene	0.005
• 1,1,1-Trichloroethane	0.200
• Dichloromethane	0.005
• Trichlorofluoromethane	0.700 [a/]

[a/] Public Health Goal, California has a drinking water MCL of 0.15 mg/L

For any concrete core samples collected, if the samples come back non-detect for all compounds, the concrete will be deemed clean, and suitable for recycling. If any detections occur, the concrete when removed at a future date will be landfilled. If the results are below the most restrictive pathway in 35 Ill Adm Code 742, the concrete will be landfilled as a special waste. If any constituent is above the most restrictive pathway in 35 Ill Adm Code 742, the concrete will be landfilled as a hazardous waste.



Huff & Huff Incorporated

FIGURE 1-1
SITE LOCATION MAP
DETREX CORPORATION
MELROSE PARK, ILLINOIS

SOURCE U S DEPARTMENT OF THE INTERIOR
U.S GEOLOGICAL SURVEY
RIVER FOREST QUADRANGLE

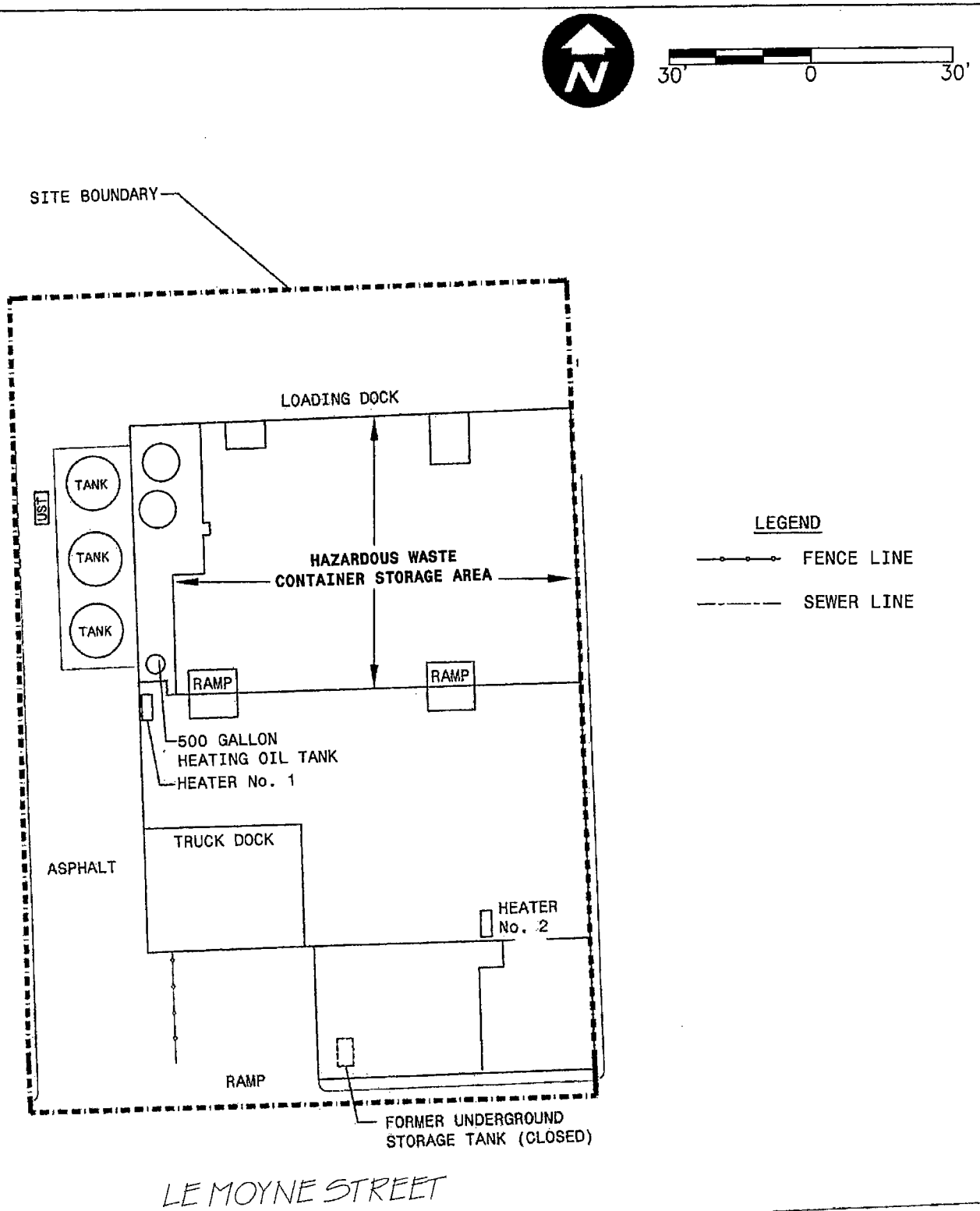
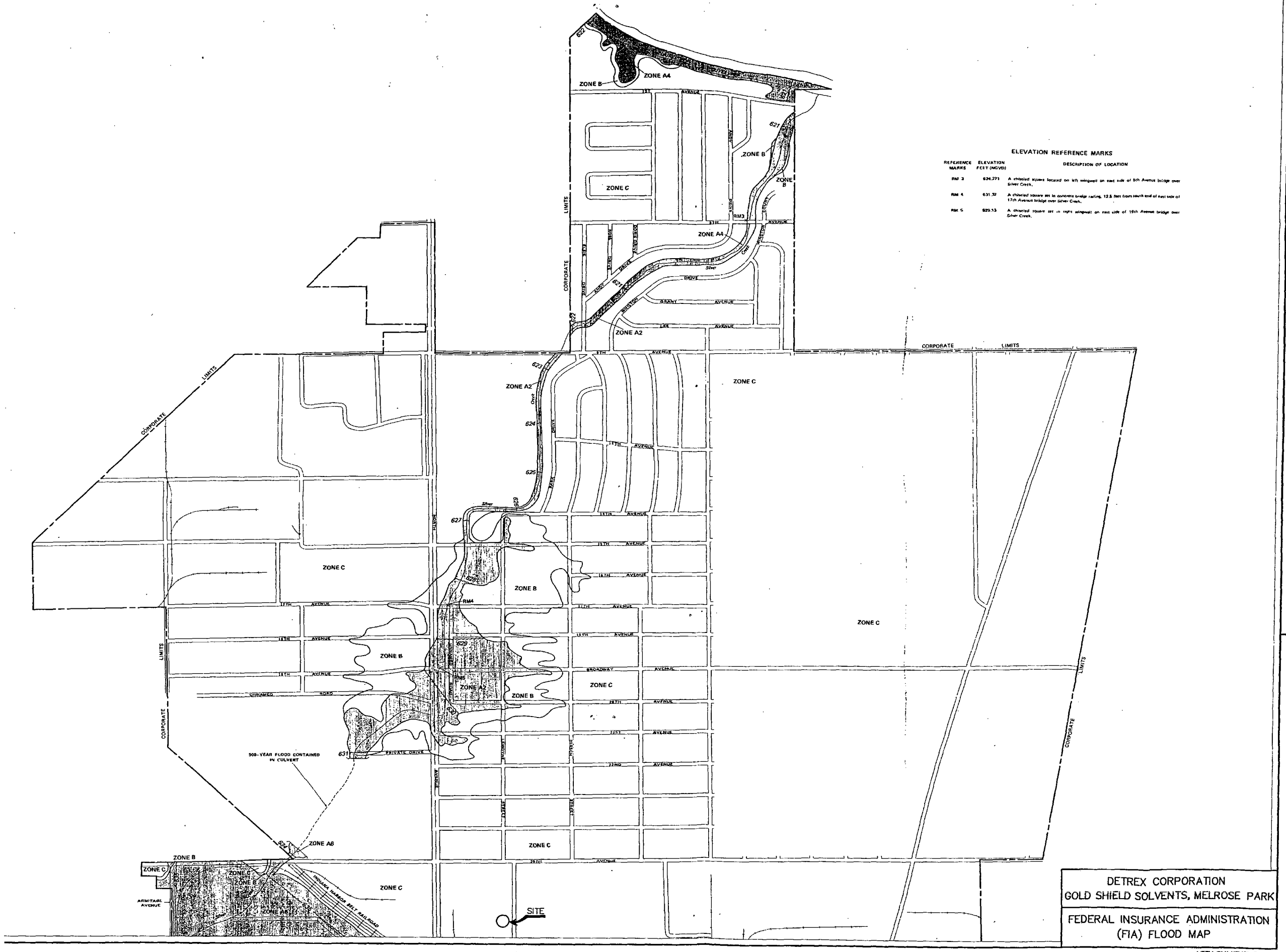


FIGURE 1-2
DRUM STORAGE AREA
DETREX CORPORATION
MELROSE PARK, ILLINOIS

BASE MAP BY ARCADIS
CADFILE: DETREX_SBLM

Attachment B-4
FIA Flood Map



ELEVATION REFERENCE MARKS

REFERENCE MARKS	ELEVATION FEET (NGVD)	DESCRIPTION OF LOCATION
RM 3	624.271	A chiseled square located on left wingwall on east side of 6th Avenue bridge over Silver Creek.
RM 4	631.32	A chiseled square set in concrete bridge railing, 12.5 feet from south end of east side of 17th Avenue bridge over Silver Creek.
RM 5	629.13	A chiseled square set in right wingwall on east side of 19th Avenue bridge over Silver Creek.

KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	
Zone Designations* With Date of Identification e.g., 12/2/74	ZONE B / ZONE B
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation in Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood, or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
APRIL 6, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
OCTOBER 15, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
JANUARY 2, 1981

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

VILLAGE OF
MELROSE PARK,
ILLINOIS
COOK COUNTY

PANEL 1 OF 2

COMMUNITY-PANEL NUMBER
170125 0001 B

EFFECTIVE DATE:
JANUARY 2, 1981

federal emergency management agency
federal insurance administration

DETREX CORPORATION
GOLD SHIELD SOLVENTS, MELROSE PARK

FEDERAL INSURANCE ADMINISTRATION
(FIA) FLOOD MAP

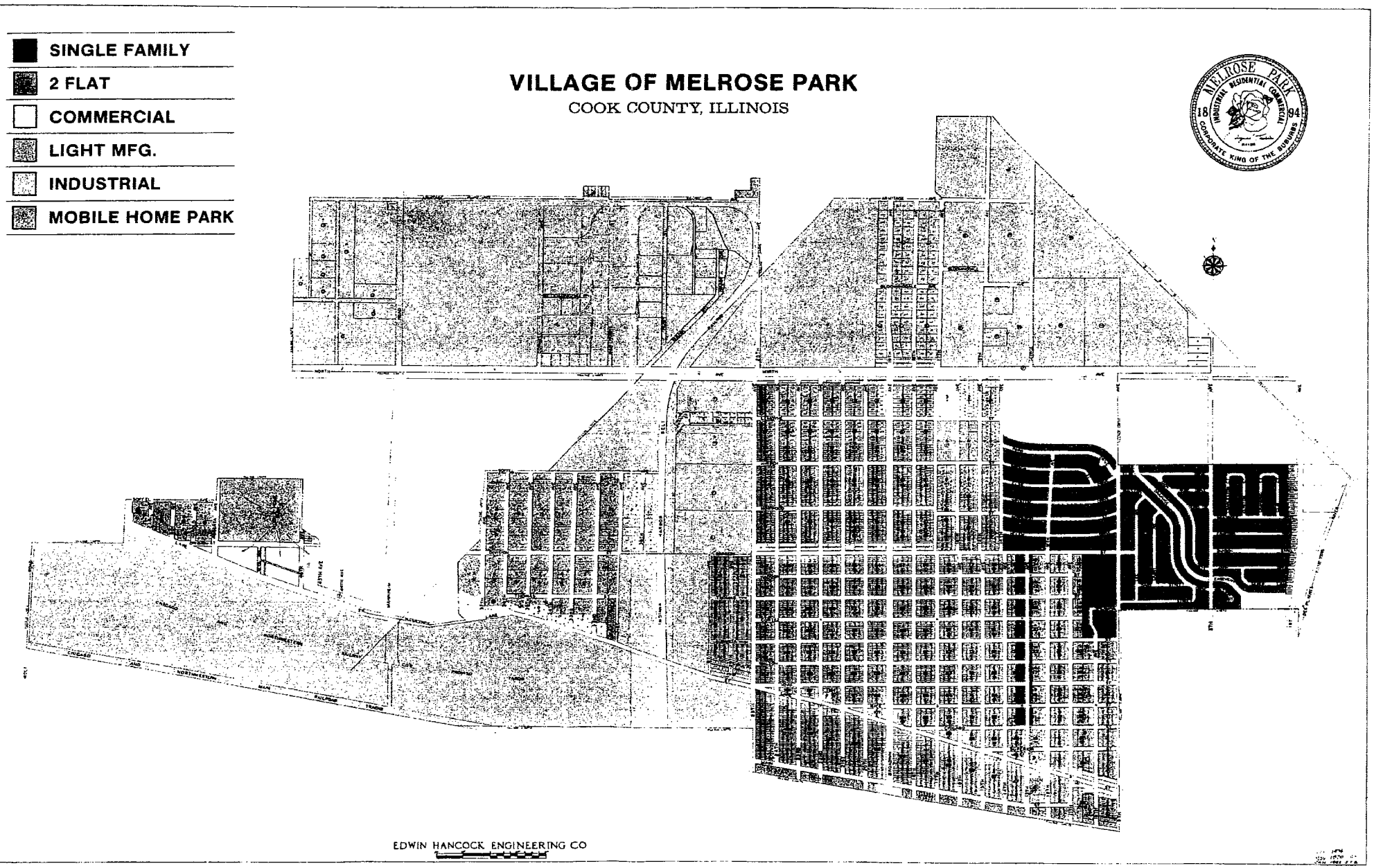
ATTACHMENT B-10

C.R.A. PROJECT No. 2471 DWG. No. 11 FILE: 5

Attachment B-5
Zoning Map

VILLAGE OF MELROSE PARK

COOK COUNTY, ILLINOIS



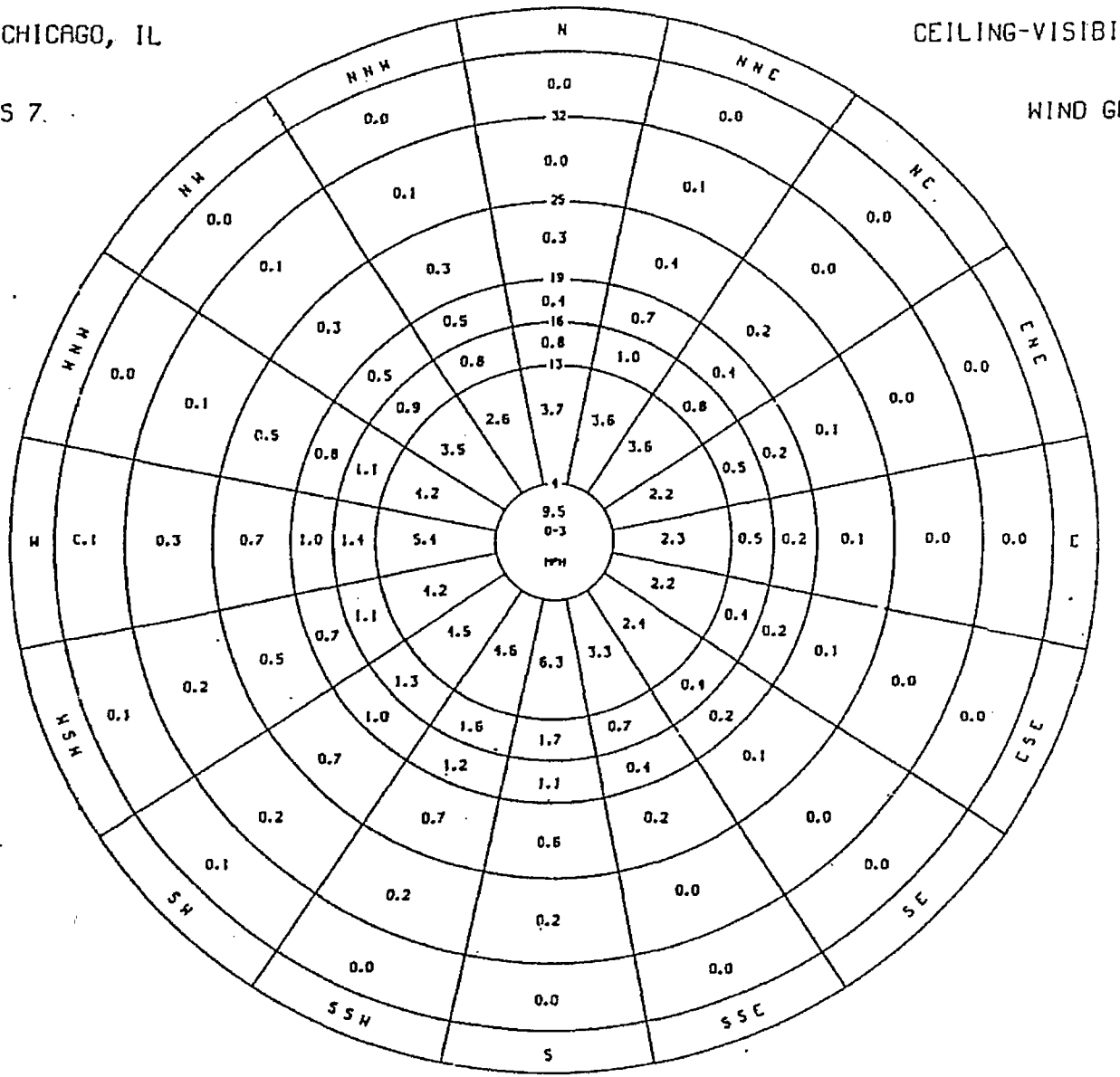
Attachment B-6
Wind Rose

ORD CHICAGO, IL

CLASS 7.

CEILING-VISIBILITY

WIND GRAPH



WIND ROSE

Melrose Park, Illinois Facility

CRA

ATTACHMENT B-6

Attachment B-7
Plat of Survey

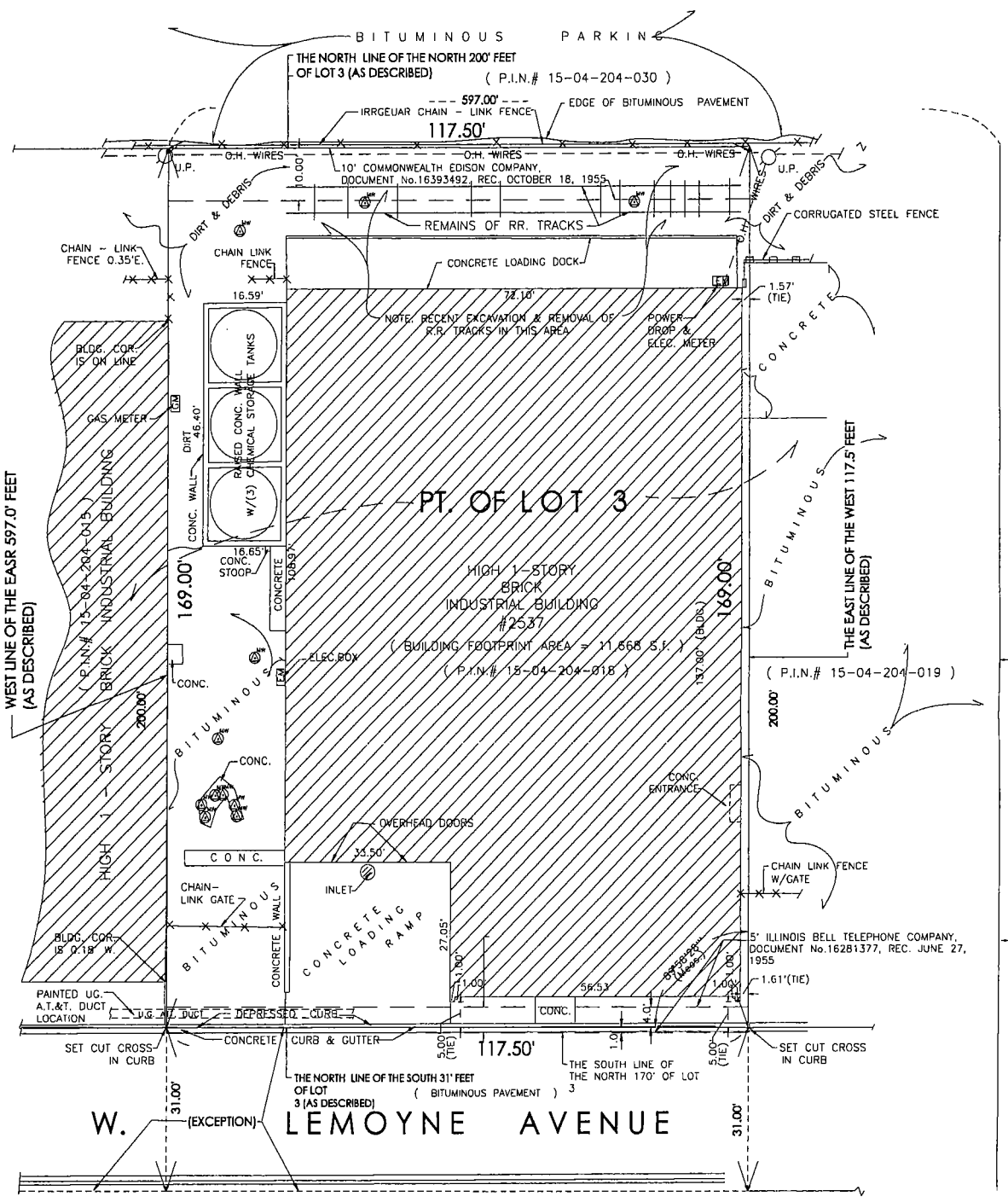
ALTA / ACSM LAND TITLE SURVEY

OF

THE WEST 117.5 FEET OF THE EAST 597 FEET OF THE NORTH 200 FEET (EXCEPT THE SOUTH 31 FEET THEREOF DEDICATED FOR STREET) OF LOT 3 IN OWNER'S DIVISION OF THE EAST 70 ACRES (EXCEPT THE NORTH 15 ACRES THEREOF AND EXCEPT THE EAST 33 FEET THREOF TAKEN FOR STREET) OF THE NORTHEAST 1/4 OF SECTION 4, TOWNSHIP 39 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS, ACCORDING TO THE PLAT THEREOF RECORDED ON JULY 31, 1924, AS DOCUMENT NUMBER 8534210.

ASSUMED MERIDIAN

SCALE: 1" =20'



LEGEND

FRS = FOUND RAILROAD SPIKE
FIP = FOUND IRON PIPE
FIR = FOUND IRON ROD
FIB = FOUND IRON BAR
FPK = FOUND PK NAIL
FCC = FOUND CUT CROSS
FN = FOUND CUT NOTCH
SIP = SET IRON PIPE
SCC = SET CUT CROSS
SPK = SET PK NAIL
REC = RECORD INFORMATION
MEAS = MEASURED INFORMATION
CALC = CALCULATED INFORMATION
TF = TOP OF FOUNDATION
FF = FINISHED FLOOR
FFC = FINISHED FLOOR GARAGE
TC = TOP OF CURB
FL = FLOW LINE
INV = INVERT
CONC = CONCRETE
BIT = BITUMINOUS
UE = UTILITY EASEMENT
PUE = PUBLIC UTILITY EASEMENT
PU&DE = PUBLIC UTILITY & DRAINAGE EASEMENT
FC = FENCE CORNER
N = NORTH
S = SOUTH
E = EAST
W = WEST
= IRON PIPE
= CUT CROSS
= CHAIN-LINK FENCE
= WOOD FENCE
= IRON FENCE
= EASEMENT
= SETBACK LINE
= BUILDING
EM = ELECTRIC METER
GM = GAS METER
U.P. = UTILITY POLE
MW = MONITORING WELL

TOTAL AREA = 19,857.5 s.f. = 0.456 Acres +/-

GENERAL NOTES:

1.) CALL "J.U.L.I.E. @ #1-800-892-1234 PRIOR TO ANY DIGGING OR CONSTRUCTION.
(CALL "D.I.G.G.E.R." FOR THE CITY OF CHICAGO ONLY @ #312-744-7000)
2.) NO UNDERGROUND UTILITIES SHOWN HEREON
3.) REFER TO LOCAL ZONING AND SUBDIVISION ORDINANCES AND YOUR TITLE COMMITMENT FOR ANY PROPERTY RESTRICTIONS, SETBACKS AND EASEMENTS NOT SHOWN HEREON.
4.) THIS SURVEY IS NOT VALID WITHOUT THE SURVEYOR'S RAISED SEAL AFFIXED
5.) COMPARE ALL POINTS AND REPORT ANY DIFFERENCES TO SURVEYOR PRIOR TO CONSTRUCTION AT ONCE
6.) SURVEY SHOWN HEREON CONFORMS WITH A COMMITMENT FOR TITLE INSURANCE PREPARED BY CHICAGO TITLE INSURANCE COMPANY POLICY #1409 007755433, EFFECTIVE DATE: FEB. 17, 1999

TO: CHICAGO TITLE INSURANCE COMPANY
DETREX CORPORATION

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA / ACSM LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 2011, AND INCLUDES ITEMS 1, 2, 4, 7(b-1), 8, 9, 11(a), 13,14, 16,7, 18 & 21 OF TABLE A THEREOF, PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA, NSPS AND AND ACSM IN EFFECT ON THE DATE OF THIS CERTIFICATION. THE UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION , AS A LAND SURVEYOR IN THE STATE OF ILLINOIS, THE MAXIMUM RELATIVE POSITIONAL ACCURACY IS 0.02' FEET.

"THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY SURVEY, AS APPLICABLE TO PLATS OF SUBDIVISION" (ILCS 1270.56.B.6.P.)

DATE: APRIL 15, 2013

JOHN COLIN TOLINE, P.L.S. # 35-3078
MY COMMISSION EXPIRES NOVEMBER 30, 2014
PROFESSIONAL LAND SERVICES, L.L.C.

ILLINOIS PROFESSIONAL DESIGN FIRM REGISTRATION # 184-004648

SEAL
JOHN C. TOLINE
3078
PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS
FOREST PARK, ILLINOIS

COMMON ADDRESS: 2537 W. LEMOYNE AVENUE
MELROSE PARK, ILLINOIS

ORDER NO:C13-175.1S | SCALE: 1" =20' | FIELD COMPLETION DATE: APRIL 6, 2013

PREPARED FOR: DETREX CORPORATION
24901 NORTHWESTERN HWY. STE. 410
SOUTHFIELD, MICHIGAN 48075

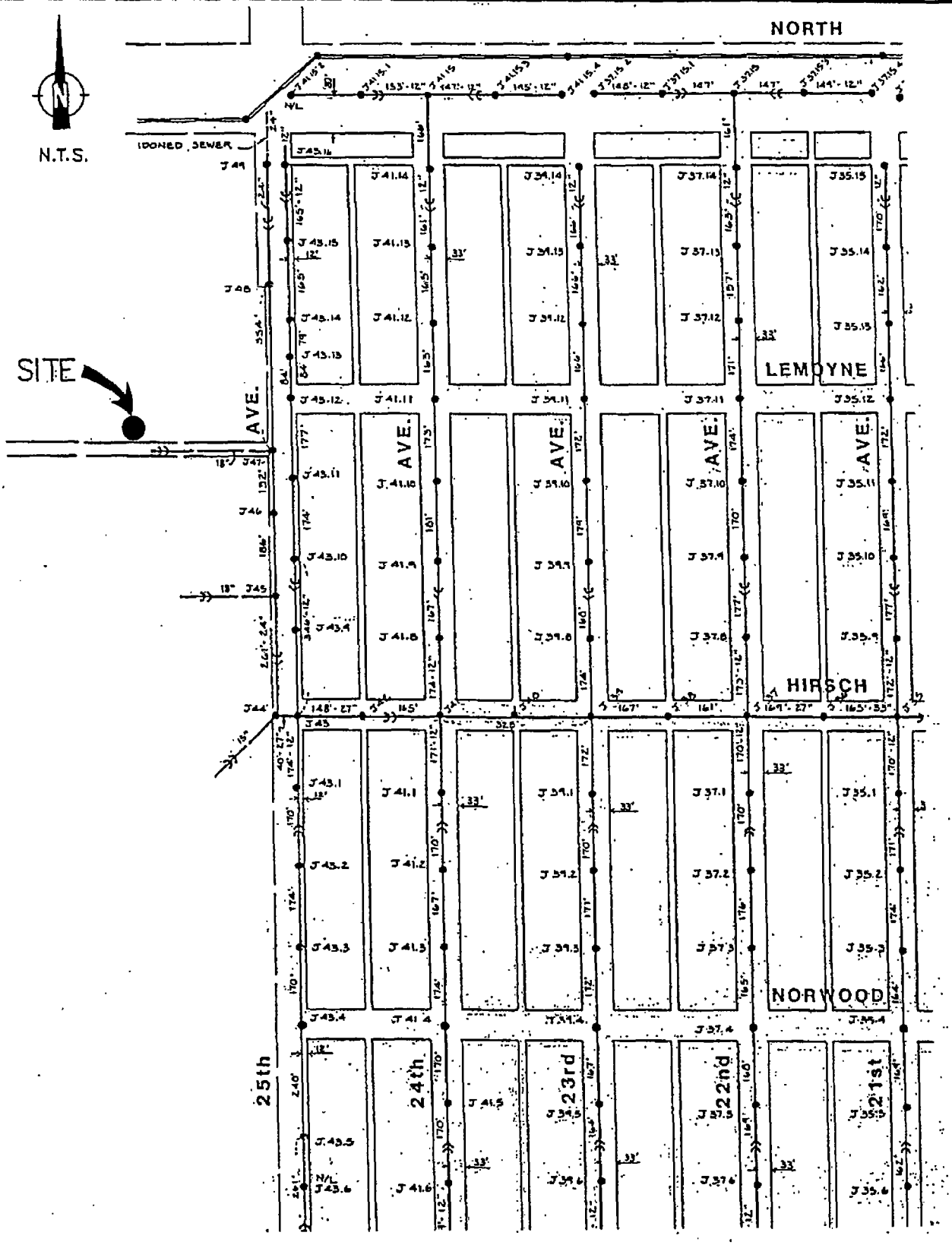
REVISIONS:

PROFESSIONAL LAND SERVICES, L.L.C.
LAND SURVEYING AND MAPPING
7518 W. MADISON AVE., STE. A - FOREST PARK, IL. 60130
PHONE: 708.488.1733 FAX: 708.488.1765 E-MAIL: prolandsurv@sbcglobal.net

RESIDENTIAL ▪ COMMERCIAL ▪ TOPOGRAPHIC ▪ CONSTRUCTION ▪ CONDOS ▪ ALTA ▪ MUNICIPAL ▪ ENVIRONMENTAL

Attachment B-8
Sewer Locations

ATTACHMENT B-8

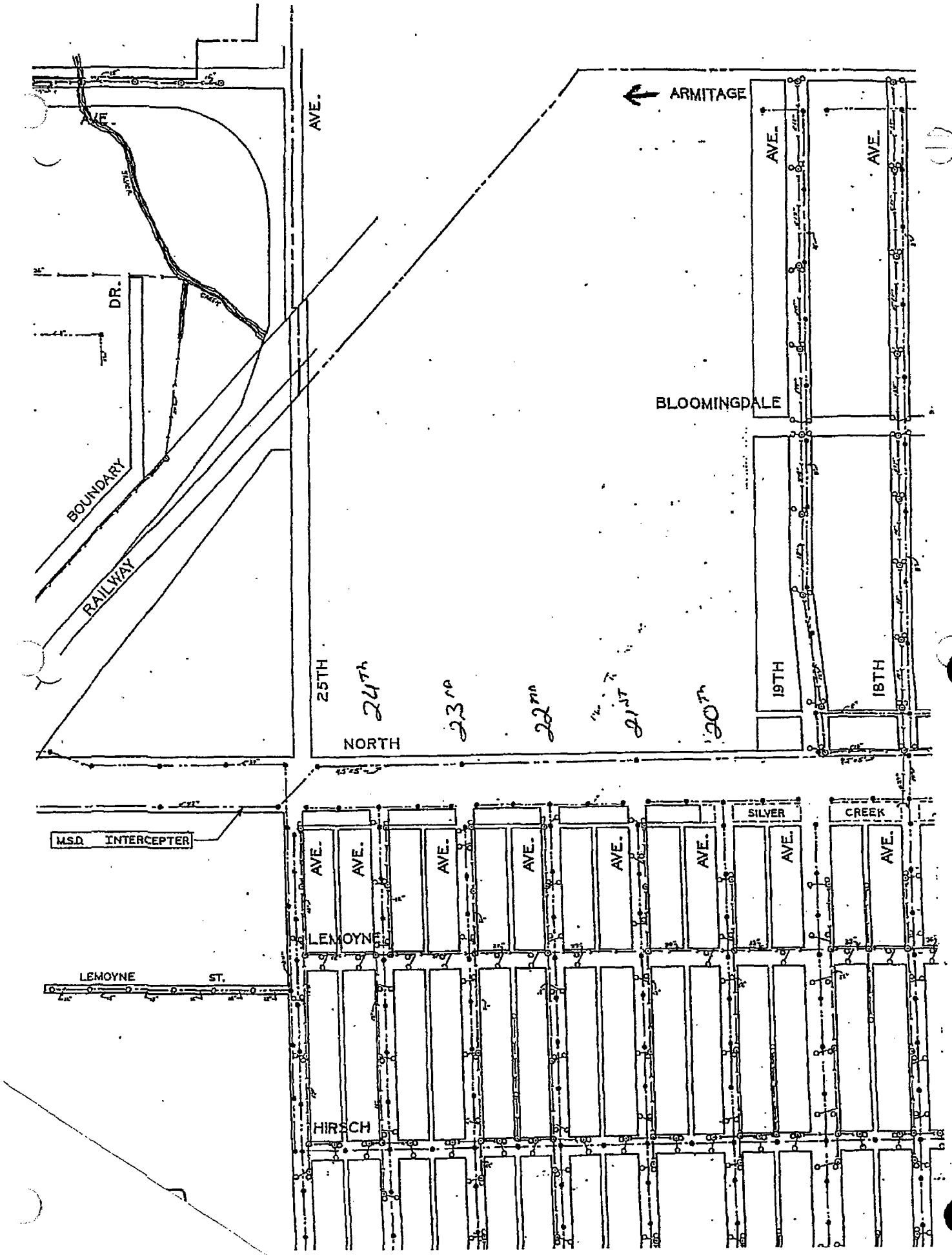


NOTE: SEWER IS STORM AND SANITARY COMBINED

SEWER LOCATIONS

Melrose Park, Illinois Facility

REVISION 91-2 (07/19/91)


ARMITAGE
AVE.
AVE.
AVE.
AVE.
DR.
BLOOMINGDALE
BOUNDARY
RAILWAY
25TH
24th
23rd
22nd
21st
20th
19TH
18TH
NORTH
M.S.D. INTERCEPTER
SILVER
CREEK
AVE.
AVE.
AVE.
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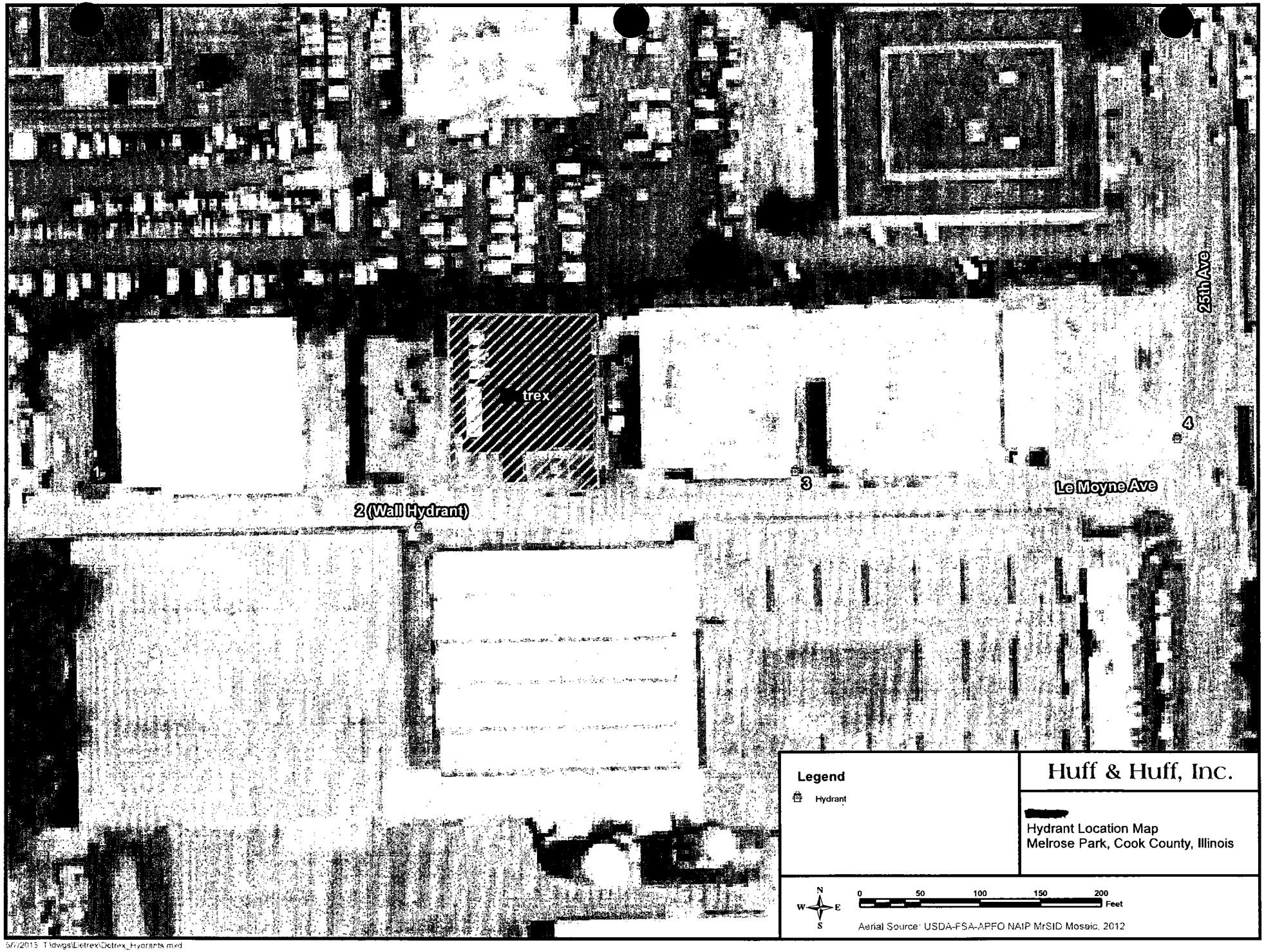
AVE.
AVE.
AVE.
LEMOYNE
LEMOYNE
ST.
HIRSCH

Attachment B-9
Hydrant Locations



Huff & Huff, Inc.

[redacted]

Hydrant Location Map
Melrose Park, Cook County, Illinois

5/7/2013 T:\dwgs\Letrex\Letrex_Hydrants.mxd

TABLE OF CONTENTS

GROUNDWATER MONITORING 1
E.1 EXEMPTION FROM GROUNDWATER PROTECTION REQUIREMENTS ... 3
E.2 INTERIM STATUS GW MONITORING 3
E.3 HISTORICAL HYDROGEOLOGICAL SUMMARY 3
E.4 TOPOGRAPHICAL MAP REQUIREMENTS 3
E.5 CONTAMINANT PLUME DESCRIPTION 3
E.6 DETECTION MONITORING PROGRAM 3
E.7 COMPLIANCE MONITORING PROGRAM 3
E.8 CORRECTIVE ACTION PROGRAM 4
E.9 REPORTING REQUIREMENTS 4
E.10 DESCRIPTION OF CORRECTIVE ACTION FOR SWMUs 4

E.1 EXEMPTION FROM GROUNDWATER PROTECTION REQUIREMENTS

An exemption from the Groundwater (GW) monitoring requirements of 35 IAC 703.185 and 724.190(b) is not being sought as this application is only related to Solid Waste Management Units (SWMUs) and not regulated units.

E.2 INTERIM STATUS GW MONITORING

Exemptions from interim status GW monitoring is not being sought as monitoring wells (MWs), both on and off site of the subject Property, have already been installed to address releases from Solid Waste Management Units (SWMUs) and not regulated units.

E.3 HISTORICAL HYDROGEOLOGICAL SUMMARY

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, a Hydrological discussion related to SWMUs is provided in Section K.

E.4 TOPOGRAPHICAL MAP REQUIREMENTS

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, the topographical mapping requirements for this application are presented in section B.

E.5 CONTAMINANT PLUME DESCRIPTION

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, a Hydrological discussion related to SWMUs is provided in Section K.

E.6 DETECTION MONITORING PROGRAM

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, a GW detection monitoring program related to SWMUs is discussed in Section K.

E.7 COMPLIANCE MONITORING PROGRAM

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, a GW detection monitoring program related to SWMUs is discussed in Section K.

E.8 CORRECTIVE ACTION PROGRAM

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, corrective action for the SWMUs is discussed in Section K.

E.9 REPORTING REQUIREMENTS

This section is not applicable. This permit application is associated with the SWMUs and not regulated units; however, Section K does discuss the correspondence between IEPA and Detrex (former owner and operator of the site) inclusive of various GW monitoring reports.

E.10 DESCRIPTION OF CORRECTIVE ACTION FOR SWMUs

Greater details related to corrective actions for the SWMUs are discussed in Section K. In general the corrective action will involve remediation of soils at the site that are above Csat conditions and then perform Monitored Natural Attenuation (MNA) via the monitoring well network set up as part of a Groundwater Management Zone (GMZ).

SECTION I

CLOSURE AND POST-CLOSURE REQUIREMENTS

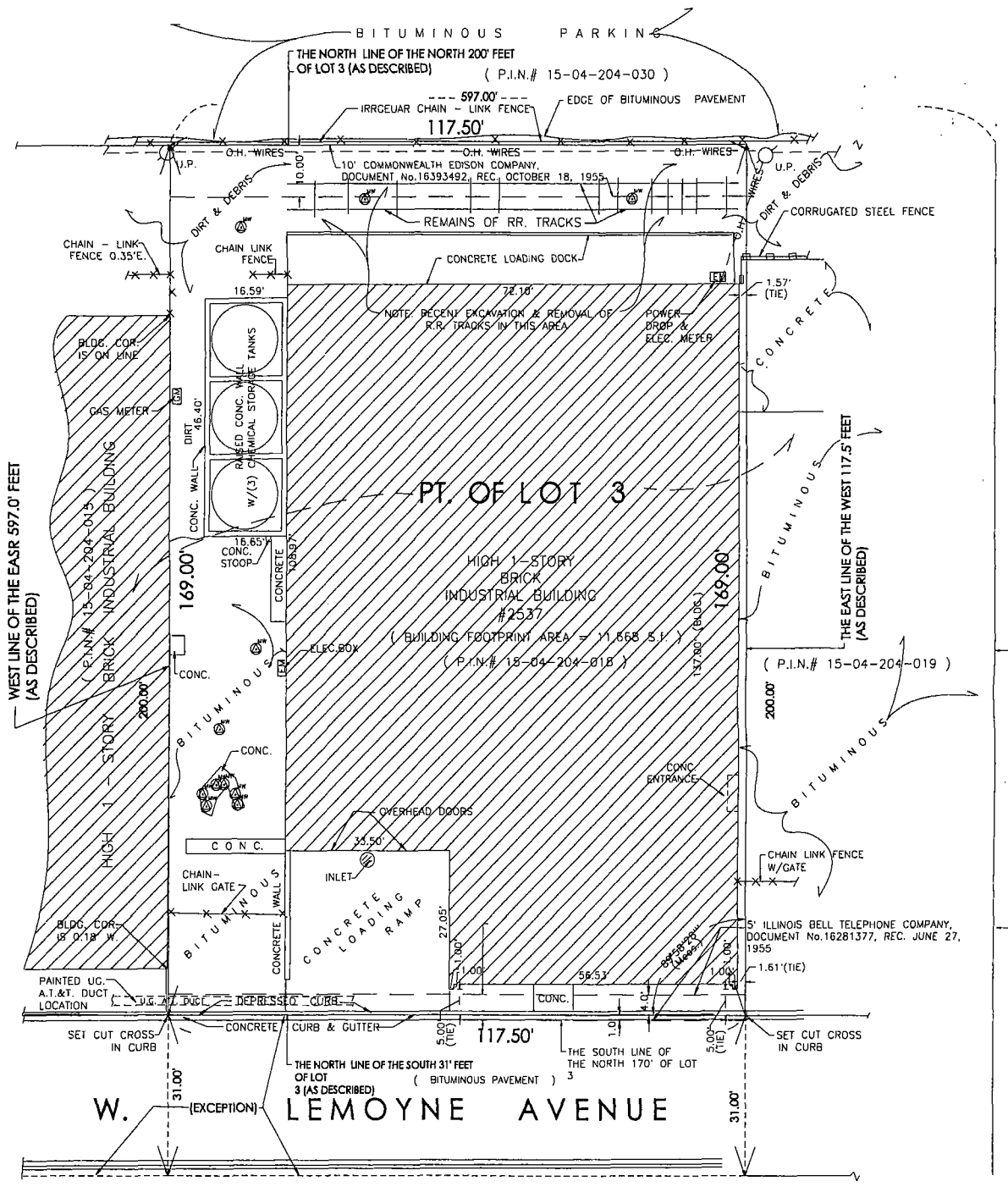
ALTA / ACSM LAND TITLE SURVEY

OF

THE WEST 117.5 FEET OF THE EAST 597 FEET OF THE NORTH 200 FEET (EXCEPT THE SOUTH 31 FEET THEREOF DEDICATED FOR STREET) OF LOT 3 IN OWNER'S DIVISION OF THE EAST 70 ACRES (EXCEPT THE NORTH 15 ACRES THEREOF AND EXCEPT THE EAST 33 FEET THREOF TAKEN FOR STREET) OF THE NORTHEAST 1/4 OF SECTION 4, TOWNSHIP 39 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS, ACCORDING TO THE PLAT THEREOF RECORDED ON JULY 31, 1924, AS DOCUMENT NUMBER 8534210.

ASSUMED MERIDIAN

SCALE: 1" =20'



LEGEND

FRS = FOUND RAILROAD SPIKE
FIP = FOUND IRON PIPE
FIR = FOUND IRON ROD
FIB = FOUND IRON BAR
FPK = FOUND PK NAIL
FCC = FOUND CUT CROSS
FN = FOUND CUT NOTCH
SIP = SET IRON PIPE
SCC = SET CUT CROSS
SPK = SET PK NAIL
REC = RECORD INFORMATION
MEAS = MEASURED INFORMATION
CALC = CALCULATED INFORMATION
TF = TOP OF FOUNDATION
FF = FINISHED FLOOR
FFG = FINISHED FLOOR GARAGE
TC = TOP OF CURB
FL = FLOW LINE
INV = INVERT
CONC = CONCRETE
BIT = BITUMINOUS
UE = UTILITY EASEMENT
PUE = PUBLIC UTILITY EASEMENT
PU&DE = PUBLIC UTILITY & DRAINAGE EASEMENT
FC = FENCE CORNER
N = NORTH
S = SOUTH
E = EAST
W = WEST
= IRON PIPE
= CUT CROSS
= CHAIN-LINK FENCE
= WOOD FENCE
= IRON FENCE
= EASEMENT
= SETBACK LINE
= BUILDING
EM = ELECTRIC METER
GM = GAS METER
U.P. = UTILITY POLE
MW = MONITORING WELL

EXAMPLE

FOR INFORMATION ONLY

TOTAL AREA = 19,857.5 s.f. = 0.456 Acres +/-

GENERAL NOTES:

1.) CALL "J.U.L.I.E. @ #1-800-892-1234 PRIOR TO ANY DIGGING OR CONSTRUCTION. (CALL "D.I.G G.E.R." FOR THE CITY OF CHICAGO ONLY @ #312-744-7000)
2.) NO UNDERGROUND UTILITIES SHOWN HEREON
3.) REFER TO LOCAL ZONING AND SUBDIVISION ORDINANCES AND YOUR TITLE COMMITMENT FOR ANY PROPERTY RESTRICTIONS, SETBACKS AND EASEMENTS NOT SHOWN HEREON.
4.) THIS SURVEY IS NOT VALID WITHOUT THE SURVEYOR'S RAISED SEAL AFFIXED
5.) COMPARE ALL POINTS AND REPORT ANY DIFFERENCES TO SURVEYOR PRIOR TO CONSTRUCTION AT ONCE
6.) SURVEY SHOWN HEREON CONFORMS WITH A COMMITMENT FOR TITLE INSURANCE PREPARED BY CHICAGO TITLE INSURANCE COMPANY POLICY #1409 007755433, EFFECTIVE DATE: FEB. 17, 1999

TO: CHICAGO TITLE INSURANCE COMPANY
DETREX CORPORATION

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA / ACSM LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 2011, AND INCLUDES ITEMS 1, 2, 4, 7(b-1), 8, 9, 11(a), 13, 14, 16, 17, 18 & 21 OF TABLE A THEREOF, PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA, NSPS AND AND ACSM IN EFFECT ON THE DATE OF THIS CERTIFICATION, THE UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR IN THE STATE OF ILLINOIS, THE MAXIMUM RELATIVE POSITIONAL ACCURACY IS 0.02' FEET.

"THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY SURVEY, AS APPLICABLE TO PLATS OF SUBDIVISION" (ILCS 1270.56.B.6.P.)

DATE: APRIL 15, 2013

JOHN COLIN TOLINE, P.L.S. # 35-3078
MY COMMISSION EXPIRES NOVEMBER 30, 2014
PROFESSIONAL LAND SERVICES, L.L.C.

ILLINOIS PROFESSIONAL DESIGN FIRM REGISTRATION # 184-004648

SEAL
JOHN C. TOLINE 3078 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS FOREST PARK, ILLINOIS

COMMON ADDRESS: 2537 W. LEMOYNE AVENUE
MELROSE PARK, ILLINOIS

ORDER NO:C13-175.1S | SCALE: 1" =20' | FIELD COMPLETION DATE: APRIL 6, 2013

PREPARED FOR: DETREX CORPORATION
24901 NORTHWESTERN HWY. STE. 410
SOUTHFIELD, MICHIGAN 48075

REVISIONS:

PROFESSIONAL LAND SERVICES, L.L.C.
LAND SURVEYING AND MAPPING
7518 W. MADISON AVE., STE. A - FOREST PARK, IL. 60130
PHONE: 708.488.1733 FAX: 708.488.1765 E-MAIL: prolandsurv@sbcglobal.net

RESIDENTIAL ▪ COMMERCIAL ▪ TOPOGRAPHIC ▪ CONSTRUCTION ▪ CONDOS ▪ ALTA ▪ MUNICIPAL ▪ ENVIRONMENTAL

TABLE OF CONTENTS

Page

I.1 CLOSURE PLAN [35 IAC 703.183(m), 724.212] 4
I.1.1 Closure Performance Standard [35 IAC 724.211] 4
I.1.2 Maximum Operations and Waste Inventory [35 IAC 724.212(b)(2&3)] 4
1.1.3 Partial Closure Activities [35 IAC 724.212(b)(1) and (2)] 4
I.1.4 Closure methods [35 IAC 724.212(b)(3)] 4
I.1.5 Removal and Decontamination Procedures [35 IAC 724.212(b)(4)] 4
I.1.6 Other Activities [35 IAC 724.212(b)(5)] 5
I.1.8 Closure Schedule [35 IAC 724.212(b)(6)] 5
I.1.9 Expected year of final closure [35 IAC 724.213] 5
I.2 POST-CLOSURE PLAN [35 IAC 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c)] 5
I.3 SURVEY PLAT [35 IAC 724.216] 6
I.4 NOTICE IN DEED AND CERTIFICATION [35 IAC 703.183(n), 724.216, 724.217(c), 724.219] 6
I.5 CORRECTIVE MEASURES COST ESTIMATE [35IAC 703.183(o), 724.242] 6
I.6 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE [35 IAC 703.183(o), 724.243] 7
I.7 POST-CLOSURE COST ESTIMATE [35 IAC 703.183(p), 724.244] 7
I-8 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE [35 IAC 703.183(p), 724.245] 7
I-9 LIABILITY REQUIREMENTS [35 IAC 703.183(q), 724.247] 7
I-10 STATE MECHANISMS 7

LIST OF ATTACHMENTS

Attachment I-1 Site Survey
Attachment I-2 IEPA site inspection November 2012
Attachment I-3 Corrective Measures Cost Estimate
Attachment I-4 Financial Assurance Mechanism
Attachment I-5 Liability Insurance

SECTION I

POST-CLOSURE REQUIREMENTS
[35 IAC 724.217 through 724.220]

This section identifies operational activities, which are associated with the Corrective Measures (CM) that will follow closure of the Treatment, Storage, and Disposal facility (TSDF). After completing closure of the regulated storage unit, corrective actions related to remediation of soils and associated groundwater at the site will commence. It is not expected that a post-closure plan will be needed as it is the intent to remediate all contaminated soils to below the required treatment level.

A copy of the approved CM plan (CMP) will be maintained on-site or with the entity that is physically performing the activities at this site.

Upon completion of CM activities a certification will be submitted to the IEPA verified by both the owner/operator and an independent registered professional engineer that the remedial work has been done in accordance with the specifications in the approved CMP.

I.1 CLOSURE PLAN
[35 IAC 703.183(m), 724.212]

I.1.1 Closure Performance Standard
[35 IAC 724.211]

This section is not applicable as this application is related to Corrective Measure (CM) activities to deal with contamination associated with various Solid Waste Management Units (SWMUs). Physical closure of operational units will be completed prior to the end of 2013 and before implementation of the CM plan.

A CM Plan will be provided to the IEPA for review and approval to address contaminated soils and groundwater (GW) associated with releases at the site. Remediation will be done to ensure compliance with the treatment requirements specified in IEPA's letter of July 9, 2009 (B-113-CA 8&9).

I.1.2 Maximum Operations and Waste Inventory
[35 IAC 724.212(b)(2&3)]

This section is not applicable as the only waste generated during CMs will be overburden associated with the treatment of soils at the site.

1.1.3 Partial Closure Activities
[35 IAC 724.212(b)(1) and (2)]

Final closure of the site is being sought; as such activities associated with partial closure will not be addressed.

I.1.4 Closure methods
[35 IAC 724.212(b)(3)]

The methods used to address post closure at this site will be addressed in greater detail in the Corrective Measures Plan and any addendums.

I.1.5 Removal and Decontamination Procedures
[35 IAC 724.212(b)(4)]

The CM plan will specify the method used to treat soils and decontaminate the equipment used during remedial process.

I.1.6 Other Activities
[35 IAC 724.212(b)(5)]

Upon completion of the remediation post closure care will not be required. The requirement for continued groundwater monitoring will be addressed as part of the Groundwater Management Zone (GMZ).

I.1.7 Unit Specific Closure Activities
[35 IAC 724.278]

This section is not applicable as all operational units will have already been closed.

In addition tanks (35 IAC 724.297, 724.410), Waste Piles (35 IAC 703.204(h), 724.358), Surface Impoundments (35 IAC 703.203(f), 724.328), incinerators (35 IAC 724.451), Land Treatment Facilities (35 IAC 724.380, 724.212) and Disposal Units (35 IAC 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.328(a)(2), 724.328(c)(1)(A), 724.358(c), 724.410(a)) were never used to handle hazardous wastes. As such closure related activities are not required.

I.1.8 Closure Schedule
[35 IAC 724.212(b)(6)]

A proposed closure schedule for treatment of impacted soils will be provided with the CMP. A copy of the plan will be provided under separate cover.

I.1.9 Expected year of final closure
[35 IAC 724.213]

It is anticipated that final closure of this site will occur in 2014 after completing the CMP and submitting the corresponding report.

I.2 POST-CLOSURE PLAN
[35 IAC 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c)]

Post-closure care will not be required beyond completion of the CMP and GMZ.

I.3 SURVEY PLAT
[35 IAC 724.216]

Attachment I-1 contains a recent survey done for this site. Upon completion of the CMP, and if required as part of a deed restriction, the survey will be updated to include any areas subject to restrictions. The survey will be prepared and certified by a professional land surveyor using the certification wording as described in 35 IAC 702.126(d)(1).

I.4 NOTICE IN DEED AND CERTIFICATION
[35 IAC 703.183(n), 724.216, 724.217(c), 724.219]

No later than 60 days after certification of closure and completion of remedial activities the owner will record a notation on the deed, or on some other instrument that is normally examined during title search, which will in perpetuity notify any potential purchaser of the property that the land has been used to manage hazardous wastes, that its use is restricted pursuant to this Subpart G, and that the survey plat and record of the type and location of hazardous wastes remaining at the facility required by subsection (a) of this Section and Section 724.216 have been filed with the Agency, the County Recorder and any local zoning authority or authority with jurisdiction over local land use.

The owner will also Submit a certification to the Agency, signed by the owner, that the owner has recorded the notation specified in subsection (b)(1) of this Section, including a copy of the document in which the notation has been placed, to the Agency

I.5 CORRECTIVE MEASURES COST ESTIMATE
[35IAC 703.183(o), 724.242]

As of the application of this permit, all operations have ceased at the regulated facility and all wastes associated with former operations have been removed from the site. Documentation of the cessation of operations and removal of waste is provided in Attachment I-2, an IEPA inspection performed by Ms. Donna Czech on November 29, 2012. The current permit is currently undergoing closure, which should be completed prior to the end of the third quarter of 2013.

The total cost for implementation of the CMP is estimated at $ 194,883.95 (2013 dollars). Attachment I-3 provides a breakdown of the cost estimate. Cost estimates are based on the use of third parties to complete all CM activities. Activities include removal of concrete, treatment of soils and the placement of any post treatment caps.

The cost estimate assumptions made are:

1. The majority of treated soils will remain on site. Some excess treated soils will be used to backfill the former loading/unloading area and the rail siding.
2. Residual treated soils (fluff) will be transported off-site to a permitted facility in accordance with all State and Federal regulations.

3. Concrete is assumed to be a non-hazardous waste unless testing indicates otherwise.
4. Costs are based on 2013 year costs. All labor rates reflect third party commercial rates and include fringe benefits, payroll burden and taxes.
5. Total costs include administrative and miscellaneous operating costs.

This closure cost estimate will be maintained at the site or with the contractor performing the Corrective Measure activities. It will be revised whenever a change in the closure plan affects the cost of closure or if required by pertinent regulations.

The need for annual updates to the closure cost estimate is not anticipated. However, in the event that the CMP is not fully implemented by the end of calendar year 2013, a revised closure cost estimate will be generated to account for the work already done to date.

I.6 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE

[35 IAC 703.183(o), 724.243]

Financial assurance for CM costs is provided by an appropriate mechanism as found under 35 IAC 724.243. A copy of the mechanism is provided in Attachment I-4.

I.7 POST-CLOSURE COST ESTIMATE

[35 IAC 703.183(p), 724.244]

Since all soils will be treated to below applicable remediation goal criteria, there is no need for a post CM cost estimate.

I-8 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE

[35 IAC 703.183(p), 724.245]

Since all soils will be treated to below applicable criteria, there is no need for a post CM financial assurance.

I-9 LIABILITY REQUIREMENTS

[35 IAC 703.183(q), 724.247]

A copy of the current liability mechanism in compliance with 35 IAC 724.247, associated with the closure of the former hazardous waste management unit, is included in Attachment I-5.

I-10 STATE MECHANISMS

There is no anticipation the state will need to assume the responsibility for complying with the CMP.

Attachment I-1

Site Survey

Attachment I-2

IEPA site inspection letter

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

847/294-4000
847/294-4018 (Fax)

RECEIVED
DEC 13 REC'D
DETREX CORPORATION

DEC 06 2012

Detrex Corporation
Attn: David Craig
24901 Northwestern Highway, Suite 410
Southfield, Michigan 48075

Re: 0311860003--Cook County
Detrex Corporation
ILD074424938
Compliance File

Dear Mr. Craig:

On November 29, 2012, an inspection of the above referenced site was conducted by Donna Czech representing the Illinois Environmental Protection Agency. The purpose of this inspection was to determine the site's compliance with the Illinois Environmental Protection Act and 35 Illinois Administrative Code Part 722, Subparts A through G; Part 723, Subparts A through C; Part 724, Subparts A through E and I; Part 728, Subparts A through E; and Part 733, Subparts A and B. In addition, your compliance with the provisions of your RCRA Part B permit(s) was also evaluated.

No violations were noted at the time of this inspection. For your information, a copy of the inspection report is enclosed.

Please contact Donna Czech at 847/294-4067 if you have any questions regarding this inspection.

Sincerely,

Charles T. Grigalauski, Regional Manager
Field Operations Section
Bureau of Land

CTG:DJC:kp:Craig.ltr.4

Enclosure

cc: Bureau of Land File
Des Plaines File

COMPLETED DATE: 12/6/12

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF LAND / FIELD OPERATIONS SECTION

RCRA INSPECTION REPORT

GENERAL FACILITY INFORMATION

USEPA ID #:	ILD074424938			BOL ID #:	0311860003
Facility Name:	Detrex Corporation			Phone #:	None
Location	2537 LeMoyne Avenue			County:	Cook
City:	Melrose Park	State:	Illinois	Zip Code:	60160
Region:	Des Plaines	Inspection Date:	11/29/12	Time:	9:45am - 10:10am
Weather:	40 F				

FACILITY TYPE

Notified As:	G, Trans, S	Regulated As:	G, (S)

INSPECTION TYPE

CEI:	☒	GME:	☐	OAM:	☐	NRR:	☐	CSE:	☐	CAO:	☐	FUI to:	
FCI (Other):												CCI:	☐ CSI: ☐

NOTIFICATION DATES (EPA 8700-12)

Initial:	11/18/80	Subsequent:	4/30/02

PART A PERMIT DATES (EPA 3510-3 OR EPA 8700-23)

Initial:	Amended:	Withdrawn:

PART B PERMIT

(Check one if applicable) Application Submitted?	☐	Permit Issued?	☒	Date:	10/9/03

ACTIVE ENFORCEMENT

Date facility referred to:	USEPA:	IAGO:	County State's Attorney:

ACTIVE ENFORCEMENT ORDERS

CACO:	CAFO:	Federal Court Order:
Consent Decree:	IPCB Order:	State Court Order:

TSD Facility Activity Summary

Activity by Process Code	On Part A?	On Part B?	Activity ever done?	Closed?	Being done during inspection?	Exempt per 35 IAC Sec:
S01	☒	☒	☒	☐	☐	N/A
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	

Owner				Operator			
Name:	Detrex Corporation			**Name:**	Detrex Corporation		
Address:	24901 Northwestern Hwy., Suite 410			**Address:**	2537 LeMoyne Avenue		
City:	Southfield			**City:**	Melrose Park		
State:	Michigan	**Zip Code:**	48075	**State:**	Illinois	**Zip Code:**	60160
Phone #:	248/358-5800			**Phone #:**	None		

Person(s) Interviewed	Title	Phone #
David Craig	Manager, Environmental & Safety Compliance	248/358-5800

Inspection Participants	Agency/Bureau	Phone #
Donna Czech*	IEPA/BOL	847/294-4000

***Report prepared by this person.**

Summary of Apparent Violations

Section	X	Section	X	Section	X
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐
	☐		☐		☐

X = Continuing Violations

0311860003 -- Cook County
Melrose Park/Detrex Corporation
ILD074424938

Author: Donna Czech

Narrative

Detrex Corporation (Detrex) distributes halogenated solvents to customers for degreasing applications (mainly metal cleaning). These solvents include trichloroethylene, perchloroethylene and methylene chloride. As an additional service to its customers, Detrex picks up spent halogenated solvents and accepts them at the Melrose Park facility for temporary storage. After completing the waste analysis protocol, the spent solvents are placed in the permitted container storage area (S01) located inside the building's warehouse. The waste is ultimately remanifested by Detrex and shipped to one of several designated facilities for reclamation or eventual disposal (e.g., fuel blending).

Hazardous Waste Management Unit

S01 – Container Storage Area
- located inside the warehouse
- concrete floor coated with a chemical–resistant sealant
- 3½-inch concrete dike for secondary containment
- maximum permitted volume of hazardous waste is 13, 200 gallons or 240 drums

Notes

Recently, Detrex made the decision to close the Melrose Park facility (the subject site) due to the extensive corrective action that has been ongoing at the site as a result of the RCRA Facility Investigation (RFI) conducted by Detrex in 1993. The RFI Phase I work plan submitted to the Agency by Detrex identified four solid waste management units (SWMUs) to be investigated:

a) Waste Handling Area (SWMU # 1)

b) Fuel Spill Area (SWMU # 2)

c) Tank Car Unloading Area (SWMU # 3)

d) Potential UST Area (SWMU # 4)

(See the attached drawing showing the location of these units within the facility.)

Over the past several years of operation, soil and groundwater on site and off site have been impacted during routine activities at the facility. Phase I, Phase II, and Phase III RFIs have been conducted by Detrex.

On-site and off-site impacts potentially attributable to the facility's operations may have come from releases occurring during transfers of the degreasing products. Products received at the facility have included: trichloroethylene (TCE); 1,1,1-trichloroethane (1,1,1-TCA); and tetrachloroethylene (PCE). Products have been unloaded from bulk truck tankers at the loading

dock at the southwestern corner of the building. Historically, products were also delivered by railroad tank cars and were unloaded from the railroad spur north of the building.

According to David Craig, the manager of environmental and safety compliance for Detrex, physical treatment will be used to remediate the impacted soil and groundwater at the subject site. Because it would be difficult to shore the existing building properly during the treatment process, the decision was made by Detrex to demolish the building. Eventually the vacant lot will be sold to the adjacent company for parking space. As a result of that decision, Parts Cleaning Technologies (PCT), the company that managed the solvent sale and distribution for Detrex at the subject site, was notified of the plans to terminate the RCRA Part B permit at the subject facility and to eventually demolish the building. In response to that decision, PCT moved its solvent sale and distribution business to Addison, Illinois approximately four weeks ago.

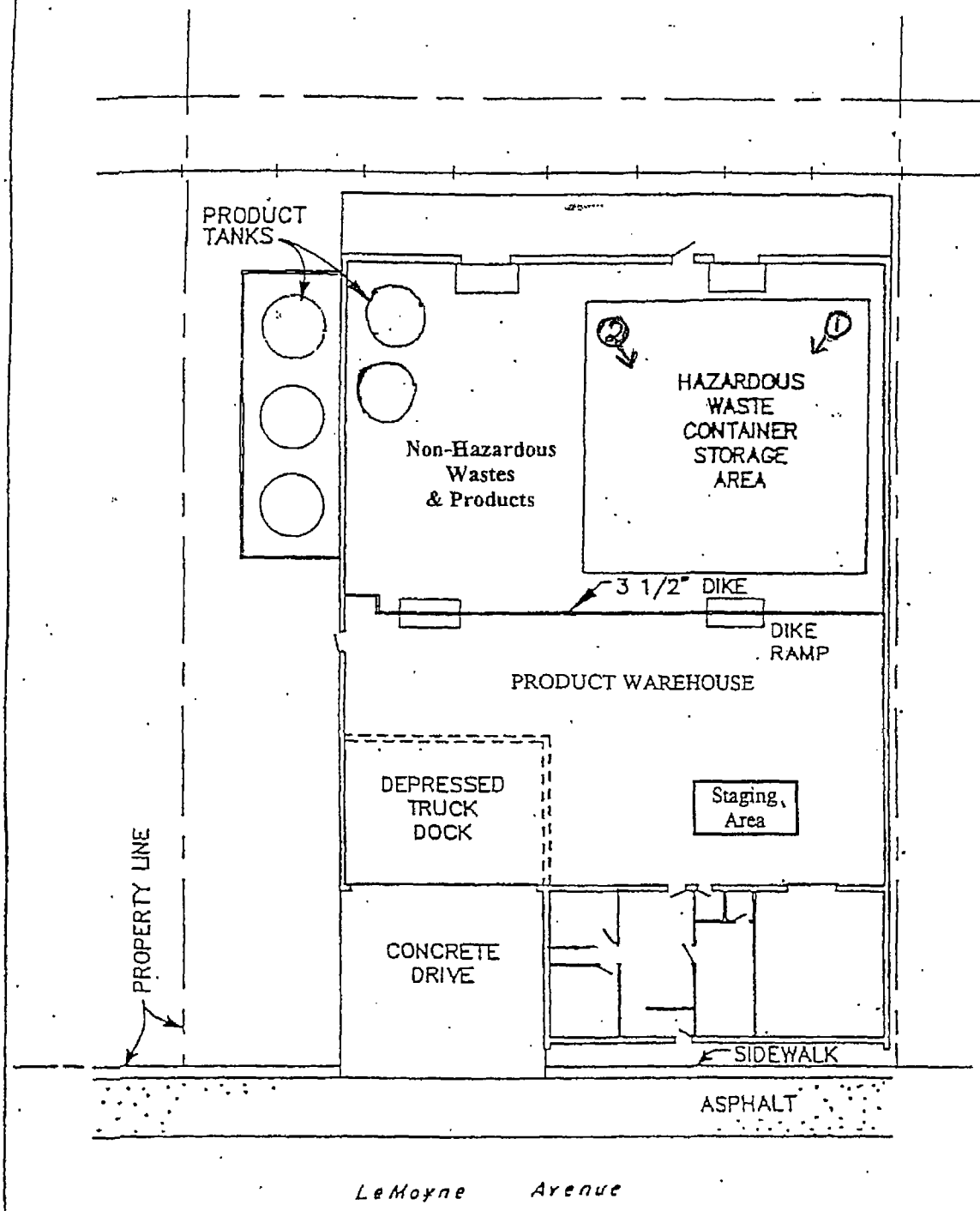
No waste was on site in the permitted container storage area (S01) at the time of this inspection. All of the furniture and equipment had already been moved out of the building. At the time of this inspection, the only activity occurring at the subject facility was confirmatory sampling pursuant to the ongoing RCRA corrective action. The only waste on site was investigation-derived waste such as soil cuttings and/or water. There were two drums of this waste on site inside the building.

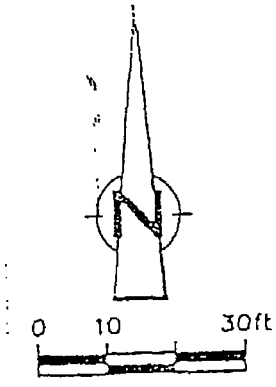
Mr. Craig stated that he will send a letter to the Agency's Bureau of Land Permit Section within the next few weeks to formally notify the Agency of Detrex's decision to go through RCRA closure for the S01 area on site. The current RCRA Part B permit was issued to Detrex by the Agency on October 9, 2003. The effective date of the permit was November 13, 2003 and the permit expires on October 9, 2013.

Detrex is currently operating as a generator (of cleanup-related waste) and as an inactive storage facility for hazardous waste. At the time of the inspection, Detrex appeared to be operating in compliance with the applicable RCRA regulations for generators of hazardous waste and the facility's RCRA Part B permit.

DJC:kp:0311860003.1

ATTACHMENT A-2





FACILITY PLAN
Detrex Corporation
Melrose Park, Illinois Facility

0311860003 - Cook County
Melrose Park / Detrex Corporation
ILD 074424938

November 29, 2012

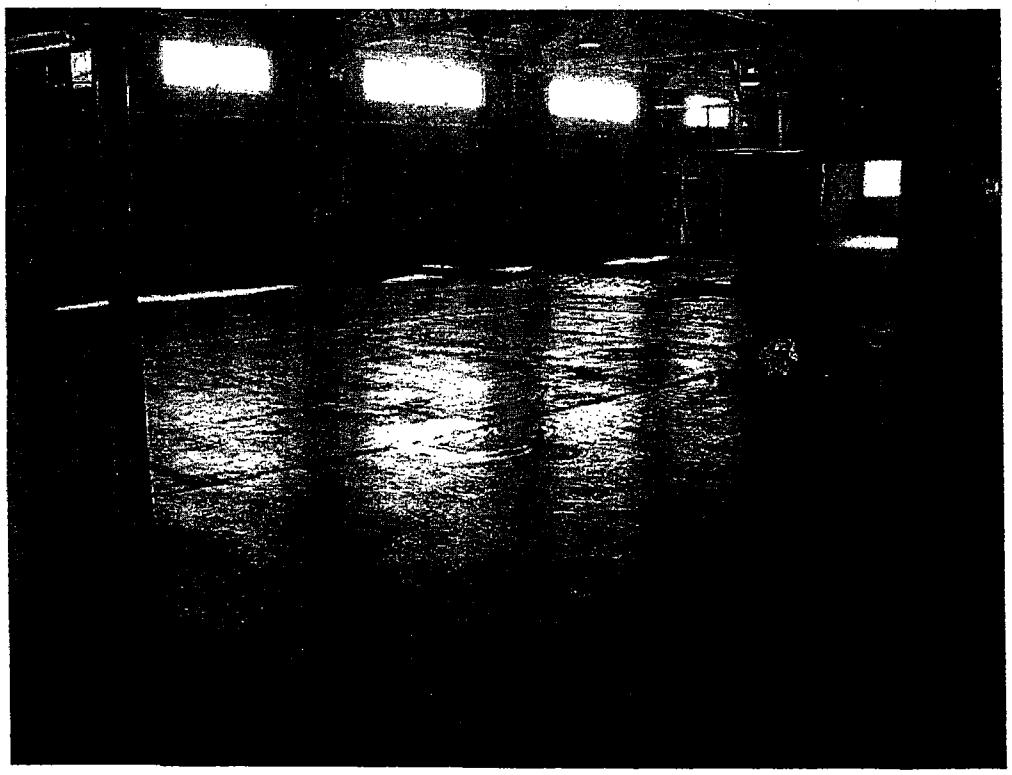
Illinois Environmental Protection Agency
Bureau of Land
Division of Land Pollution Control

LPC #0311860003 — Cook County
Melrose Park/Detrex Corporation
FOS File

DIGITAL PHOTOGRAPHS

File Names: 0311860003~11292012 -[Exp. #]. jpg

Date: 11/29/12
Time: 10:00am
Direction: Southwest
Photo by: D. Czech
Exposure #: 001
Comments: Hazardous Waste Container Storage Area (S01)



Date: 11/29/12
Time: 10:00am
Direction: Southeast
Photo By: D. Czech
Exposure #: 002
Comments: Hazardous Waste Container Storage Area (S01)

0311860003~11292012.doc

Attachment I-3

Corrective Measures Cost Estimate

Huff & Huff, Inc.
Proposal
6/21/2013

Prepared for: **Detrex**
Project: **2,300 cu yd at 3,123 mg/kg**

	Task	Labor	Reimbursables	Total
1	Meeting with IEPA	1,750.00	210.55	1,960.55
2	Supplemental Delineation	2,885.50	16,346.16	19,231.66
3	Soil Mixing	9,019.25	108,607.52	117,626.77
4	Shoring	1,361.25	25,018.08	26,379.33
5	CA-6 laid down	402.63	7,338.08	7,740.71
6	Post remediation Borings	2,813.00	9,818.08	12,631.08
7	RACR	5,846.00	142.10	5,988.10
8	Coordination with IEPA & Client	3,095.00	230.55	3,325.55
	Grand Total	**$ 27,172.63**	**$ 167,711.12**	**$ 194,883.75**

Attachment I-4

Financial Assurance Mechanism

Attachment I-5

Liability Insurance

The current certificate of liability insurance, provided by Detrex Corporation, expires on July 1, 2013. A new certificate will be provided shortly thereafter listing BOTH Detrex and TREX Properties, LLC as the insureds.

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

CHARTIS SPECIALTY INSURANCE COMPANY (1), (the "Insurer, of 175 WATER STREET (2)
NEW YORK, NY 10038 hereby certifies that is has issued liability insurance covering bodily injury

and property damage to DETREX CORPORATION, (the "insured"), of
24901 NORTHWESTERN HIGHWAY, SUITE 410 (3)
SOUTHFIELD, MI 48075 (4) in connection with the insured's obligation to demonstrate financial responsibility

under 35 Illinois Administrative Code Parts 724.247 or 725.247. the coverage applies at:

	Sudden Accidental Occurrences (6)	Nonsudden Accidental Occurrences (7)	Sudden and Nonsudden Accidental Occurrences (8)
USEPA I.D. No. ILD-07-442-4938 (5)			

Name DETREX CORPORATION, SOLVENTS & ENVIRONMENTAL SERVICES DIVISION

Address 2537 LEMOYNE AVENUE

City MELROSE PARK, IL 60160

USEPA I.D. No.

Name

Address

City

Please attach a separate page if more space is needed for all facilities.

The limits of liability are $2,000,000 (9) each occurrence and $4,000,000 (10) annual aggregate exclusive of legal defense costs. The coverage is provided under policy number PLS68022241 (11) issued on JUNE 28, 2012 (12).

The effective date of said policy is JULY 1, 2012 (13).

2. The Insurer further certifies the following with respect to the insurance and described in Paragraph 1:

   (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

   (b) The insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 35 Illinois Administrative Code 724.247(f) or 725.247.

   (c) Whenever requested by the Director of the Illinois Environmental Protection Agency (Illinois EPA), the Insurer agrees to furnish to the Director a signed duplicate original of the policy and all endorsements.

   (d) Cancellation of the insurance, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the 3expiration of 60 days after a copy of such written notice is received by the Director.

   (e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Illinois EPA Director.

I hereby certify that the Insurer is licensed by the Illinois Department of Insurance.

SIGNATURE

TYPE NAME
ANTONY CANTERNA

TITLE
REGIONAL MANAGER

AUTHORIZED REPRESENTATIVE OF
CHARTIS SPECIALTY INSURANCE COMPANY

ADDRESS OF REPRESENTATIVE
1300 EAST 9TH, CLEVELAND, OH 44114

The Agency is authorized to require that the insured submit this document under Illinois Complied Statutes, 1994, Chapter 415, Act 5, Section 21(f) (as amended). Failure to do so may result in a civil penalty against the insured of not to exceed $25,000 per day of violation. Falsification of this information by any person may constitute a Class 4 felony, and may also carry a fine of not to exceed $25,000 per days for the first offense. This form has been approved by the Forms Management Center.

TABLE OF CONTENTS

K-1 IDENTIFICATION OF SWMUS 3

K-2 CHARACTERIZATION OF THE SWMUS 3

K-3 CHARACTERIZATION OF RELEASES FROM SWMUS 4

K-4 INFORMATION REQUIRED FOR RENEWAL APPLICATIONS 5

K-4.1 USEPA OVERSIGHT 5
K-4.2 IEPA OVERSIGHT 5
K-4.2.1 Corrective Action Chronology 5
K-4.2.2 Corrective Action Correspondence with IEPA 5
K-4.2.3 SWMU information 5
Topography 6
Regional Geology 6
Site Geology 7
Regional Hydrogeology 7
Site Hydrogeology 8
Site investigation / remediation efforts 9
K-4.2.4 Corrective Action and Groundwater Monitoring Program 9
Description of Corrective Action Program 9
Construction Detail 10
Characterization and concentration limits of Contaminated GW 10
Corrective Action Effectiveness and Compliance Point 12
Alternate Concentration Limits 12
Corrective Action Plan 13
GW Monitoring Program Requirements and System 13
Description of Sampling and Analysis Procedures 13
Background quality and Statistical Evaluations 13
Evaluation of GW Surface 13
Extension of Compliance Period 13
Evaluation and Effectiveness of the CAP 13

LIST OF ATTACHMENTS

K-1	Facility Plan
K-2	Chronological List of Corrective Actions
K-3A	Correspondence from IEPA
K-3B	Correspondence to IEPA
K-4	2012 Semi-Annual GW Monitoring Reports
K-5	IEPA GMZ Approval letter
K-6	IEPA July 9, 2009 Letter (Log B-113-CA-8 and 9)
K-7	GW sampling methodology
K-8	MW Boring Logs and Well Completion Reports
K-9	Melrose Park Ordinances 321 and 509
K-10	2004 Water Well Survey

SECTION K
CORRECTIVE ACTIONS

This section of this RCRA Part B Permit Application provides a description of corrective action for the solid waste management units in operation at the Melrose Park, Illinois facility.

K-1 IDENTIFICATION OF SWMUs

The Solid Waste Management Units (SWMU's) identified by IEPA at the facility are:

SWMU1	Waste Handling Area (Loading/Unloading Area)
SWMU2	Fuel Spill Area
SWMU3	Tank car unloading area
SWMU4	UST

The facility plan in Attachment K-1 shows the relative location of the SWMUs. As the total site is less than one acre all SWMUs are within a few feet of each other.

K-2 CHARACTERIZATION OF THE SWMUs

SWMU 4: an Underground Storage Tank Area (UST Area) located on the west side of the Facility was identified during a visual site inspection (a standpipe was observed in an overgrown grass area to the immediate west of the outdoor virgin product tank containment area). Little is known about this UST as a search of Facility records did not provide any information. As such the dates of its operation, size, contents or purpose is unknown.

SWMU 3: The Tank Car Unloading Area was used beginning in 1974 until sometime in the late 1980s. It is an unpaved outdoor area measuring approximately 120 ft. by 30 ft. located on the north side of the Facility on a joint easement owned by the Railroad and Power Authority. The railway area serviced approximately seven small industrial users on the north side of LeMoyne Avenue.

The rail siding (tank car unloading area) is known to have had a release of halogenated solvents in the past prior to the onset of RCRA. The amount of release is unknown. While the exact dates the rail siding was in operation are unknown, this SWMU has not been in operation for over 20 years.

SWMUs 2: two 250-gallon aboveground fuel oil tanks located on the west side of the site were used to provide fuel oil for heat. The tanks were located in a continuously paved outdoor area measuring approximately 20 ft. by 10 ft. A release occurred during the filling of one of the tanks. The release was addressed in the early 1990s (soils removed and repaved)

and the tanks were removed from service. The spill originally stained a 3-ft by 2-ft area of asphalt.

SWMU1: the Waste Handling Area (Loading/Unloading Dock Area) is a paved area measuring approximately 60 feet by 35 feet located on the southwest corner of the building. The area was utilized for receiving bulk loads of halogenated solvents (product), receiving drums of permitted wastes, loading product into cargo tanks for distribution to customers, receiving miscellaneous supplies (such as empty drums) and loading trucks with drums of product and waste for off-site shipment. The area has been continuously paved since prior to the onset of active waste management operations.

This area was used from 1974 until the closure of operations on October 31, 2012.

K-3 CHARACTERIZATION OF RELEASES FROM SWMUs

All releases at the facility are associated with halogenated solvents, more specifically TCE, PCE and 111TCA. The SWMUs only represent very small areas on a site totaling 0.33 acres. SWMUs are not large enough to be evaluated as discrete exposure units; therefore, viewing contamination on a site-wide basis was deemed to be the most appropriate. In addition, the review of SWMUs was based on surface and subsurface, and saturated and unsaturated. This approach appeared appropriate and is consistent with approaches and requirements defined under 35 IAC part 742 (TACO).

SWMU4: there are no known releases from this UST. As previously noted, it was believed this storage tank was installed during the original construction of the site and was used to hold Fuel oil. Little else is known of this unit.

SWMU3: The area contains a concrete dock which was previously used for unloading of product transported to the site via rail car prior to the 1990s. The contents of the rail cars were transferred to one of three 20,000 gallon storage tanks located at the northwest corner of the property. Releases in this area are related to loading and unloading operations. Dates and amounts of release are unknown.

SWMU 2: The building was formerly heated by oil heaters. Two 250-gallon above ground fuel oil tanks were located on the west side of the facility. Inspection of the area indicated that during their use the tanks were overfilled and a limited quantity of fuel oil spilled down the building wall onto the ground. The spill spread to an area of approximately two feet by three feet on the asphalt.

In March of 1992 the area surrounding the visible staining on the asphalt was saw cut (measuring 43 inches by 16 feet) and excavated. Cleanup was confirmed in the field by visual examination and the use of a HNu photoionization detector. The soil beneath the asphalt was not impacted with the exception of a small 2-foot by 3-foot area immediately

adjacent to the wall. Material was excavated to a depth of approximately 10 inches in this area. After excavation, no detectable levels of organics were observed by the HNu. All excavated material was drummed and properly disposed.

SWMU1: A review of facility records documents one spill in the waste handling area of 111-TCA on August 23, 1985. The spill was reported to all appropriate agencies and measures were taken to minimize the extent of the spill. The total volume of spilled material was estimated at 1,100 gallons. It was estimated that all but approximately 50 gallons were collected during response actions.

K-4 INFORMATION REQUIRED FOR RENEWAL APPLICATIONS

K-4.1 USEPA oversight

This section is not applicable as USEPA has not been involved in the RCRA Facility Investigations or Corrective Measures for this location.

K-4.2 IEPA oversight

K-4.2.1 Corrective Action Chronology

Attachment K-2 provides a chronological listing of all corrective action efforts to date, inclusive of all reports.

K-4.2.2 Corrective Action Correspondence with IEPA

Work associate with site investigation and corrective actions have been ongoing since 1993. Attachment K-3 provides a chronological list of correspondence to and from IEPA along with a brief summary of the letters.

K-4.2.3 SWMU information

The status of each of the SWMUs have been addressed in detail in the various RFI reports submitted to IEPA, particularly the Tier I and Tier II reports originating in 1994 and 1996. A summary of this information was presented in sections K-1 through K-3. Attachment K-1 provides a scaled facility diagram showing the locations of the associated SWMUs.

Investigations for this site have been ongoing for over 20 years. The latest investigation was completed in November 2012. Standard geoprobe sampling and Membrane Interface Probe (MIP) sampling was used to help define the area of contaminated soils on site. The results of the investigation were presented in the Phase II Corrective Measures Plan report/workplan submitted to IEPA on February

14, 2013. Once approved additional soil samples will be collected to complete on site soil delineation. When the investigation is complete (and the approval is received to close out the former Hazardous Waste Storage Area) remediation of soils above concentrations defined by IEPA in their July 9, 2009 letter will begin.

As ongoing Corrective Actions will be associated with these areas a summary of the topography, geology and hydrogeology of the site and surrounding areas of Melrose Park is presented below.

Topography

The property is located in a relatively flat industrially zoned tract of land in the Village of Melrose Park. Attachment B-1 has a Figure taken from the United States Geological Survey (USGS) Quadrangle Map for the area. This shows the general topography surrounding the facility within a minimum 1,500 feet. Surface water drainage in the area is controlled by roadways and storm sewers as well as the railway tracks and siding. The railway siding behind the building is the topographic low point in the area. The topography of the Site and immediate vicinity is also provided in Attachment B-1. This survey was commissioned to satisfy the requirements of a previous Part B Permit Application. With the exception of the railway siding and a small area in the west side, the entire property is either covered by the building or paved.

Regional Geology

The site is located in a part of the Chicago Lake Plain physiographic province. This province is characterized by fine-grained silts and clays typical of glacial (till) or lake sedimentation. Deposition of these sediments occurred during the existence of Lake Chicago, which was a glacial lake formed after the retreat of the Wisconsin glacier approximately 12,000 years ago. Lake Chicago was more extensive than the present-day Lake Michigan; therefore, lacustrine deposits can be found in the Chicago area far beyond the present shoreline. Lake Chicago extended west to present day La Grange, Illinois; and south beyond Homewood and Lansing, Illinois; completely covering what is now Northwest Indiana, including the cities of Hammond and Gary, Indiana. It extended to near Elmhurst west of the site, or the Cook County/DuPage County border.

Surficial sediments vary in thickness and overlie a Silurian-age dolomite. The dolomite is variable in character and ranges from extremely argillaceous to exceptionally pure. Upper units of the dolomite contain reef structures set in well-bedded argillaceous to cherty dolomite. The lower dolomite consists mainly of bedded dolomite showing great lateral continuity. The dolomite dips toward the east-southeast at approximately 10 feet per mile.

Site Geology

Two stratigraphic units have been identified beneath the site. These two units are defined in descending order as (1) the Fill Unit and (2) the Silt and Clay Unit. The Fill Unit consists primarily of sand and gravel with varying amounts of silt. The Fill Unit is typically observed at the surface, ranging from 1 to 4 feet in thickness. Adjacent to building foundations, the Fill Unit consists of sand and gravel overlying silty clay, which in turn overlies a thin layer of sand. In the area of the railway bed, along the north side of the site, a 1-foot thickness of gravel fill is observed (former railroad ballast).

The Silt and Clay Unit consists primarily of fine-grained material of glacial origin. Based on the available data, the thickness is estimated to be 48 feet. The upper portion of the Silt and Clay Unit consists primarily of silty clay with lenses of clayey silt. The lower portion consists primarily of clayey silt. Beneath the site building, the upper portion of the Silt and Clay Unit consists of clay, with a silt/clay layer encountered beneath the clay. At this location, the lower portion of the Silt and Clay Unit consists primarily of clay. Clay is generally encountered to a depth of 26 feet below ground surface (bgs). In some locations, isolated silty clay, sandy clay, and sand lenses are encountered within the predominantly clay material. Regional geological data indicate that sand and gravel deposits within this unit are discontinuous.

Bedrock is encountered beneath the site at approximately 55 feet bgs and is expected to be present at depths varying from 50 to 100 feet bgs based on available regional data.

Regional Hydrogeology

The overburden in the Melrose Park area typically consists of unconsolidated glacial/lacustrine deposits. Although there are permeable units within these sediments, they are discontinuous. The water table in this area is typically encountered within 10 feet of ground surface. The vast number of individual lenses makes the unconsolidated sediments a significant aquifer unit. Locally, the unit is known as the Sand and Gravel Aquifer and it directly overlies the bedrock at depths in excess of 50 feet. Groundwater (GW) quality in the upper aquifer varies because the sand lenses are not interconnected. Dissolved solids typically range from 360 to 730 mg/L, and hardness typically ranges from 250 to 510 mg/L as calcium carbonate.

The Shallow Dolomite Aquifer (Silurian Dolomite) lies directly below the Sand and Gravel Aquifer and is considered to be hydraulically connected to it. At some locations the clay units within the Sand and Gravel Aquifer will represent significant barriers to downward percolation of precipitation; however, like the water bearing zones the clay units are not continuous. Water obtained from the Shallow Dolomite Aquifer generally exceeds the State of Illinois advisory level

for dissolved solids which range from 400 to 1,200 mg/L. Hardness values span a broad range from 200 to 700 mg/L as calcium carbonate.

Other deeper aquifers exist in the Chicago area; however, the two aquifers noted above are the aquifers of primary potential concern for this Site. The deeper aquifers are hydraulically separated from the upper aquifers by the Maquoketa Shale.

GW use in the Chicago area is relatively small as 97 percent of the water municipality's use is drawn from Lake Michigan which is about 10 miles away. Therefore, approximately 3 percent of Chicago's potable water is obtained from GW sources. The Village of Melrose Park has no records of any injection or withdrawal wells within 1,500 feet of the facility.

Site Hydrogeology

Data from various RFI investigations indicate the site is underlain by thin localized perched conditions in the Fill Unit underlain by a confining unit comprised of fine-grained clay and silt deposits. The perched water table was encountered at very shallow depths in the gravelly material of the Fill Unit and is underlain by fine-grained deposits of the Glaciolacustrine Unit.

Although a water table was encountered in the Glaciolacustrine Unit at depths ranging from 7 to 13 feet below ground surface (bgs), GW flow rates beneath the facility are considered to be low due to the inherent low hydraulic conductivity of the fine-grained deposits. Within the Glaciolacustrine Unit, the more active GW transport zone likely occurs in the upper 5 feet - 10 feet portion of this unit due to weathering and fracturing of the deposits in the upper regions.

The clay within the Glaciolacustrine Unit was observed to include thin (0.5 ft. - 3 ft.) isolated lenses of silty clay, sandy clay, and sand. The lenses appear to differ with respect to GW transport capability. A sandy clay lens encountered at 10.5 ft. bgs on the northeast side of the Facility was noted to be very moist; on the southwest side of the Facility, another sand lens was noted to be dry. These observations suggest that the sandy lenses within the Glaciolacustrine Unit do not exhibit vertical or lateral connection.

Analysis of the slug test data resulted in hydraulic conductivity values of ranging from 1.04E-06 ft. /min (2.05E-06 cm/sec) to 1.48E-06 ft. /min (2.92E-08 cm/sec). The geometric mean of the four samples was determined to be 3.32E-06 ft. /min (6.53E-08 cm/sec) which is within the expected range for the fine-grained lacusterine deposits present at the site.

Permeability test results for two samples collected from the silty clay material (BH14 and BH31) were 6.60E-07 ft. /min (1.30E-08 cm/sec) and 3.40E-05 ft./min (6.70E-07 cm/sec), respectively. Results for two samples collected from the predominantly

clay material (BH25 and BH29) were 9.64E-07 ft. /min (1.90E-08 cm/sec) and 4.87E-07 ft. /min (9.60 cm/sec), respectively. The geometric mean of the permeability test results was determined to be 1.80E-06 ft. /min (3.55E-08 cm/sec) and shows good correlation to the geometric mean from the slug test results.

Bedrock is expected to be present at depths greater than 50 ft. bls based on available regional data. Additional details regarding the site and local hydrogeology can be found in the Phase I and II reports for this site.

Site investigation / remediation efforts

Investigations at this site have been ongoing since December of 1993. The site and surrounding properties are fairly well characterized from the various soil and GW samples that have been collect. With on-site soils characterization of the

In June of 2011 a pilot vapor extraction system and oxidant injection wells were installed at the site in an attempt to treat a small east of the building near the product storage tanks. After 6 weeks it was determined that dewatering and fracturing of the clay was not occurring and as such the vapor extraction system was deemed as not being a viable means of removing contaminants. In addition, the amount of oxidant that could be fed into injection wells was also determined to be too little to make this a viable treatment option. However, as noted in greater detail in the Pilot summary report (03.15.12), DNAPL was discovered in some of the vacuum observation points during periods that the vacuum extraction system was operational. The amount of recoverable DNAPL was also not enough to consider modifying the vacuum extraction system as a collection method.

While a GW management zone (GMZ) has not formally been established, GW monitoring has been ongoing since 1995. GW monitoring reports are currently being submitted to IEPA on a semi-annual basis. Copies of the two most recent reports (calendar year 2012) are included in Attachment K-4 for review. As previously noted, these reports provide documentation of the analytical results of the GW monitoring program since its onset in 1995, a comparison to the Tier II Class II – GW Ingestion Exposure Route GW Remediation Objectives, the relative locations of the various active MWs, isoconcentration maps for select compounds, GW surface elevations and the methods used to collect and test the GW.

K-4.2.4 Corrective Action and Groundwater Monitoring Program

Description of Corrective Action Program

Focused soil remediation followed by Monitored Natural Attenuation (MNA) will be used as the corrective action for this site; the effectiveness will be monitored based on a groundwater management zone (GMZ - presented in Appendix F of the March 28, 2011 Site Activities Summary Report) which has been proposed and

accepted by IEPA. A copy of IEPA's acceptance letter for the GMZ is presented in Attachment K-5.

The MW network and the parameters to which the GMZ will be evaluated were established by IEPA in their July 9, 2009 letter (Log No B-113-CA-8 and 9). A copy of the letter is provided in Attachment K-6. Condition 20 established the chemicals of concern (COC) to be tested for as part of the monitoring program, while condition 21 established the compliance a compliance period time frame. A copy of the methodology used by Huff & Huff while collecting GW samples is provided in Attachment K-7.

The COCs required in the July 9, 2009 GW monitoring program requirements, and subsequently modified with the creation of the GMZ on June 19, 2013, are:

- Chloroethane (CB);
- Chloroform (CF);
- 1,1-dichloroethane (11 DCA);
- 1,1-dichloroethene (11DCE);
- cis- 1,2-dichloroethene (CIS);
- tetrachloroethene (PCE);
- 1,1,1-trichloroethane (TCA);
- Trichloroethene (TCE); and
- Vinyl chloride (VC).

MWs are currently sampled on a semi-annual basis in the second and fourth quarters of each year with reports submitted by the 15th of the month following the end of those quarters.

While the initial monitoring program involved ten MWs and subsequent addition of six wells, the current monitoring program is defined by a select set of wells which make up the effective boundary of the groundwater corrective action zone. Specific details related to the GMZ are found in Attachment K-5.

Construction Detail

All MWs were installed at locations in accordance with IEPA approved RFIWPs. Construction details for current MWs are located in Attachment K-8. The locations of the MWs can be found in the semi-annual reports in Attachment K-4.

Characterization and concentration limits of Contaminated GW

Results of the groundwater (GW) assessment activities were evaluated to determine the proper classification of the shallow groundwater at the site.

Per 35 Illinois Administrative Code (IAC) Section 620.201, all groundwater of the State is designated as either:

Class I: *Potable Resource Groundwater* (groundwater located 10 feet or more below land surface and within a minimum setback zone of a water supply well, within a unconsolidated sand and gravel deposits or a sandstone unit, or a geologic unit with a hydraulic conductivity of 1.0E-04 cm/sec.);

Class II: *General Resource Groundwater*;

Class III: *Special Resource Groundwater* (groundwater that is demonstrably unique or vital for a particularly sensitive ecological system); or

Class IV: *Other Groundwater* (groundwater within the zone of attenuation of non-hazardous waste landfills, within the point of compliance of a RCRA permitted unit, groundwater designated as exempt pursuant to the UIC regulations, groundwater that naturally contains total dissolved solid concentrations in excess of 10,000 mg/L, groundwater with contaminants present no farther than 25 feet from a non-regulated source, and groundwater within a previously mined area or which underlies a coal mine refuse disposal area).

Based on an evaluation of the hydrogeological conditions at and near the site, the following determinations were made regarding GW classification:

- Class I classification is not appropriate as GW at the site occurs at a depth less than 10 feet and the hydraulic conductivity of the fine-grained soils is less than 1.0E-04 cm/sec.
- Class III classification does not appear appropriate as shallow GW at the site does not appear to be unique or vital to a sensitive ecological system.
- Class IV classification does not appear appropriate as the GW does not satisfy any of the classification requirements.
- Class II classification therefore appears to be the appropriate GW category. IEPA concurred with this designation in their July 18, 1996 letter (Log B-113-CA-2).

While MW data is available on certain wells going back to 1995, the current Corrective Measures program has only been implemented since the fourth quarter of 2009. The reports provide: analytical results of all GW samples taken since 1995, a comparison to the Tier II Class II – GW Ingestion Exposure Route Groundwater Remediation Objectives, diagrams showing the relative locations of the various active MWs, isoconcentration maps for select compounds (TCE, CIS, TCA, and 11DCE where enough data points are available), and GW surface elevations.

A review of the data indicates that the concentrations in the majority of MWs have remained relatively constant.

MW monitoring will continue until at such time as remediation of soils has reduced the concentrations of COC to below their Csat levels per condition 21 of the letter, or until otherwise authorized by IEPA.

In response to the Class II designation of groundwater, the City of Melrose Park agreed to institute an ordinance prohibiting the use of GW as a potable water supply by prohibiting the installation or the use of any supply wells within city limits. Ordinance 321 was established on November 24, 1997 and became effective on December 4, 1997. The city also entered into a memorandum of understanding with IEPA regarding the GW ordinance. Ordinance 509 was accepted and became effective on April 27, 2000. Copies of both ordinances are found in Attachment K-9.

In summary, shallow groundwater beneath and near the site is not a potable drinking water source and will not be used as one in the near future. The following points help support this claim:

- GW has been designated as Class II;
- the use of GW is prohibited by the City of Melrose Park Ordinance No. 321 and the IEPA Memorandum of Understanding (MOU) No. 509;
- based on permeability and conductivity values of the soils, the horizontal and vertical migration have been calculated to be less than 30 feet;
- the 2003/2004 water well surveys (WWS) and the 2009 addendum WWS report letter (see Attachment K-10) identified four (4) private wells within 2,500 feet: two wells (IHB RR#4 and IHB #4) are listed as 400-600 feet from the site, are used for industrial purposes and appear to be the same well; the third well at Amlings Flowerland is approximately 1,500 feet from the site and is also not used for potable purposes; the fourth well belongs to the City of Melrose Park , is approximately 2,050 feet from the site, is no longer in use and is not likely to be used in the future; and
- as previously noted, Cook, Lake, and Will counties obtain 97% of their drinking water from Lake Michigan approximately ten (10) miles away.

Corrective Action Effectiveness and Compliance Point

With MNA being used as the corrective action plan, the effectiveness will be monitored based on the effectiveness of the proposed GMZ which has been accepted by IEPA. A copy of IEPA's acceptance letter for the GMZ is presented in Attachment K-5. The proposed GMZ was presented in Appendix F of the March 28, 2011 Site Activities Summary Report.

Alternate Concentration Limits

This section is not applicable as alternate concentration limits are not being sought.

Corrective Action Plan

As previously noted, the Correction Action Plan (CAP) for this site involves Monitored Natural Attenuation. While not part of the GW CAP, soil remediation will be performed at the site. Soils will be treated to concentration levels defined in condition 3 of their July 2, 2009 letter.

GW Monitoring Program Requirements and System

As previously noted, the requirements of the GW monitoring program were established by the IEPA via their July 9, 2009 letter (Log No B-113-CA-8 and 9). The total number of MWs currently being used to establish the GMZ is seven (MW10 – 16) off-site MWs. Locations of the MWs are shown in the semi-annual monitoring reports found in Attachment K-4.

Description of Sampling and Analysis Procedures

The methodology used by Huff & Huff while collecting GW samples is provided in Attachment K-7

Background quality and Statistical Evaluations

Background quality and statistical evaluations are not applicable to this application.

Evaluation of GW Surface

The evaluation of surface GW levels is done on a semi-annual while collecting samples from the various MWs in the GMZ network. Surface elevations are included in the corresponding reports.

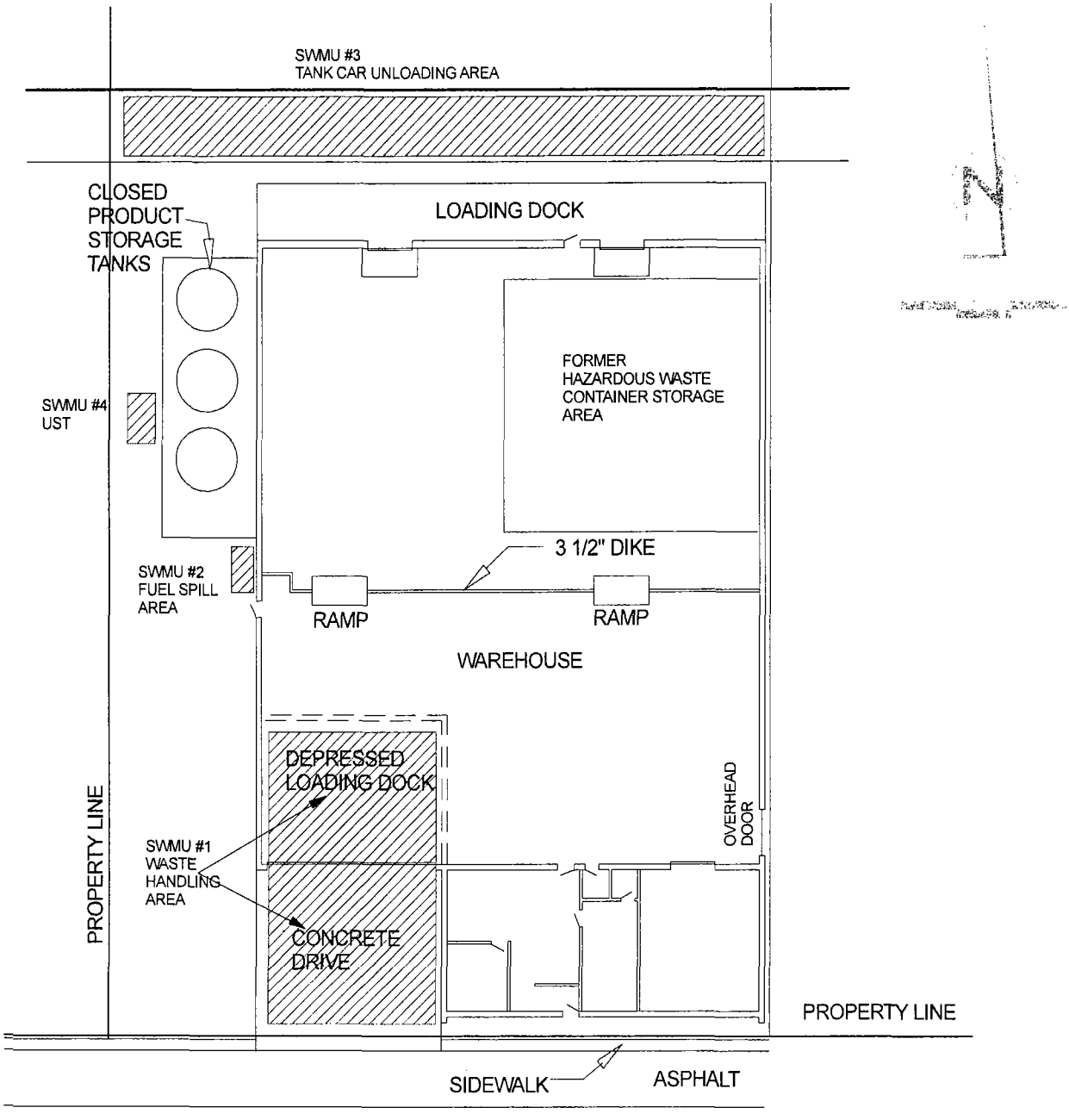
Extension of Compliance Period

An extension to the compliance period is not being sought.

Evaluation and Effectiveness of the CAP

As the Corrective Action Plan is ongoing, there is no need at this current time for an evaluation. The effectiveness of the CAP is being monitored through the semi-annual GW monitoring events as part of the MNA.

ATTACHMENT K-1
FACILITY PLAN



2537 LEMOYNE AVENUE

MELROSE PARK, IL

K-2
Chronological List of Corrective Actions

Attachment K-2
Chronological List of Corrective Actions

DATE	CORRECTIVE ACTION EVENT
1995	ESE: 24 soil borings (13 on-site and 11 off-site), 141 soil samples (75 on-site and 66 off-site), six monitoring wells (two on-site and four off-site) and five groundwater samples.
3/4/1993	Phase I RFIWP (CRA: 12 on-site soil borings and 38 on-site soil samples)
3/17/1994	RFI Phase I Report
8/31/1994	Phase II RFIWP
1/31/1996	RFI Phase II (stage 1 of 2) Report
7/18/1996	IEPA response to the Phase II RFI Report
1/6/1997	Scope of work letter from ESE for Stage 2 of Phase II RFIWP
6/28/1997	RFI Phase II Stage 2 Investigation summary report and Tier 1 TACO Screening Evaluation
11/26/1997	Tier 2 TACO Analysis Report (addendum to 06.29.1997 Site Investigation Report)
4/30/2002	submission of second Part B permit application
10/9/2003	IEPA issues 10 year permit for operation of site
9/24/2004	GW sampling results report
5/26/2006	Phase II Stage 2 RFIWP
10/30/2006	Summary of Environmental Conditions Report and RFIWP
5/5/2008	Phase III RFI Summary Report
10/2/2008	Supplemental information letter from Arcadis to IEPA concerning the Phase III summary of Environmental Conditions Report.
3/31/2009	Migration of Constituents Evaluation Report
7/22/2009	Outback Sales Evaluation of data report
11/19/2009	Additional off-site RFIWP (install new MWs and abandon three existing MWs)
12/15/2009	Corrective Measures Plan - Phase I
3/28/2011	RFI Site Investigation Completion Report
10/14/2011	Pilot Test modification request and update letter
3/15/2012	Corrective Action Pilot Test Summary Report
08.02.2012	Vapor Mitigation System Plan for Outback Sales
02.14.2013	Phase 2 Corrective Measure Plan
1/14/2010	Fourth quarter GW GW report for calendar year 2009
7/14/2010	Second quarter GW report for calendar year 2010
1/13/2011	Fourth quarter GW report for calendar year 2010
7/14/2011	Second quarter GW report for calendar year 2011
1/6/2012	Fourth quarter GW report for calendar year 2011
7/13/2012	Second quarter GW report for calendar year 2012 (copy in attachment K-4)
1/15/2013	Fourth quarter GW report for calendar year 2012 (copy in attachment K-4)
2/14/2013	Phase II Corrective Measures Plan Final Design Report and Construction WP

RCRA FACILITY INVESTIGATION PHASE I WORK PLAN

Detrex Corporation
Melrose Park, Illinois

MARCH 1993

REF. NO. 5222 (1)

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 GENERAL 1
1.2 RFI OBJECTIVES 1
1.3 WORK PLAN ORGANIZATION 2

2.0 BACKGROUND 4
2.1 GENERAL 4
2.2 IDENTIFICATION OF SWMUs 4
2.2.1 Waste Handling Area 5
2.2.2 Fuel Spill Area 7
2.2.3 Tank Car Unloading Area 8
2.3 MATERIALS MANAGED 8
2.4 CORRECTIVE ACTION MEASURES 9
2.4.1 Fuel Storage 10
2.4.2 Product Spill 11

3.0 FACILITY DESCRIPTION 12
3.1 LOCATION 12
3.2 TOPOGRAPHY 12
3.3 LAND USE 13
3.4 REGIONAL GEOLOGY 13
3.5 REGIONAL HYDROGEOLOGY 14
3.6 CLIMATE 16

4.0 PHASE I RFI ACTIVITIES 17
4.1 GENERAL 17
4.2 BOREHOLE INSTALLATIONS 17
4.2.1 Waste Handling Area (SWMU #1) 17
4.2.2 Fuel Spill Area (SWMU #2) 19
4.2.3 Tank Car Unloading Area (SWMU #3) 20
4.3 POTENTIAL UNDERGROUND TANK AREA 20

5.0 REPORTING 22
5.1 OVERVIEW 22
5.2 QUARTERLY PROGRESS REPORTS 22
5.3 RFI PHASE I REPORT 23
5.4 RFI PHASE II WORK PLAN 23

6.0 PROJECT SCHEDULE AND COST ESTIMATE 24

LIST OF FIGURES

		Following Report
FIGURE 1.1	SITE LOCATION	
FIGURE 2.1	LOCATION OF SOLID WASTE MANAGEMENT UNITS	
FIGURE 2.2	CORRECTIVE ACTION FOR FUEL SPILL AREA	
FIGURE 3.1	SURROUNDING AREA TOPOGRAPHIC MAP	
FIGURE 3.2	SURROUNDING LAND USE	
FIGURE 3.3	WIND ROSE	
FIGURE 4.1	SWMU #1 BOREHOLE LOCATIONS	
FIGURE 4.2	SOIL SAMPLING SCHEME	
FIGURE 4.3	SWMU #2 BOREHOLE LOCATIONS	
FIGURE 4.4	SWMU #3 BOREHOLE LOCATIONS	
FIGURE 6.1	PROJECT SCHEDULE	

LIST OF TABLES

TABLE 3.1	NORMALS, MEANS AND EXTREMES
TABLE 6.1	RFI PHASE I COST ESTIMATE

LIST OF PLANS

PLAN 1	FOUNDATION PLAN AND DETAILS F1 THRU F11
PLAN 2	FOUNDATION PLAN AND DETAILS FOR 8" EXTERIOR WALLS
PLAN 3	1/8" ELEVATIONS
PLAN 4	PLAT OF SURVEY
PLAN 5	TOPOGRAPHICAL SURVEY
PLAN 6	ZONING

LIST OF APPENDICES

APPENDIX A	PROJECT MANAGEMENT PLAN
APPENDIX B	QUALITY ASSURANCE PROJECT PLAN
APPENDIX C	DATA MANAGEMENT PLAN
APPENDIX D	HEALTH AND SAFETY PLAN
APPENDIX E	SAMPLING PLAN
APPENDIX F	FUEL OIL SPILL AREA RTI SOILS DATA

RCRA FACILITY INVESTIGATION PHASE I REPORT

Detrex Corporation
Melrose Park, Illinois

MARCH 1994

REF. NO. 5222 (3)

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 RFI REPORT ORGANIZATION 1

2.0 FACILITY BACKGROUND 2
2.1 GENERAL 2
2.2 IDENTIFICATION OF SWMUs 2
2.2.1 Waste Handling Area 3
2.2.2 Fuel Spill Area 4
2.2.3 Tank Car Unloading Area 5
2.3 MATERIALS MANAGED 5
2.4 CORRECTIVE ACTION MEASURES 6
2.4.1 Fuel Storage 6
2.4.2 Product Spill 7

3.0 REGIONAL CONDITIONS 8
3.1 LOCATION 8
3.2 TOPOGRAPHY 8
3.3 LAND USE 8
3.4 REGIONAL GEOLOGY 9
3.5 REGIONAL HYDROGEOLOGY 10
3.6 CLIMATE 11

4.0 PHASE I RFI FIELD ACTIVITIES 12
4.1 INVESTIGATIVE BOREHOLE INSTALLATIONS 13
4.1.1 General 13
4.1.2 Stratigraphic Borehole 14
4.1.3 Waste Handling Area (SWMU #1) 14
4.1.4 Fuel Spill Area (SWMU #2) 15
4.1.5 Tank Car Unloading Area (SWMU #3) 16
4.2 TEST PIT INVESTIGATION 16
4.3 SOIL CHARACTERIZATION ACTIVITIES 17
4.3.1 General 17
4.3.2 Sampling Protocols 18
4.4 UST CONTENTS CHARACTERIZATION ACTIVITIES 20
4.4.1 General 20
4.4.2 Sampling Protocols 21

5.0 FACILITY CONDITIONS 23
5.1 GENERAL 23
5.2 FACILITY TOPOGRAPHY 23
5.3 FACILITY GEOLOGY 23
5.4 FACILITY HYDROGEOLOGY 25

TABLE OF CONTENTS

Page

6.0 FACILITY CHARACTERIZATION 27
6.1 PHASE I RFI DATA BASE 27
6.2 WASTE HANDLING AREA (SWMU #1) 28
6.2.1 General 28
6.2.2 Characterization 28
6.3 FUEL SPILL AREA (SWMU #2) 30
6.3.1 General 30
6.3.2 Characterization 31
6.4 TANK CAR UNLOADING AREA (SWMU #3) 32
6.4.1 General 32
6.4.2 Characterization 32
6.5 UNDERGROUND STORAGE TANK (SWMU #4) 33
6.5.1 General 33
6.5.2 Characterization 34
6.6 UST CONTENTS 36

7.0 SUMMARY AND CONCLUSIONS 37

LIST OF FIGURES

		Following Report
FIGURE 2.1	SITE LOCATION	
FIGURE 2.2	LOCATION OF SOLID WASTE MANAGEMENT UNITS	
FIGURE 3.1	SURROUNDING AREA TOPOGRAPHIC MAP	
FIGURE 3.2	SURROUNDING LAND USE	
FIGURE 3.3	WIND ROSE	
FIGURE 4.1	STRATIGRAPHIC BOREHOLE LOCATION	
FIGURE 4.2	SWMU #1 BOREHOLE LOCATIONS	
FIGURE 4.3	SWMU #2 BOREHOLE LOCATIONS	
FIGURE 4.4	SWMU #3 BOREHOLE LOCATIONS	
FIGURE 4.5	SWMU#4 TEST PIT LOCATION	
FIGURE 5.1	CROSS SECTION LOCATIONS	
FIGURE 5.2	CROSS SECTION A-A'	
FIGURE 5.3	CROSS SECTION B-B'	
FIGURE 6.1	SWMU #1 ANALYTICAL SUMMARY	
FIGURE 6.2	ANALTYICAL SUMMARY CROSS SECTION A-A'	
FIGURE 6.3	SWMU #2 ANALYTICAL SUMMARY	
FIGURE 6.4	SWMU #3 ANALYTICAL SUMMARY	
FIGURE 6.5	ANALTYICAL SUMMARY CROSS SECTION B-B'	

LIST OF TABLES

		Following Report
TABLE 3.1	NORMALS, MEANS AND EXTREMES	
TABLE 4.1	INVESTIGATIVE BOREHOLE SAMPLING SUMMARY	
TABLE 4.2	INVESTIGATIVE TEST PIT SAMPLING SUMMARY	
TABLE 6.1	SWMU #1 SOIL DATA SUMMARY	
TABLE 6.2	SWMU #1 DETECTED COMPOUND SUMMARY	
TABLE 6.3	SWMU #2 SOIL DATA SUMMARY	
TABLE 6.4	SWMU #2 DETECTED COMPOUND SUMMARY	
TABLE 6.5	SWMU #3 SOIL DATA SUMMARY	
TABLE 6.6	SWMU #3 DETECTED COMPOUND SUMMARY	
TABLE 6.7	SWMU #4 SOIL DATA SUMMARY	
TABLE 6.8	SWMU #4 DETECTED COMPOUND SUMMARY	
TABLE 6.9	UST CONTENTS DATA SUMMARY	

LIST OF PLANS

PLAN 1	FOUNDATION PLAN AND DETAILS F1 THROUGH F11
PLAN 2	FOUNDATION PLAN AND DETAILS FOR 8" EXTERIOR WALLS
PLAN 3	1/8" ELEVATIONS
PLAN 4	PLAT OF SURVEY
PLAN 5	TOPOGRAPHICAL SURVEY

LIST OF APPENDICES

APPENDIX A	PHOTOGRAPHIC LOG
APPENDIX B	BOREHOLE STRATIGRAPHIC AND INSTRUMENTATION LOGS
APPENDIX C	LABORATORY DATA REPORTS
APPENDIX D	DATA ASSESSMENT AND VALIDATION REPORTS
APPENDIX E	FATE AND TRANSPORT

RCRA FACILITY INVESTIGATION PHASE II WORK PLAN

Detrex Corporation
Melrose Park, Illinois

AUGUST 1994

REF. NO. 5222 (4)

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 GENERAL 1
1.2 RFI OBJECTIVES 1
1.3 WORK PLAN ORGANIZATION 2

2.0 FACILITY BACKGROUND 4
2.1 GENERAL 4
2.2 IDENTIFICATION OF SWMUs 4
2.3 MATERIALS MANAGED 5
2.4 CORRECTIVE ACTION MEASURES 5
2.4.1 Fuel Storage 5
2.4.2 Product Spill 6

3.0 REGIONAL CONDITIONS 7
3.1 LOCATION 7
3.2 TOPOGRAPHY 7
3.3 LAND USE 7
3.4 REGIONAL GEOLOGY 8
3.5 REGIONAL HYDROGEOLOGY 9
3.6 CLIMATE 10

4.0 RFI PHASE I SUMMARY 11
4.1 RFI PHASE I FIELD ACTIVITIES SUMMARY 11
4.2 FACILITY CONDITIONS 12
4.2.1 General 12
4.2.2 Facility Topography 12
4.2.3 Facility Geology 12
4.2.4 Facility Hydrogeology 14
4.3 FACILITY CHARACTERIZATION 15
4.3.1 RFI Phase I Data Base 15
4.3.2 Waste Handling Area (SWMU #1) 16
4.3.2 Fuel Spill Area (SWMU #2) 18
4.3.3 Tank Car Unloading Area (SWMU #3) 20
4.3.4 Underground Storage Tank (SWMU #4) 21
4.4 UST CONTENTS 23

5.0 RFI PHASE II ACTIVITIES 24
5.1 GENERAL 24
5.2 SOIL SAMPLING ACTIVITIES 24
5.2.1 Borehole Installations 24
5.2.2 Background Soil Sample Collection 26
5.3 GROUNDWATER SAMPLING ACTIVITIES 27

TABLE OF CONTENTS

Page

5.3.1 Monitoring Well Installation 27
5.3.2 Single Well Response Testing 29
5.3.3 Groundwater Sample Collection 29
5.3.4 Water Level Monitoring 29

6.0 REPORTING 30
6.1 OVERVIEW 30
6.2 QUARTERLY PROGRESS REPORTS 30
6.3 RFI PHASE II REPORT 30

7.0 PROJECT SCHEDULE AND COST ESTIMATE 32

LIST OF FIGURES

		Following Report
FIGURE 1.1	SITE LOCATION	
FIGURE 2.1	LOCATION OF SOLID WASTE MANAGEMENT UNITS	
FIGURE 2.2	CORRECTIVE ACTION FOR FUEL SPILL AREA	
FIGURE 3.1	SURROUNDING AREA TOPOGRAPHIC MAP	
FIGURE 3.2	SURROUNDING LAND USE	
FIGURE 3.3	WIND ROSE	
FIGURE 4.1	RFI PHASE I CROSS-SECTION LOCATIONS	
FIGURE 4.2	RFI PHASE I CROSS-SECTION A-A'	
FIGURE 4.3	RFI PHASE I CROSS-SECTION B-B'	
FIGURE 4.4	RFI PHASE I SWMU #1 ANALYTICAL SUMMARY	
FIGURE 4.5	RFI PHASE I ANALTYICAL SUMMARY CROSS-SECTION A-A'	
FIGURE 4.6	RFI PHASE I SWMU #2 ANALYTICAL SUMMARY	
FIGURE 4.7	RFI PHASE I SWMU #3 ANALYTICAL SUMMARY	
FIGURE 4.8	RFI PHASE I ANALTYICAL SUMMARY CROSS-SECTION B-B'	
FIGURE 5.1	PROPOSED BOREHOLE/MONITORING WELL LOCATIONS	
FIGURE 5.2	BOREHOLE SAMPLING SCHEME	
FIGURE 5.3	PROPOSED BACKGROUND SOIL SAMPLE LOCATIONS	
FIGURE 5.4	TYPICAL SHALLOW MONITORING WELL WITH FLUSH MOUNT	
FIGURE 7.1	RFI PHASE II PROJECT SCHEDULE	

LIST OF TABLES

		Following Report
TABLE 3.1	NORMALS, MEANS AND EXTREMES	
TABLE 4.1	RFI PHASE I SWMU #1 SOIL DATA SUMMARY	
TABLE 4.2	RFI PHASE I SWMU #1 DETECTED COMPOUND SUMMARY	
TABLE 4.3	RFI PHASE I SWMU #2 SOIL DATA SUMMARY	
TABLE 4.4	RFI PHASE I SWMU #2 DETECTED COMPOUND SUMMARY	
TABLE 4.5	RFI PHASE I SWMU #3 SOIL DATA SUMMARY	
TABLE 4.6	RFI PHASE I SWMU #3 DETECTED COMPOUND SUMMARY	
TABLE 4.7	RFI PHASE I SWMU #4 SOIL DATA SUMMARY	
TABLE 4.8	RFI PHASE I SWMU #4 DETECTED COMPOUND SUMMARY	
TABLE 4.9	RFI PHASE I UST CONTENTS DATA SUMMARY	
TABLE 5.1	SOIL LEVELS OF CONCERN	
TABLE 7.1	RFI PHASE II COST ESTIMATE	

LIST OF PLANS

PLAN 1 PLAN OF SURVEY

PLAN 2 TOPOGRAPHIC SURVEY

LIST OF APPENDICES

APPENDIX A PROJECT MANAGEMENT PLAN

APPENDIX B QUALITY ASSURANCE PROJECT PLAN AMENDMENT

APPENDIX C DATA MANAGEMENT PLAN

APPENDIX D HEALTH AND SAFETY PLAN

APPENDIX E SAMPLING PLAN

APPENDIX F FATE AND TRANSPORT

Phase II RCRA Facility Investigation (Stage 1 of 2) Report

Prepared for:
Detrex Corporation
Melrose Park, Illinois

Prepared by:
Environmental Science & Engineering, Inc.
5440 N. Cumberland Avenue, Suite 111
Chicago, Illinois 60656

1996

ESE Project No. 559-5160

Table of Contents

Section Page

1.0 INTRODUCTION 1
- 1.1 Purpose 1
- 1.2 RFI Report Organization 1

2.0 FACILITY BACKGROUND AND REGIONAL CONDITIONS 3

3.0 SUMMARY OF PHASE I RFI RESULTS 6
- 3.1 Preliminary Geological and Hydrogeological Characterization 6
  - 3.1.1 Geological Findings 6
  - 3.1.2 Hydrogeological Findings 7
- 3.2 SWMU No. 1: Waste Handling Area 7
  - 3.2.1 Description of SWMU and Waste Management Activities 7
  - 3.2.2 Release Controls 8
  - 3.2.3 Phase I Findings 8
- 3.3 SWMU No. 2: Fuel Spill Area 10
  - 3.3.1 Description of SWMU and Waste Management Activities 10
  - 3.3.2 Release Controls 10
  - 3.3.3 Phase I Findings 11
- 3.4 SWMU No. 3: Tank Car Unloading Area 11
  - 3.4.1 Description of SWMU and Waste Management Activities 11
  - 3.4.2 Release Controls 11
  - 3.4.3 Phase I Findings 12
- 3.5 SWMU No. 4: Underground Storage Tank Area 12
  - 3.5.1 Description of SWMU and Waste Management Activities 12
  - 3.5.2 Release Controls 12
  - 3.5.3 Phase I Findings 12
- 3.6 Summary of Phase I RFI Chemical Characterization 13

4.0 PHASE II RFI OBJECTIVES AND SUPPORTING DATA REQUIREMENTS 14
- 4.1 Project Objectives 14
- 4.2 Investigation Threshold Levels 16
- 4.3 Data Needs 16
- 4.4 Data Usage 19

5.0 PHASE II RFI FIELD ACTIVITIES 20

Table of Contents (continued)

5.1 Installation of Soil Borings 22
5.1.1 Background Soil Borings 23
5.1.2 Facility Soil Borings 23
5.2 Soil Sampling and Analysis 25
5.2.1 Background Soil Sampling and Analysis 28
5.2.2 Facility Soil Sampling and Analysis 28
5.3 Installation of Monitoring Wells 28
5.4 Slug Testing 30
5.5 Preliminary Groundwater Monitoring Event 30

6.0 PHASE II RFI RESULTS 32
6.1 Geological and Hydrogeological Results 32
6.1.1 Soil Boring Data 32
6.1.2 Hydraulic Conductivity Testing Results 38
6.1.3 Groundwater Classification 39
6.2 Analytical Results for Soil Sampling 40
6.2.1 Analytical Results for Background Soils 40
6.2.2 Analytical Results for Northern Area of Facility 40
6.2.3 Analytical Results for Western Area of Facility 47
6.2.4 Analytical Results for Southern Area of Facility 50
6.2.5 Analytical Results for Eastern Area of Facility 53
6.2.6 Analytical Results for Interior of Building 56
6.3 Results for Preliminary Groundwater Monitoring Event 59
6.3.1 Water Levels 59
6.3.2 Analytical Results for Preliminary Groundwater Monitoring Event 59

7.0 SUMMARY AND CONCLUSIONS 64
7.1 Phase II (Stage 1) RFI Summary 64
7.2 Phase II (Stage 2) Approach 66

8.0 REFERENCES 68

Table of Contents (continued)

List of Tables

Table	
4-1	Investigation Threshold Levels for Target Analytical Parameters
5-1	Summary of Phase II RFI Completion Costs
6-1	Constituent Concentrations for Phase II RFI Background Soil Samples
6-2	Summary of Phase II RFI Background Soil Concentrations
6-3	Constituent Concentrations for Phase II RFI Soil Samples Northern Area of Facility
6-4	Constituent Concentrations for Phase II RFI Soil Samples Western Area of Facility
6-5	Constituent Concentrations for Phase II RFI Soil Samples Southern Area of Facility
6-6	Constituent Concentrations for Phase II RFI Soil Samples Eastern Area of Facility
6-7	Constituent Concentrations for Phase II RFI Soil Samples Building Interior
6-8	Preliminary Groundwater Elevations at the Detrex Facility (November 1995)
6-9	Constituent Concentrations for Preliminary Phase II RFI Groundwater Samples

List of Figures

Figure	
2-1	Site Location Map
2-2	SWMU Locations at Detrex Facility
3-1	Phase I RFI Soil Boring Locations
5-1	Phase II RFI Soil Boring and Monitoring Well Locations
6-1	Cross-Section Locations
6-2	Cross-Section C-C'
6-3	Cross-Section D-D'
6-4	Summary of Phase II RFI Soil and Groundwater Concentrations
6-5	Summary of Phase II RFI Soil Concentrations for Northern Area
6-6	Summary of Phase II RFI Soil Concentrations for Western Area
6-7	Summary of Phase II RFI Soil Concentrations for Southern Area
6-8	Summary of Phase II RFI Soil Concentrations for Eastern Area
6-9	Summary of Phase II RFI Soil Concentrations for Building Interior
6-10	Groundwater Monitoring Well Concentrations (November 1995)

Environmental
Science &
Engineering, Inc.
A CILCORP Company

January 6, 1997
ESE Project No. 559-5160

Mr. William T. Sinnott, Project Engineer
Corrective Action Unit
Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62794-9276

RE: RCRA RFI Stage II of the Phase II Investigation Workplan
USEPA ID No. ILD 074424938
Detrex Corp., Melrose Park, IL

Dear Mr. Sinnott:

On behalf of Detrex Corporation, Environmental Science & Engineering, Inc. (ESE) has developed the following scope of work for Stage II of the Phase II RFI for the above referenced project. This letter workplan presents a detailed description of the investigation activities to be completed to accomplish Stage II of the Phase II RFI. This workplan was developed in accordance with agreements reached with the IEPA on July 11, 1996 at the on-site meeting, and subsequent conversations with the IEPA.

ESE intends to begin the field work described herein in January 1997 and field work should be completed by February 1997, if access agreements can be obtained from nearby property owners.

Geoprobe Soil Borings

ESE will perform ten Geoprobe soil borings to complete delineation of the horizontal and vertical extent of contamination previously discovered. The Geoprobe hydraulic soil probe sampling technology uses static and percussion forces to drive probing and sampling tools into the subsurface. Borings will be advanced to a depth of approximately 28 feet and continuously sampled. Boring logs will be maintained by the field geologist. Samples will be screened with a photoionization detector (PID) using headspace analysis. Samples with the highest PID readings and samples from the lowest interval in each boring will be submitted for analysis. A groundwater sample will be collected from each boring using a vacuum pump and flexible tubing.

Soil samples will be immediately placed in laboratory pre-cleaned sample jars with as little disturbance as possible in order to minimize loss of volatiles. Pre-cleaned 40-ml vials will be used to collect groundwater samples. Head space within the sample jars and vials will be minimized to reduce the loss of volatiles. After collection, the sample containers will be labeled with the site name, sample number, date, time, and sampler initials, and placed in an iced cooler. Samples will be shipped via overnight courier to ESE's laboratory in Peoria, Illinois. Chain-of custody procedures will be followed during the shipping of all samples.

Samples will be analyzed for chlorinated aliphatic compounds by EPA Method 8260. Required duplicates, equipment rinsates and trip blanks will be collected in accordance with RCRA protocols. A duplicate will be collected from the Geoprobe soil samples, rinsates will be collected from the soil

5440 North Cumberland Avenue, Suite 111 Chicago, IL 60656 Phone (312) 693-6030 Fax (312) 693-6039

and groundwater sampling equipment and a trip blank will be sent with each cooler containing samples. Borings will be abandoned after sampling is complete by grouting with a bentonite slurry.

Hollow Stem Auger Borings

Two hollow stem auger borings will be completed, using a skid drill rig, to delineate the vertical extent of contamination detected at previous borings and to better define the geology at the site. One of these borings, in the southwest corner of the site, will be destructively drilled to 25 feet and then continuously sampled from 25 to 50 feet. The second boring, which will be placed inside the building, will be destructively drilled to 25 feet and then continuously sampled from 25 to 35 feet. Samples will be screened with a PID using headspace analysis. One soil sample will be taken from each boring, from the sample interval with the highest PID reading.

Soil samples will be immediately placed in laboratory pre-cleaned sample jars with as little disturbance as possible in order to minimize loss of volatiles. Head space within the sample jars will be minimized to reduce the loss of volatiles. After collection, the sample containers will be labeled with the site name, sample number, date, time, and sampler initials, and placed in an iced cooler. Samples will be shipped via overnight courier to ESE's laboratory in Peoria, Illinois. One duplicate will be collected from this sample group, a rinsate will be obtained from the sampling equipment and a trip blank will be sent with the samples to the laboratory. Chain-of custody procedures will be followed during the shipping of all samples. Samples will be tested for chlorinated aliphatic compounds using EPA Method 8260.

To prevent vertical migration of contaminants, borings will be abandoned after sampling is complete by grouting with a bentonite slurry.

Headspace Analysis

Headspace analysis will be performed on a portion of the soil sample from each depth interval within each boring. Headspace analysis will involve first placing a small portion of soil into a clean plastic bag and sealing the bag. The sample will then be placed in a warm (not less than 70° F) area for a period of not less than ten minutes to allow any organic compounds to come to equilibrium within the bag. The tip of a PID will then be inserted into the bag and the maximum PID response for each sample will be recorded on the boring log . The soil sample which has the highest response will be submitted for laboratory analysis.

Groundwater Levels

Two rounds of groundwater level measurements will be collected from each of the current 6 permanent wells to aid in determining the groundwater flow direction, groundwater fluctuations, and the flow gradient. Each round of measurements will be performed in one 24-hour period and as closely spaced in time as possible. The static water level in each well will be measured to the nearest 0.01 foot by inserting an electronic water level indicator into the monitoring well and measuring the distance between the top of the well casing at a designated point and the top of the water. Groundwater potentiometric surface maps will be prepared for each measurement event. It is anticipated that rounds of groundwater level measurement will coincide with groundwater sampling events.

Quarterly Groundwater Monitoring

Groundwater samples will be collected quarterly (every three months) from all six permanent monitoring wells. Quarterly sampling will begin in February 1997 and continue every three months until November 1997. Wells will be purged of three to five well volumes or until all visible fines have been removed. No more than five nor less than three volumes will be purged. Samples will then be collected in pre-cleaned 40-ml vials. Wells will be purged and sampled using disposable polyethylene bailers. No trip blanks, equipment blanks or duplicates will be collected. These samples will be analyzed for chlorinated aliphatic compounds only by EPA Method 8260. Status reports will be prepared documenting each quarter of sampling.

Decontamination

All drilling and sampling equipment will be decontaminated between uses with a distilled water/alconox wash followed by a distilled water rinse or by steam cleaning. All cuttings and decontamination water produced in this sampling effort will be drummed and properly disposed.

RFI Report

A Phase II RCRA Facility Investigation report will then be developed for IEPA review incorporating the results from both stages of the Phase II investigation. This report will include results of all sampling to-date. No data validation will be performed on the analytical results but quality control and a quality summary will be included in the RFI report. In the report, conclusions will be reached on the need for additional investigative activities and/or remediation at the site.

If you have any questions or require additional information, please feel free to contact either of the undersigned.

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Mary E. Jank
Project Geologist

Gary W. Cobb, C.P.G.
Project Manager

cc: Mr. Issa H. Shamiyeh - Detrex Corporation
Mr. Stan Miles - Detrex Corporation
Mr. James K. Moore, P.E. - IEPA

Attachments

97010606.LTR
/MEJ

List of Appendices

Table of Contents (continued)

Appendix	
A	Excerpts of Phase I RFI Geological Data and Analytical Results
B	ESE Project Management Plan
C	Photographic Log
D	Soil Boring Logs
E	Soil Permeability and Slug Testing Results
F	Analytical Laboratory Data
G	Data Validation Report

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
38505 Country Club Drive, Ste 100
Farmington Hills, Michigan 48331

June 28, 1997
D&M Project No. 32904-003-158

Prepared for:
The Detrex Corporation

Prepared by:
Dames & Moore

Phase II Stage 2 Investigation

Summary and Tier 1

TACO Screening Evaluation

for the Detrex Corporation's

RCRA Facility in

Melrose Park, Illinois

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 REGULATORY FRAMEWORK 1
1.1.1 Illinois' Tiered Approach to Cleanup Objectives (TACO) 1

2.0 SITE LOCATION AND DESCRIPTION 4
2.1 GENERAL LOCATION AND DESCRIPTION 4
2.2 SOLID WASTE MANAGEMENT UNITS 4

3.0 SITE INVESTIGATION HISTORY 7
3.1 PHASE I RFI 7
3.2 PHASE II (STAGE 1) RFI 7
3.3 PHASE II (STAGE 2) RFI 9

4.0 CHARACTERISTICS OF THE SITE 11
4.1 LAND USE 11
4.2 CLIMATE 11
4.3 TOPOGRAPHY 11
4.4 GEOLOGY 11
4.4.1 Regional Geology 11
4.4.2 Site Geology 12
4.5 HYDROGEOLOGY 13
4.5.1 Regional Hydrogeology 13
4.5.2 Site Hydrogeology 13
4.6 GROUNDWATER USE 14
4.7 GROUNDWATER CLASSIFICATION 15

5.0 NATURE AND EXTENT OF CONTAMINATION 16
5.1 PHASE I RFI FINDINGS 16
5.2 PHASE II (STAGE 1) RFI FINDINGS 17
5.2.1 Soil Results 17
5.2.2 Groundwater Results 19
5.3 PHASE II (STAGE 2) RFI FINDINGS 19
5.3.1 Soil Results 20
5.3.2 Groundwater Results 20
5.4 SUMMARY OF NATURE AND EXTENT OF CONTAMINATION 20

6.0 DATA REVIEW AND EVALUATION 22
6.1 DATA VALIDATION 22
6.2 COMPILATION OF DATA SET 22

7.0 EXPOSURE ASSESSMENT 24
7.1 Potentially Exposed Population and Exposure Pathways 24

7.2 ESTIMATING EXPOSURE POINT CONCENTRATIONS....25

8.0 COMPARISON TO TIER 1 TACO SCREENING CRITERIA....26
8.1 SOIL....26
8.2 GROUNDWATER....27
8.3 SOIL ATTENUATION CAPACITY....27

9.0 CONCLUSIONS....29

10.0 RECOMMENDATIONS....30

11.0 REFERENCES....32

Tables

Table 1 Well Locations within 1 Mile of the Facility
Table 2 Consolidated On-site Soil Data for VOCs
Table 3 Consolidated On-site Soil Data for PAHs
Table 4 Consolidated Off-site Soil Data for VOCs
Table 5 Consolidated Groundwater Data for VOCs
Table 6 Consolidated Groundwater Data for PAHs
Table 7 Conceptual Site Model
Table 8 Summary of on-site soil data for VOCs
Table 9 Summary of on-site soil data for PAHs
Table 10 Summary of off-site soil data for VOCs
Table 11 Comparison of Tier 1 Criteria to On-site VOC Soil Data to Tier 1 Taco Criteria
Table 12 Comparison of on-site soil PAH data to TACO Tier 1 Screening Criteria
Table 13 Off-site VOCs in soil compared to TACO Tier 1 objectives screening criteria
Table 14 Summary of Tier 1 Criteria exceeded in soil
Table 15 Comparison of Maximum Concentrations detected in soil to soil saturation limits and background
Table 16 Summary of groundwater data for VOCs
Table 17 Summary of groundwater data for PAHs
Table 18 Comparison of groundwater data to TACO Tier 1 Criteria for VOCs
Table 19 Comparison of groundwater data to TACO Tier 1 Criteria for PAHs
Table 20 Determination of Compliance with soil attenuation capacity

Figures

Figure 1 Surrounding Area Topography map
Figure 2 SWMU Locations at Detrex Facility
Figure 3 Phase I Soil Boring Locations
Figure 4 Phase II Soil Boring Locations
Figure 5 Phase II (Stage2) Sample Locations
Figure 6 Surrounding Land Use
Figure 7 Private Well Locations

Appendices

Appendix A Boring Logs from the Phase II Stage 2 Investigation
Appendix B Phase I Analytical Data
Appendix C Phase II Analytical Data
Appendix D Phase 2 Stage 2 Laboratory Data Sheets
Appendix E Data Qualifications for Phase II Stage 2 Data

38505 Country Club Drive, Suite 100
Farmington Hills, Michigan 48331

November 26, 1997
D&M Project No. 32904-002

Prepared for:
The Detrex Corporation

Tier 2 TACO Analysis

for Detrex RCRA Facility

Melrose Park, Illinois

Addendum to

Dames & Moore's June 29, 1997

Site Investigation Report

TABLE OF CONTENTS

Section	Page
EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	3
2.0 SITE INVESTIGATION ACTIVITIES	4
2.1 PROCEDURES	4
2.2 MONITORING WELL NETWORK	5
2.3 FINDINGS OF FIELD INVESTIGATION	5
3.0 TACO TIERED ANALYSIS	7
3.1 REGULATORY FRAMEWORK	7
3.1.1 Illinois' Tiered Approach to Cleanup Objectives (TACO)	7
3.2 DATA SET USED IN THE TACO ANALYSIS	8
3.3 POTENTIAL FOR HUMAN EXPOSURE	9
3.3.1 Estimating Point of Exposure Concentrations	9
3.3.2 Potentially Exposed Populations and Exposure Pathways	10
3.5 TIER 1 ANALYSIS	11
3.6 TIER 2 ANALYSIS	11
3.6.1 Calculation of Tier 2 Objectives	12
3.6.2 Comparison of Tier 2 Cleanup Objectives to Representative Soil Concentrations	13
3.6.2.1 Tier 2 Comparison to More Refined Point of Exposure Concentrations	13
3.6.3 Potential for Contact Under Current Conditions On-Site	16
3.7 SOIL ATTENUATION CAPACITY	16
4.0 CONCLUSIONS	18
4.1 CHEMICALS HANDLED AT THE DETREX FACILITY	19
4.2 ATTENUATION CAPACITY	19
4.3 CONTACT WITH COPCS AT THE SITE	19
4.3.1 Commercial and Industrial Workers	19
4.3.2 Construction Workers	21
4.4 OFF-SITE IMPACTS	21
4.5 POINT OF EXPOSURE CONCENTRATIONS	21
5.0 RECOMMENDATIONS	22
5.1 LAND-USE	22
5.2 EXCAVATION	22
6.0 REFERENCES	23

Tables

Table 1	Groundwater Elevations
Table 2	Geotechnical Data Collected On-Site
Table 3	Geotechnical Data Used to Calculate Tier 2 Objectives
Table 4	SSL Parameters
Table 5	ASTM Parameters
Table 6	Toxicity Values
Table 7	Chemical/Physical Parameters ASTM RBCA and USEPA SSL Tier 2 Evaluation
Table 8	Tier 2 Pathway Specific Cleanup Objectives for Soil
Table 9	Tier 2 Cleanup Objectives for Commercial/Industrial Workers

Table 10	Final Tier 2 Soil Cleanup Objectives
Table 11	Tier 2 Pathway Specific Cleanup Objectives for Construction Workers
Table 12	Tier 2 Pathway Specific Soil Cleanup Objectives for Construction Workers
Table 13	Final Tier 2 Soil Cleanup Objectives for Construction Workers
Table 14	Final Tier 2 TACO Cleanup Objectives for Commercial and Industrial Property
Table 15	Comparison of the Maximum Detected Concentrations On-Site to the Final Tier 2 Soil Cleanup Objectives
Table 16	Comparison of the Maximum Detected Concentrations Off-Site to Tier 2 Soil Cleanup Objectives
Table 17	VOC COPC Concentrations in Site Borings
Table 18	PAH COPCs Sorted By Boring and Compared to Final Tier 2 Objectives
Table 19	PAH Concentrations in Surface Soil Samples
Table 20	Average and Depth-Weighted COPC Concentrations in Site Borings (mg/kg) Compared to Final Tier 2 Criteria
Table 21	Comparison of Representative Soil Concentrations to Final Tier 2 Cleanup Objectives
Table 22	VOC COPC Concentrations in Surface Soil Borings Compared to the Final Tier 2 Objectives
Table 23	Comparison of Representative Concentrations of VOCs in Surface Soil to Tier Objectives
Table 24	COPC Concentrations in Surface Soil Samples Compared to Commercial/Industrial Pathway Specific Criteria (mg/kg)
Table 25	Trichloroethylene - Basis for the Tier 2 Criteria Exceeded for Boring Averages (mg/kg)
Table 26	Carbon Tetrachloride - Basis for the Tier 2 Criteria Exceeded for Boring Averages (mg/kg)
Table 27	Comparison of Representative Soil Concentrations to Final Tier 3 Cleanup Objectives Based on the Jury Model
Table 28	Determination of Compliance with Soil Attenuation Capacity
Table 29	Samples Exceeding the Tier 1 Default Attenuation Criteria
Table 30	Attenuation Capacity - Comparison to Site-Specific Total Organic Carbon Content
Table 31	Evaluation of the Sample Exceeding the Tier 2 Attenuation Criteria
Table 32	Summary of Comparison to Final Tier 2 and Tier 3 Cleanup Objectives

Appendices

Appendix A	Soil Boring Logs
Appendix B	Laboratory Data
Appendix C	Permeability Tests
Appendix D	Refined Fate and Transport

Figures

Figure 1	Boring Locations and Groundwater Elevations
Figure 2	Conceptual Site Model

Detrex CORPORATION
24901 NORTHWESTERN HWY • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 799-7192

April 30, 2002

Ms. Mary Regal
ILEPA, WMD
1021 N. Grand Ave. East
Mail Code 33
PO Box 19276
Springfield IL 62794-9276
VIA: UPS Overnight Delivery

RE: Part B Permit Application
Detrex Corporation
2537 Lemoyne Ave.
Melrose Park IL 60160

Dear Ms. Regal:

Enclosed are 4 copies of the renewal application for our facility located at 2537 Lemoyne Ave. As per our phone conversation of today, it is my understanding that you will forward USEPA their copy of the application.

If you have any questions regarding this application please feel free to give me a call.

Sincerely,

David Craig, CET, CHMM
Manager of Environmental and Safety Compliance

CC: File
Facility
S. Miles – DTRX

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE MANAGEMENT RCRA PART B PERMIT

Detrex Corporation
Attn: Mr. Robert Currie
P.O. Box 5111
Southfield, MI 48086-5111

Illinois EPA #0311860003 -- Cook County
USEPA ILD074424938
Detrex Corporation, Melrose Park Facility
RCRA Permit No. 113R-M-3
RCRA -- Part B Permit File

Issue Date: October 9, 2003
Effective Date: November 13, 2003
Expiration Date: October 9, 2013
Modification Date: DEC 0 2 2010

A RCRA Part B renewal Permit is hereby proposed pursuant to the Resource Conservation and Recovery Act, Illinois Environmental Protection Act, and Title 35 Illinois Administrative Code (I.A.C.) Parts 702, 703, 705, and 720 through 729 to the Detrex Corporation Melrose Park facility to operate a waste management facility involved in the storage of hazardous waste. Detrex Corporation is located at 2537 LeMoyne Avenue, Melrose Park, Illinois.

This permit consists of the conditions contained herein (including those in any attachments and appendices) and applicable regulations contained in the Illinois Environmental Protection Act and Title 35 I.A.C. Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit. The Environmental Protection Act (Ill. Rev. Stat., Chapter 111 2, Section 1039) grants the Illinois Environmental Protection Agency the authority to impose conditions on permits which is issued. This Permit contains 90 pages including Attachments A through F.

If you have any questions regarding this Part B Permit, please contact Mary Riegle at 217/524-3329.

RECEIVED
DEC 1 5 REC'D
DETREX CORPORATION

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:MER:bjh\982691s.doc

Detrex CORPORATION
PO BOX 5111 ^ SOUTHFIELD MI 48086-5111 ^ (248) 358-5800 ^ FAX (248) 799-7192

September 24, 2004

Mr. James K. Moore
Manager, Corrective Action Unit
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

RE: Report for groundwater sampling results and analysis from the 05-24-2004 sampling event.

Dear Mr. Moore,

This letter is being submitted with the latest sample results of the monitoring wells for Detrex Corporation located in Melrose Park. As suggested during our meeting, the scope of this response is limited to allow us to move forward in steps. The sample results combined with previous data are being used to analyze the data and to help determine data gaps. Detrex Corporation wants to address data gaps while minimizing overall data collection needs with the desire of moving in the direction of eliminating the Groundwater (GW) pathways.

To follow is a brief overview of conditions at the site inclusive of past data and how it relates to the recent sampling event.

Site Overview

- The following can be stated regarding surface water (Attachment 1):
  1. There are no surface water bodies in the area.
  2. Silver Creek is approximately 2,400 feet east-northeast of the facility and flows to the Des Plains River about 1.8 miles to the east.
  3. The asphalt parking areas, roadways and storm sewers as well as the railway spur direct surface water flow in the area. The railway siding behind the site was established by excavating the area to a depth of approximately 4 feet below grade with a gradual slope to the east. A wooden retaining wall provides soil support to the north with building foundations typically existing along the southern portion of the siding. This rail siding is no longer in use.
- The shallow GW appears to support a condition of perched water (Attachment 2). This is supported by:
  1. GW elevation surveys showing a marked variance in water levels from well to well during any given sampling event as measured by an electric water level indicator.
  2. These surveys also indicate that periodically, certain wells are dry while others are not.
  3. Moisture content drops with depth in the soil, ranging from 23.5 % at 7 to 9 feet dropping to 9.2% at around 50 feet.
  4. The cross-sectional maps show there is a confining layer of predominately clay material below the site and the surrounding area of the site. The upper portion of the Glaciolacustrine Unit consists of clay. A silt/clay layer was encountered beneath the clay. The lower portion of the Glaciolacustrine Unit consists primarily of clay.
  5. Shallow GW is not a drinking water source on-site and the water does not appear to be hydraulically linked to a water-bearing zone that is being used for production wells or drinking water wells (see attachment 3).
- Past data supports the conclusion that the mobility of water and solvents through the soil is likely to be slow (Attachment 2 & 4):
  1. Slug Test, the hydraulic conductivity test results from monitoring wells MW-1, MW-2, MW-5, and MW-6 indicate a geometric mean of 3.32E-06 ft/min (1.69E-06 cm/sec).

2. Permeability of soils was conducted on BH 14, BH 25, BH 29, BH31 and DM-1. The hydraulic conductivity from borings DM-1 at 3-5, 7-9, & 13-15 feet are 2.5E-08, 2.82E-06, & 4.7E-08 cm/s respectively with an average value of 9.46E-07 cm/s. This value is within geometric mean found for the other hydraulic conductivity tests performed.
3. Predominant fine-grained soils, 60 % percent passing the #200 sieve, represent soil in the area.
4. A decrease in VOC concentrations occurs at depths greater than 14 ft bgs and it is not likely that VOC concentrations would be a concern below 30 feet (based on soil density and readings from DM-2).

- The source is not located within a minimum or designated maximum setback zone (Attachment 3).
  1. Wells installed between 1920 – 1950 were drilled to depth – 142 feet to 2,117 feet.
  2. Based on calculations the distances of wells near the site are located farther than the setback zone.
- Previously, geological findings and hydrogeological data with justification that the GW would be 'Class II: General Resource Groundwater' was presented in the Phase II RCRA Facility Investigation (Stage 1 of 2) Report, Section 4.7, Groundwater Classification.
- The GW appears to be perched with low hydraulic conductivity in the native material under and surrounding the site. Behind the facility, there appears to be an area where preferential movement may have been faster due to movement along a storm water utility drainage line in the rail siding (Attachment 1). Recent sampling indicates there was an increase in GW readings along this drainage line mainly to the east.
- In looking at the data and delineation of the GW, the following points can be shown:
  1. MW 6 had a reading of 1 ppb.
  2. MW 4 had a reading of 1 ppb. MW 3 had a reading of 99 ppb. The results from calculations using Equation R12, shows MW 3 would quickly reach drinking water criteria. Native materials in the area will limit movement of constituents and calculations show an endpoint would be reached with little extension in distance for both groundwater and soil contamination. (Attachment 3).
  3. A GW grab Sample from BH 44 showed 5 ppb.
     This provides reading to the west MW6, to the south (MW4 & MW3), and to the north (BH44) where readings for water met drinking water criteria of 5 ppb.
  4. A reading at MW 5, over 300 feet to the east of our site, indicates an increase in the presence of constituents in the groundwater. Due to the distance east from the facility and due to the fact that there is surface soil contamination, it is not clear that this contamination would be entirely from Detrex Corporation. To better understand conditions to the east of the site, additional data is needed.
- The locations of city utility lines and a storm water drain along the railroad easement have been determined and are presented in Attachment 1.
- Ordnances prohibiting groundwater use are in place for the Village of Melrose Park (VMP) (Attachment 5):
  1. Ordinance NO. 321 issued by Village of Melrose Park (VMP), Cook County of Illinois on November 24, 1997 prohibits the use of groundwater as a potable water supply by the installation or use of potable water supply wells or by any other method.
  2. Ordinance No. 509 issued by VMP, Cook County of Illinois on April 24, 2000 established a MOU between the VMP and the ILEPA in connection with institutional controls for the use of groundwater as a potable water supply.

Groundwater Levels

A groundwater summary table and the analytical results from the recent round of well sampling are presented as Attachment 2. It can be noted that groundwater constituents increased along the storm water drain line that slopes to the east running just north of the railroad siding. This is a 10 inch storm water drain line with the top of the pipe approximately 18 inches below grade behind the facility. In order to establish a clear end point to the east, Detrex Corporation is proposing an additional monitoring well to the east.

The table in Attachment 2 presents the variation in depth to groundwater from all sampling events with water levels allowed to equilibrate overnight.

Summary and Conclusions

Detrex Corporation has a desire to eliminate the GW ingestion pathway. The shallow GW is not likely to be linked to any production wells or to any drinking water wells. The data collected shows native materials in the area would likely limit movement of constituents and keep the deep groundwater from being affected. The lack of surface water in the area and the natural native materials provide protection for GW. However, the potential for migration of constituents by a preferential pathways along the railroad siding needs further investigation.

With the GW data and soil data collected up to this point, and the existence of higher readings along the storm sewer in the railroad easement, there is a concern for preferential pathway movement to the east, along the railroad easement, the low point at the site. Readings indicate groundwater contamination along the railroad easement has increased; however, as we move further east, it is not clear that the contamination is entirely from Detrex Corporation. There is contamination at the surface or shallow soil at this distance which is over 300 feet from the facility.

Detrex Corporation feels additional data is needed to address the groundwater pathway and to address the issue of exceeding soil saturation (Csat) criteria. Detrex is therefore proposing to develop at least one additional monitoring well east of MW 5 to provide additional data to help understand conditions at the site. This is needed to assure proper characterization per 742.120. Detrex Corporation is also proposing to place a confirmatory boring next to boring BH 3 to a similar depth of 14' to show conditions are stable and/or values are now under the calculated Csat numbers. Since BH 3 had the highest VOC value which also exceeded Csat, and since it also had an additional point over calculated values, it was selected to represent site conditions over time for points of concern. Boring logs for all locations of concern on Csat have been enclosed. It should be noted that no free liquids were noted in any of the boring logs.

The additional information will be used to aid in the GW pathway analysis. Soil attenuation and Csat will be addressed in the next submittal.

Thank you for your time. Should you have any questions or comments please contact Mr. David Craig at 248-358-5800 extension 131 or Mr. Stan Miles at 317-842-2225.

Sincerely,

Stan Miles
Compliance Project Manager

CC: File

Attachments:

1) Maps and Figures
   a) Site Location map
   b) Land use
   c) Site topographical survey
   d) Site Layout
   e) Storm Water and Water Line figure
   f) TCE groundwater data
   g) TCE soil data
2) Geotechnical data
   a) Groundwater elevation data
   b) Groundwater Elevation Survey
   c) Groundwater Elevation and Contour figure
   d) Summary of Site Specific Geotechnical Data
   e) Summary of Hydraulic Conductivity

f) Borings DM1 and DM2
   i) Analytical Reports
   ii) Boring logs
g) Site Cross section diagrams
h) Well Completion Reports and Boring Logs
i) Boring logs for Csat locations
j) Permeability test results (DM-1 & 2)
k) Soil Saturation Data
l) Gradation Curve

3) Well information
   a) Private Well Location
   b) Production Well Table
   c) Water well survey map
   d) Calculated Distances
   e) Groundwater Ingestion – Soil and Groundwater Components
   f) Groundwater Fate and Transport Model

4) data
   a) GW Summary Table
   b) Soil Data
   c) MW Sampling Lab Data May 24, 2004

5) Ordinance
   a) Ordinance prohibiting groundwater use in Melrose Park (321)
   b) Memorandum of Understanding (Ordinance 509)

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Detrex Corporation

Summary of Environmental Conditions and Work Plan for Detrex Corporation Facility Located in Melrose Park, Illinois

October 30, 2006

ARCADIS

Summary of Environmental Conditions and Work Plan for Detrex Corporation Facility in Melrose Park, Illinois

Stephen Vasas
Project Geologist

Jeanine Klump
Project Scientist

Betty Locey, Ph.D., DABT
Principal Scientist/ Regional Risk Coordinator

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0002
Date:
October 30, 2006

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Table of Contents

1. Introduction **1**

2. Background Site Information **1**

2.1 Historical Operations 2

2.2 Potential Source Areas 2

2.3 Topography 5

2.4 Subsurface Conditions 5

2.4.1 Regional Geology 5

2.4.2 Site Geology 6

2.4.3 Regional Hydrogeology 7

2.4.4 Site Hydrogeology 7

2.5 Data Collection 9

2.5.1 Phase I RFI 1994 10

2.5.2 Phase II (Stage 1) RFI 11

2.5.3 Phase II (Stage 2) RFI 12

2.5.4 Additional Data Collection in 1997 13

2.5.5 Additional Data Collection in 2004 14

3. Response to September 5, 2006 IEPA Letter **14**

3.1 IEPA Comment 1: 14

3.2 IEPA Comment 2: 14

3.3 IEPA Comment 3: 20

3.4 IEPA Comment 4: 21

3.5 IEPA Comment 5: 22

3.6 IEPA Comment 6: 22

4. Detrex May 2006 Workplan Addendum **25**

5. References **26**

Attachments

1 IEPA September 5, 2006 comments

2 Scaled site map depicting all the SWMUs (ESE).

3 IEPA Correspondence

4 Figures
Figure 1. Scaled Site Map (ARCADIS).
Figure 2: Scaled Site Map w/ focus on the Detrex Facility

5 Figures
Scaled Surrounding Properties Figure with Select Sampling Locations (Dames & Moore)
Scaled Surrounding Properties Map.

6 Soil Boring Logs and Monitoring Well Construction Diagrams.

7 Cross Sections
Cross-Section Location Map,
Cross-Section A-A',
Cross Section B-B'
Cross Section C-C

8 Groundwater Elevations and Assumed Flow
Historical Groundwater Elevation Table and
Groundwater Elevation Contour Maps for August 26, 1997 and May 21, 2004

9 Tables
Summary of Hydraulic Conductivities Table
Summary of Geotechnical Data Table

10 Water Production Well Table
Water Well Survey Map (ARCADIS)
Water Well Survey Map (Illinois Source Water Assessment Program).

11 Data Tables
Summary of Soil Analytical Data
Summary of Groundwater Analytical Data

12 Figures
TCE Soil Analytical Results Figure
Unsaturated Surface Soil TCE Analytical Results
TCE Groundwater Analytical Results

13 Calculated Soil Saturation Values
Soil Saturation Calculations (Tier 1, Tier 2, and Tier 3) Compared to Soil Analytical Results

14 Proposed Soil Boring and Monitoring Well Location Map

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Detrex Corporation

Phase III

Summary of Environmental Conditions Report

for Detrex Corporation Facility Located in Melrose Park, Illinois

May 5, 2008

Volume 1 of 2

ARCADIS

Summary of Environmental Conditions Report for Detrex Corporation Facility in Melrose Park, Illinois

Stephen Vasas, PG
Project Geologist

Jeanine Roberts
Project Scientist

Betty Locey, Ph.D., DABT
Principal Scientist

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0002
Date:
May 6, 2008

Table of Contents

1. Introduction **1**

1.1 Background 1

1.2 Regulatory Framework 2

1.3 Certifications 3

2. Site Characteristics **4**

2.1 Location and Setting 4

2.2 Subsurface Conditions 5

2.2.1 Regional Geology 5

2.2.2 Site Geology 5

2.2.3 Regional Hydrogeology 7

2.2.4 Site Hydrogeology 7

2.3 Groundwater Classification 8

2.4 Groundwater Use 9

2.5 Topography 10

2.6 Storm Water 10

2.7 Surface Water 11

2.8 Climate 11

3. Detrex's Historical Operations **11**

3.1 Potential Site Related Source Areas 12

3.1.1 Virgin Product and Waste Handling Areas 12

3.1.2 Solid Waste Management Units (SWMUs) 13

4. Data Collection **14**

4.1 Summary 15

4.1.1 Summary of Data Collection Events 15

4.2 Delineation 17

4.3 Historical Site Investigation Activities (1994 to 2006) 17

4.3.1 Phase I RFI 1994 18

4.3.2 Phase II (Stage 1) RFI 18

4.3.3 Phase II (Stage 2) RFI 20

4.3.4 Additional Data Collection in 1997 21

4.3.5 Additional Data Collection in 2004 22

4.4 Site Investigation Activities (2007 to 2008) 22

4.4.1 January 2007 22

4.4.2 April 2007 23

4.4.3 July 2007 24

4.4.4 September 2007 25

4.4.5 March 2008 25

4.5 Quality assurance/quality control procedures 26

4.6 Data Collected by Adjacent Property Owners 26

4.6.1 Handy Button Data 26

5. Analytical Data 27

5.1 Soil Data 27

5.2 Groundwater 27

5.3 Data Quality 28

5.4 Data Set Used to Evaluate Site Conditions 28

6. Historical Property Use and Other Sources in Melrose Park 29

6.1 Southern Property – Handy Button 30

6.1.1 Potential Sources of Chlorinated VOCs 30

6.1.2 Data 31

6.2 Western Properties 33

6.2.1 Potential Sources of Chlorinated VOCs 34

6.2.2 Data 34

6.3 Eastern Properties 36

6.3.1 Potential Sources of Chlorinated VOCs 37

6.3.2 Data 38

6.4 Northern Properties 42

6.4.1 Potential Chlorinated VOC Sources 42

7. Tiered Analysis 43

7.1 Soil Saturation and Soil Attenuation Evaluation 43

7.1.1 Soil Saturation 43

7.1.2 Attenuation Capacity 45

7.1.3 Free-phased Material Investigation 45

7.2 Tier 1 Evaluation 46

7.2.1 Potential for Human Exposure 46

7.2.1.1 Exposure Pathways 46

7.2.1.2 Source Areas 46

7.2.1.3 Land Use 47

7.2.1.4 Potentially Exposed Populations and Complete Exposure Pathways 47

7.2.1.5 Conceptual Site Model 48

7.2.2 Relevant Tier 1 Objectives 48

7.2.3 Comparison to Tier 1 Criteria 50

7.2.3.1 Soil 50

7.2.3.2 Groundwater 52

7.2.4 Discussion 53

7.2.4.1 PAHs 54

7.2.4.2 Constituent Lacking TACO Objectives 54

7.3 Site-Specific - Tier 3 Evaluation 55

7.3.1.1 Protection of Indoor Air 55

7.4 Summary and Discussion 59

7.4.1 On-Site 59

7.4.1.1 On-site Workers 59

7.4.1.2 Construction Workers 60

7.4.2 Off Site 61

7.4.2.1 Western Properties 61

7.4.2.2 Southern Properties 61

7.4.2.3 Eastern Properties 62

8. Conclusions and Recommended Actions 62

8.1 Conclusions 62

8.2 Actions 63

9. References 64

Figures

1 Site Location Map

2 Site Layout

3 Historical Property Use

4 Soil Boring and Monitoring Well Locations

5 Cross-Section Locations

6 Cross-Sections A-A', B-B' and C-C'

7 Groundwater Elevations April 2007

8 Groundwater Elevations September 2007

9 Groundwater Elevations March 2008

10 TCE Concentrations in Unsaturated Soil Samples

11 TCE Concentrations in All Soil Samples

12 Conceptual Site Model

Tables

Table 1 Summary of All Soil Analytical Data

Table 2 Summary of Unsaturated Soil Samples

Table 3 Summary of All Saturated Soil Data

Table 4 Summary of All Groundwater Data

Table 5 Geotechnical Data

Table 6 Summary of Groundwater Levels

Table 7 Comparison of All Unsaturated Soil Data to Applicable Tier 1 Residential Criteria

Table 8 Comparison of All Unsaturated Soil Data to Draft Tier 1 Residential Criteria Protective of Indoor Air

Table 9 Comparison of Groundwater Data to Applicable Tier 1 Class II Criteria

Table 10 Comparison of Groundwater Data to Draft Groundwater Criteria Protective of Indoor Air

Table 11 Comparison of All On-Site Unsaturated Soil Data to Industrial/Commercial and Construction Worker Criteria

Table 12 Comparison of All On-Site Unsaturated Soil Data to Draft Industrial Criteria Protective of Indoor Air

Table 13 Comparison of All Off-site Unsaturated Soil Data to TACO Industrial/ Commercial and Construction Worker Criteria

Table 14 Comparison of All Off-Site Unsaturated Soil Data to Draft Tier 1 Residential Criteria Protective of Indoor Air

Table 15 Comparison of Unsaturated Soil to Default, Site-Specific, and Tier 3 Soil Saturation Levels

Table 16 Summary of Unsaturated Soil Samples Exceeding Default Soil Saturation Limits (Csat) Compared to Calculated Site-Specific and Tier 3 Csat Values

Table 17 Comparison of Groundwater Data to Draft Industrial/Commercial Criteria Protective of Indoor Air

Appendices

Appendix A RCRA Certification Forms

Appendix B Relevant Melrose Park and IEPA Ordinances

Appendix C Water Well Survey

Appendix D Historical Topographic Maps

Appendix E Locations of Utilities

Appendix F RCRA Permit Figure

Appendix G Soil Boring and Monitoring Well Logs

Appendix H Laboratory Analytical Reports – 2006 Through 2008

Appendix I Historical Aerial Photographs

Appendix J City Directory Reports

Appendix K Soil Impacts (3-Dimensional Modeling Views and Pioneer Data)

Appendix L EDR Report

Appendix M Example Site-Specific and Tier 3 Soil Saturation Calculations

ARCADIS
Infrastructure, environment, facilities

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Additional Information for the Detrex Corporation Facility
Located at 2537 Le Moyne Avenue in Melrose Park, Illinois

Date:
October 2, 2008

Contact:
Betty Locey, Ph.D., DABT

Phone:
284.994.2263

Email:
betty.locey@arcadis-us.com

Our ref:
SFE04017.03

Dear Ms. Boley:

ARCADIS respectfully submits additional information requested by the Illinois Environmental Protection Agency (IEPA) on behalf of the Detrex Corporation (Detrex). This information adds to the information previously submitted in the *Phase III Summary of Environmental Conditions Report* (Phase III Report) submitted to IEPA in May 2008. The following information was requested by IEPA (summarized in Friday September 19, 2008 IEPA email).

- "Updated groundwater flow maps";
- "A depiction of the Detrex sources contributing to groundwater contamination and the extent of that contamination";
- "A depiction and/or discussion of the relationship of known soil contamination and how it demonstrates that portions of groundwater contamination are from other sources besides the facility";
- "Proposed constituents of concern for groundwater"; and
- "A discussion that verifies free product has not been observed in groundwater".

The following Attachments are included with this letter:

- Attachment 1: Figures 1 through 7 and a Figure prepared by Handy Button's consultant

- Attachment 2: Tables summarizing trichloroethylene (TCE) soil data by elevation

1 Updated Groundwater Flow Maps

Based on the geology and hydrogeology in the area of the site, typical hydraulic gradients are very low (less than 0.005 feet per foot) and the hydraulic conductivity is low (ranged from 2.05×10^{-6} to 2.92×10^{-8} centimeter per second [cm/sec]). Based on these hydraulic properties, it is generally difficult to interrupt a hydraulic flow direction; and therefore, the hydraulic gradients were not presented previously. However, at the request of the IEPA, hydraulic flow interpretations are attached as Figure 1 through Figure 3 (Attachment 1).

- Figure 1. Groundwater Elevation Map. March 14, 2008
- Figure 2. Groundwater Elevation Map. April 27, 2007
- Figure 3. Groundwater Elevation Map. September 11, 2007

It appears that the apparent groundwater flow is greatly influenced by the geometry of the monitoring well locations, therefore the apparent north-south flow may be an artifact of the geometry. Furthermore, apparent groundwater flow may also be influenced by local improvements (e.g. railroad siding, utility corridors, building footings) which provide preferential flow pathways. Natural groundwater flow patterns are therefore difficult to depict.

Based on the available information, the only significant groundwater features that appear to be consistent are the groundwater elevation differences between Monitoring Wells MW-10 and MW-1, and Monitoring Wells MW-5 and MW-9. Groundwater around Monitoring Well MW-10 consistently appears to flow towards Monitoring Well MW-1 and the Detrex property, and groundwater around Monitoring Well MW-9 consistently appears to flow towards Monitoring Well MW-5.

Groundwater elevations recorded by Handy Button's consultants for wells near and beneath their building are summarized in a Figure prepared by their consultant is also provided in Attachment 1 for reference.

It is important to note that the observed groundwater impacts appear to be more related to local soil impacts than to groundwater migration.

2 Groundwater Isoconcentration Map

A depiction of the Detrex sources contributing to groundwater contamination and the extent of that contamination is provided in Figure 4 (Groundwater Isoconcentration Map of Trichloroethene. April 2007). (Figure 4 is provided as Attachment 1.)

The use of groundwater as a potable source in Melrose Park is prohibited by a City Ordinance as discussed in the Phase III Report Groundwater samples collected at MW-8, MW-6, BH-40, and BH-44 indicate that groundwater impacts (multiple plumes) associated with Detrex, LaMantia, Handy Button, and other historical sources are delineated within the City of Melrose Park; therefore the groundwater ingestion pathway can be excluded since an institutional control is already in place.

3 Pattern of Constituents in the Soil

The following three figures provide a depiction of impacts to soil at the site and on nearby properties. As discussed previously, several areas of chlorinated impacts are evident in the area that are not attributable to historical operations on the Detrex property. The impacts have been presented based on elevation above mean sea level (amsl), as ground surface varies significantly across the area. Figures 5 and 6 of the Phase III Report illustrate the change in surface elevation (cross-sections). The following figures show the distribution of TCE in soils at different elevations:

- Figure 5. Distribution of TCE in Soils at 630 Feet;
- Figure 6. Distribution of TCE in Soils at 620 Feet; and
- Figure 7. Distribution of TCE in Soils at 610 Feet.

These figures are included in Attachment 1. Soil distribution maps are extracted images from the enhanced visualization model included in the Phase III Report and

presented at the February 2008 meeting. The elevations depicted in the attached figures present a surface elevation (630 feet above amsl); a mid-depth elevation (620 feet amsl) and an elevation at depth (610 feet amsl).

In addition, tables summarizing soil TCE data by elevation in a few key areas are included as Attachment 2 (previously presented in Appendix K of the Phase III Report).

4 Local Source Areas

Over the past 30 years, other businesses and facilities located on neighboring properties have used or were likely to have used chlorinated solvents. Data and information collected thus far identify several local known and/or suspected sources that either bound, or are commingled with, impacts associated with Detrex's historical operations.

Residual constituents in soil are indicative of sources that have impacted groundwater. Constituents in soil and groundwater may migrate through environmental media over time. Areas identified as source areas are listed and briefly discussed below. These are discussed in detail in Section 6 of the Phase III Report (2008).

Detrex Facility

- Dock area facing Le Moyne Avenue (south)
  - Historical release of 1,1,1-trichloroethane (1,1,1-TCA) in the front dock area.
  - Impacts appear to have migrated to the south towards Handy Button, and to the west towards Outback Sales.
- Dock area facing the railroad (north)
  - Historical release of TCE from a railcar on the railroad siding.
  - Impacts appear to have migrated along the railroad siding, north, and towards Outback Sales (west).

Other Nearby Melrose Park Sources

Several other sources of chlorinated volatile organic compounds (VOCs) are present in the area. Soil source areas on the Handy Button and LaMantia properties can be identified on the Figures 5 through 7 (Attachment 1). These depict TCE concentrations in soil based on interpolation of available data, for three elevations (630 feet, 620 feet, and 610 feet). In addition, soil data collected in the area are summarized by elevation and location in tables included in Attachment 2.

- Impacts beneath and near Handy Button (1740/1750 North 25th Avenue) located south of Detrex, across Le Moyne Avenue, are attributable to historical activities at this location.
  - Soil Borings B-101 through B-509 show the following (see Table in Attachment 2 titled "Summary of TCE Data by Elevation Between B-401 (Handy Button) and BH03 (Detrex Dock)").
    - Shallow source areas beneath building (0-3 feet below ground surface [bgs] TCE detections) and deeper concentrations that are positioned in a way that they cannot be related to Detrex's operations.
    - Handy Button had a degreaser which was located near the front (north side) of their building and had a trench running towards Le Moyne Avenue. Degreaser was located next to Soil Boring B-206 (MW-101), which had the highest concentration of TCE (17,000,000 micrograms per kilogram [µg/kg]) detected in soil in the area of the Detrex and surrounding properties.
  - Handy Button's impacts extend towards Le Moyne Avenue and are expected to commingle with Detrex's impacts beneath Le Moyne Avenue.
    - Detrex is working with the owners of Handy Button on areas between the two buildings where impacts may be commingled.
    - Detrex is working on an application for a Highway Authority agreement that would limit potential contact with constituents beneath Le Moyne Avenue between the two buildings that may be attributable to either site.
- Eastern portion of the LaMantia building (2525 West Le Moyne Avenue) (adjacent property to the east of Detrex) appears to be the source of chlorinated VOCs to the area and railroad track behind their building.
  - Impacts beneath the northeast corner of the LaMantia building.

- o BH22/MW-2, BG1/MW-5, HA-01, and MW-9 (see Attachment 2, "Summary of TCE Data by Elevation Between Eastern Side of Detrex (North Property Line) and LaMantia").

- The eastern-most portion of the LaMantia building was used as ball bearing facilities by several previous owners/tenants. Ball bearing facilities routinely used chlorinated VOCs for degreasing.
- Near-surface or surface TCE concentrations in soil decrease between BH22/MW-2 and HA-01 and HA-02, which are located just east of the Detrex property behind the northwestern corner of the LaMantia building (from 210,000 µg/kg to less than 25 µg/kg), and then increase at HA-04 and MW-5 to MW-9..
  - o Impacts are at a higher elevation than source areas behind the Detrex property and are over 300 feet from the facility.
  - o Concentrations of TCE in soil near the surface increase from MW-5 (2,300 µg/kg) and HA-04 (3,600 µg/kg) to MW-9 (7,580 µg/kg).
  - o Concentrations at HA-04, MW-5, and MW-9 cannot be attributable to Detrex.

- Concentrations of TCE in deeper soil decrease from BH22/MW-2 (1,200,000 µg/kg) to BG1/MW-5 (3,500 µg/kg) and then increase to MW-9 (910,000 µg/kg).
- TCE concentrations in groundwater are higher at MW-5 (308,000 µg/kg) than at MW-2 (230,000 µg/kg) or at MW-9 (32,100 µg/kg).
- Impacts near the United States Post Office (1824 North 25th Avenue) (more than 300 feet from the Detrex property) likely to be related to the historical activities in the eastern portion of the LaMantia building (1800 North 25th Avenue).
- Deep impacts may be co-mingled in certain areas.
  - o Detrex is working with LaMantia to address conditions along the railroad track where impacts may be commingled.

- Impacts east of the Sitex building. MW-10 and BH39 (Sitex Corporation [former Interstate Paper]) (2575 West Le Moyne Avenue) (west of Outback, which is west of Detrex)
  - See Table in Attachment 2 titled "Summary of TCE Data by Elevation Between the Detrex and Sitex Properties"
  - Shallow soil and groundwater impacts near the Sitex Building are not likely to be related to Detrex's operations.

- Shallow depth of impacts and distance from Detrex.
- Deep impacts on the Sitex property (TCE but no tetrachloroethene [PCE]) do not show same constituent profile as the area of Detrex that would be the suspected source (both TCE and PCE).

- Deeper soil impacts (approximately 625 feet) at MW-10 (1,510,000 µg/kg) are higher than soil impacts on the western side of the Detrex building (BH17 [460,000 µg/kg], BH18 [1,200,000 µg/kg], and BH19 [920,000 µg/kg]) at approximately the same elevations.
- Near the surface, soil impacts are higher on the eastern side of the Sitex building (MW-10 [18,500 µg/kg]) than on the western side of the Outback building (AGP-11 [93.1 µg/kg]).
- Groundwater concentrations at MW-10 (34,500 micrograms per liter [µg/L] on Sitex property) are higher than at the back of the Detrex building (MW-1 [31,500 µg/L]). Concentrations of breakdown products (cis-1,2-dichloroethene and vinyl chloride) are also higher at MW-10 than at MW-1 (see Table 9 of the Phase III Report).
- The Sitex property used to be a Euclid Division of General Motors facility.

These areas are depicted on Figures 5 through 7 (see Attachment 1).

5 Constituents of Concern in Groundwater

All constituents detected at and near the site in groundwater were compared to the TACO Tier 1 Class II Remedial Objective (RO) and water solubility in Table 9 of the May 2008 Phase III Report. Based on this comparison the following were identified as constituents of potential concern (COPCs): benzene, chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; PCE; 1,1,1-TCA; TCE; and vinyl chloride.

The location of the maximum detected concentration (bold and blue) and all exceedances of the Tier 1 ROs are provided in Table 1 below:

Table 1. Summary of COPCs in Groundwater

Constituent	Maximum Detected (µg/L)	Tier 1 Class II RO (µg/L)	Locations of Exceedances (maximum detected is bolded)			
			Detrex (a)	East – Not Detrex. (b) (LaMantia)	West – Not Detrex (c) (Sitex)	South – Not Detrex (d) (Handy Button)
Benzene	38.7	25		HA-04, **MW-5**		
Chloroethane	132	4.6	MW-2	**MW-5**		
Chloroform	29.5	1	**MW-2**	HA-04, MW-5, MW-9	MW-10	
1,1-Dichloroethane	4,380	3,500		**MW-5**		
1,1-Dichloroethene	8,500	35	MW-2	MW-5	**BH-39**, MW-10	
cis-1,2-Dichloroethene	160,000	200	BH-42, MW-1, MW-2	HA-04, MW-5, MW-9	**BH-39**, MW-10	
Tetrachloroethene	1,200	25	**BH-42**, MW-1, MW-2			
1,1,1-Trichloroethane	1,300	1,000	**MW-2**			
Trichloroethene	380,000	25	BH-37, BH-42, MW-1, MW-2, MW-3	HA-04, **MW-5**, MW-9	BH-39, MW-10	BH-40
Vinyl chloride	681	10	MW-2	HA-04, MW-5	**MW-10**	

Notes

(a) Likely to be Associated with Detrex
(b) Likely Off-site Source (east of the site) (adjacent to LaMantia
(c) Likely Off-site Source (west of the site) (adjacent to Sitex)
(d) Likely Off-site Source (south of the site) (south of Handy Button)

The locations of the maximum detected concentrations in groundwater are consistent with impacts observed in soil and with the existences of multiple sources of contamination in the area.

The highest detected concentrations of TCE and benzene in groundwater are at MW-5, located behind the LaMantia building (see Table 1 above and information provided in the Phase III Report). The benzene is likely to be attributed to an underground storage tank (UST) previously located in the area near MW-5 and MW-9 behind the LaMantia building. The removal was documented in a report that ARCADIS (Mr. Stephen Vasas) briefly reviewed during a meeting with representatives of LaMantia. The report indicated that soil samples were collected in the area around the UST, tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and polynuclear aromatic Hydrocarbons (PAHs), and soils were removed as needed. It appeared no groundwater samples were collected. Like the benzene, it is likely the TCE detected in MW-5 is attributable to historical activities that occurred in this area and are not associated with activities on the Detrex property.

6 Potential for Free-phased Material in Groundwater

During groundwater sampling events, all monitoring wells were examined for free-phased material. Monitoring wells were purged dry in order to investigate the bottom of the well, since chlorinated solvents are denser than water and free-phased material would sink in the water column. Each monitoring well was purged with a dedicated polyethylene bailer. Water from each bailer was inspected for free-phased material. Water was then placed in a drum and allowed to settle. Water in the drum was further examined for free-phased material.

Free-phased material was not observed during any of the groundwater sampling activities.

Closing

Please feel free to contact us if you have questions or would like to have additional information.

Sincerely,

ARCADIS

Stephen Vasas
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:

Mr. Stan Miles, Detrex Corporation
Ms. Takako Halteman, IEPA

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Evaluation of Potential Migration of Constituents from the Detrex Melrose Park Facility

March 31, 2009

ARCADIS

Evaluation of Potential Migration of Constituents from the Detrex Melrose Park Facility

Stephen Vasas, PG
Project Geologist

Jeanine Smith
Staff Life Scientist

Betty Locey, PhD, D.A.B.T.
Principal Scientist

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.04.01

Date:
February 24, 2009

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Table of Contents

1. Introduction **1**

2. Subsurface Conditions **1**

2.1 Geology 1

2.1.1 Regional Geology 1

2.1.2 Site Geology 2

2.2 Hydrogeology 3

2.2.1 Regional Hydrogeology 3

2.2.2 Site Hydrogeology 3

3. Fate and Transport Modeling **4**

3.1 Soil Component of Groundwater Ingestion (2009) 4

3.2 Groundwater Component of Groundwater Ingestion 6

4. Conclusions **7**

5. References **8**

Appendices

A Fate and Transport Equations and Calculations

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Evaluation of Data Collected on the Outback Sales Property

July 22, 2009

ARCADIS

Evaluation of Data Collected on the Outback Sales Property

Jeanine Smith
Staff Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Principal Scientist

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.04.01

Date:
July 22, 2009

Table of Contents

1. Introduction **1**

1.1 Background 1

1.2 Detrex Facility 1

2. Setting **2**

2.1 Physical Conditions 2

2.2 Subsurface Conditions 3

2.2.1 Geology 3

2.2.2 Hydrogeology 4

2.2.2.1 Regional Hydrogeology 4

2.2.2.2 Site Hydrogeology 4

3. Site Investigation Activities **4**

3.1 Soil and Groundwater Investigations 5

3.1.1 April 5, 2007 Soil Investigation 5

3.1.2 March 14, 2008 Soil Investigation 6

3.1.3 November 19, 2008 Soil Investigation 7

3.2 Tier 3 Offsite Sub-slab Soil Gas Sampling 7

3.2.1 Sub-slab Probe Installation 8

3.2.2 Sub-slab Probe Sampling and Analysis 9

3.2.3 Leak Testing 10

3.2.4 Meteorological Conditions 11

3.2.5 Pressure Differential 11

4. Analytical Data **12**

4.1 Data analysis 12

4.1.1 Soil 13

4.1.2 Groundwater 13

4.1.3 Soil Gas 13

4.2 Data Summary 13

5. Screening Evaluation 14

5.1 Potential Exposure 14

5.2 Comparison to Tier 1 Remediation Objectives 14

5.2.1 Choice of Relevant Tier 1 Remediation Objectives 14

5.2.2 Comparison to Remediation Objectives 15

5.2.3 Conclusions 17

6. Site-Specific Evaluation 19

6.1 Vapor Intrusion Evaluation 19

6.1.1 Soil Gas Screening Levels Development 19

6.1.2 Comparison of Sub-Slab Soil Gas Data to Site-Specific Screening Levels 20

6.1.3 Mitigation of Vapor Intrusion 20

6.2 Soil and Groundwater Fate and Transport Modeling 21

6.2.1 Soil Component of Groundwater Ingestion (2009) 22

6.2.1.1 Results of Modeling 23

6.2.2 Groundwater Component of Groundwater Ingestion 24

6.2.2.1 Results of Modeling 25

6.3 Summary of Site-Specific Evaluations 25

6.3.1 Vapor Intrusion Evaluation 25

6.3.2 Fate and Transport Modeling 25

7. Conclusions and Recommendations 26

7.1 Conclusions 26

7.2 Recommendations 26

8. References 27

Tables

Table 1 Summary of Soil Analytical Data On and Near the Outback Property

Table 2 Summary of Groundwater Analytical Data On and Near the Outback Property

Table 3 Summary of Sub-Slab Soil Gas Analytical Data Collected at the Outback Property

Table 4 Comparison of Soil Analytical Data to TACO Tier 1 Residential and Construction Worker Remedial Objectives

Table 5 Comparison of Soil Analytical Data to TACO Tier 1 Commercial/Industrial and Construction Worker Remedial Objectives

Table 6 Comparison of Groundwater Analytical Data to TACO Tier 1 Class II Groundwater Remedial Objectives

Table 7 Comparison of Sub-Slab Soil Gas Analytical Data to OSWER Target Soil Gas Concentrtations

Table 8 Comparison of Sub-Slab Soil Gas Constituents of Potential Concern to Site-Specific Soil Gas Screening Levels

Figures

Figure 1 Site Location

Figure 2 Outback Site Layout

Figure 3 Sub-Slab Soil Sample Locations Outback Property

Figure 4 Sub-Slab Soil Gas Sample Locations Outback Property

Figure 5 Construction of Sub-Slab Soil Gas Sampling Probes

Figure 6 Sub-Slab Pressure Measurements

Appendices

A Site Photographs

B Aerial Photographs

C Historical Topographic Maps

D Soil Boring Logs and Groundwater Monitoring Well Construction Log

E Groundwater Elevation Maps

F Soil Analytical Laboratory Reports

G Groundwater Analytical Laboratory Reports

H Meteorological Data For Soil Gas Sampling Events

I Soil Gas Analytical Laboratory Reports

J Johnson and Ettinger Model Documentation

K Fate and Transport Equations and Calculations

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Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Additional Off-Site Investigation Work Plan

Detrex Corporation
Melrose Park, Illinois

November 19, 2009

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 11/30/09
(Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: Robert M. Currie 11/30/09
(Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** ***(if necessary)*** - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ _____
Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** ***(if necessary)*** - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Additional Off-Site Investigation Work Plan
Date of Submittal 11/30/09

IEPA Permit Log No. B-113-CA-8
Date of Last IEPA Letter on Project July 9, 2009
Log No. of Last IEPA Letter on Project CA 8 and 9
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Work Plan detailing additional off-site investigation activities to delineate off-site groundwater impacts associated with the Detrex Site.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Additional Off-Site Investigation Work Plan, 11/18/09

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

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2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident

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Professional's Signature: _____ 11-19-09 Date

Professional's Name: Stephen Vasas

Professional's Seal:

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

ARCADIS

Landon Eenigenburg
Staff Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Additional Off-Site Investigation Work Plan

Detrex Corporation
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0004

Date:
November 19, 2009

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1. Introduction **1**

2. Background **1**

2.1 Site Layout 2

2.2 Regional Geology 3

2.3 Site Geology 4

2.4 Regional Hydrogeology 5

2.5 Site Hydrogeology 5

3. Additional Investigation and Delineation Activities **6**

3.1 Additional Investigation Methodology 7

3.1.1 Soil Boring and Monitoring Well Installation 7

3.1.2 Focused Groundwater Field Screening 8

3.1.3 Monitoring Well Development 8

3.1.4 Monitoring Well Survey 9

3.1.5 Groundwater Sampling and Analysis 9

3.2 Proposed Boring Locations 10

3.3 Monitoring Well Abandonment 11

3.4 Quality Assurance/Quality Control 11

3.5 Decontamination and Waste Disposal Procedures 12

4. Data Analysis and Validation **13**

5. Health and Safety **13**

6. Schedule **14**

7. References **14**

Figures

Figure 1 Site Location Map

Figure 2 Proposed Monitoring Well Locations

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Detrex Corporation

Corrective Measures Plan - Phase I

Melrose Park Facility, Melrose Park, Illinois

December 15, 2009

ARCADIS

Corrective Measures Plan – Phase I

Melrose Park Facility, Melrose Park, Illinois

Jeanine Smith
Project Life Scientist

Stephen Vasas
Project Geologist, PG

Jackie Saling, PE
Project Engineer

Mark Klemmer, PE
Senior Engineer

Betty Locey, PhD, DABT
Principal Scientist

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0004

Date:
December 15, 2009

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Table of Contents

1. Introduction and Purpose **1**

1.1 Background 1

1.2 Purpose 4

1.3 Scope of the Project 4

2. Existing Site Conditions **5**

2.1 Previous Investigations 5

2.1.1 Data Summary 5

2.1.2 Summary of Site Investigations 6

2.1.3 Laboratory Analyses 8

2.2 Extent of CAO Exceedances 8

2.2.1 Trichloroethene 9

2.2.2 Tetrachloroethene 9

2.2.3 1,1,1-Trichloroethane 9

3. Evaluation of Potential for Future Migration **10**

3.1 Geological Conceptual Site Model 10

3.1.1 Regional Geology 10

3.1.2 Site Geology 11

3.1.3 Regional Hydrogeology 12

3.1.4 Site Hydrogeology 12

3.1.5 Groundwater Classification 13

3.1.6 Groundwater Use 14

3.1.7 Topography 15

3.1.8 Storm Water 15

3.1.9 Surface Water 15

3.1.10 Climate 16

3.2 Chemical-Specific Information 16

3.3 Fate and Transport for Chemicals of Concern 16

3.3.1 Soil Component of Groundwater Ingestion (2009) 17

3.3.1.1 Results 18

3.3.2 Groundwater Component of Groundwater Ingestion 18

3.3.2.1 Results 19

3.4 Conclusions 19

4. Identification of Options Available 20

4.1 High Vacuum Extraction 21

4.2 Oxidant Infusion 22

4.3 In situ Soil Mixing with an Oxidant 23

4.4 In situ Heating 24

4.5 Excavation 26

5. Description of Selected Corrective Measures 27

6. Corrective Measures Objectives 27

7. Identification of Design Criteria 28

8. Review of Available Information 29

9. Procedures for Completing the Design 30

9.1 High-vacuum Extraction Pilot Test 30

9.2 Oxidant Diffusion Pilot Test 31

10. Identification of Required Permits 33

11. Long-Lead Procurement Considerations 34

12. Project Management 34

12.1 Personnel 34

12.2 Schedule 37

13. Summary 37

14. References 37

Tables

Table 1 Summary of All On-Site Soil Data

Table 2 Summary of All Groundwater Data

Table 3 Summary of Geotechnical Data

Table 4 Groundwater Levels

Table 5 Comparison of On-Site Soil Data to Csat Levels

Table 6 Summary of Csat Exceedances on the Detrex Property

Table 7 Summary of Chemical-Physical Properties for TCE, PCE and 1,1,1-TCA

Table 8 Remedial Options Evaluation

Figures

Figure 1 Site Location Map

Figure 2 Site Layout Map

Figure 3 Soil Boring and Monitoring Well Location Map

Figure 4 Cross-Section Location Map

Figure 5 Cross-Sections

Figure 6 Locations of On-Site Soil Samples Exceeding Site-Specific Csat Levels

Figure 7 Locations of Off-Site Soil Samples Exceeding Site-Specific Csat Levels

Figure 8 Sample Locations where Trichloroethene (TCE) was Detected at Concentrations Greater than Site-Specific Soil Saturation (Csat), Detrex Corporation Melrose Park Facility

Figure 9 Sample Locations where Tetrachloroethene (PCE) was Detected at Concentrations Greater than Site-Specific Soil Saturation (Csat), Detrex Corporation Melrose Park Facility

Figure 10 Vertical Extent of 1,1,1-Trichloroethane Above Corrective Action Objectives

Figure 11 Pilot Test Layout

Figure 12 General High-vacuum Extraction Process and Instrumentation Diagram

Figure 13 Conceptual Full Scale Layout for High Vacuum Extraction

Figure 14 Conceptual Full Scale Layout for Oxidant Diffusion

Appendices

A Site Photographs

B Soil Data Summary

C On-Site Soil Boring and Monitoring Well Construction Logs

D 3-D Models of TCE and PCE Exceedances (on CD)

E Fate and Transport Modeling

F Example Remedial Option Calculations

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

Street Address: 2537 W. Le Moyne

City: Melrose Park

County: Cook

Site No. (IEPA): 0311860003

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Site Investigation Completion Report
Date of Submittal 3/28/11

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project March 9, 2011
Log No. of Last IEPA Letter on Project B-113R-CA-16
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Site Investigation Summary Report detailing the investigation completed in June 2010 and groundwater sampling conducted in 2010.

This submittal also provides the Proposed Groundwater Monitoring Zone and information relating to the exclusion of the groundwater ingestion pathway.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Site Investigation Completion Report, dated March 28, 2011.

7.0 CERTIFICATION STATEMENT - *(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).* The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 3-28-11 (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: Robert M. Currie 3-28-11 (Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

Name and Title of Laboratory Responsible Officer

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Professional's Signature: _____ 3-28-11

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

Professional's Seal: LICENSED PROFESSIONAL GEOLOGIST STEPHEN MICHAEL VASAS 196-001227 ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

_____
Name and Title of Laboratory Responsible Officer

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R-CA-12
Permit CA
RCRA - Permit

Site Investigation Completion Report

Detrex Melrose Park Facility
Melrose Park, Illinois

March 28, 2011

ARCADIS

Jeanine Smith
Senior Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Site Investigation Completion Report

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0010

Date:
March 28, 2011

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Table of Contents

1. Introduction **1**

2. Background Site Information **1**

3. Subsurface Conditions **2**

3.1 Site Geology 2

3.2 Site Hydrogeology 2

4. Data Collection **3**

4.1 Recent Site Investigation Activities 4

5. Results **6**

6. Additional Information Requested by the IEPA **7**

6.1 Proposed Groundwater Management Zone 7

6.2 Groundwater Ingestion Pathway Exclusion 7

7. Conclusions **10**

8. References **10**

Tables

1 Groundwater Elevation Data

2 Summary of 2010 Groundwater Data

2 Summary of All Groundwater Analytical Results

Figures

1 Site Location

2 Site Layout

3 Soil Boring Location Map

4 Extent of Trichloroethene in Groundwater

Appendices

A Photographic Log of Field Activities

B Boring Logs and Well Construction Logs

C Well Abandonment Record

D Laboratory Analytical Reports and Data Validation Reports

E Analytical Results from 2010

F Proposed Groundwater Management Zone

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Name: Detrex Corp Sovent & Env Svc.

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Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

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Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☒ CMP Report; Phase I Modification on Project March 9, 2011
☒ Other (describe): CMP Phase I Request for Modification #2
Date of Submittal October 14, 2011

IEPA Permit Log No. B-113R
Date of Last IEPA Letter
Log No. of Last IEPA Letter on Project B-113R-CA-16
Does this submittal include groundwater information: ☐ Yes ☒ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Corrective Measures Plan Phase I Request for Modification #2 for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Corrective Measures Plan Phase I Request for Modification #2 for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois. October 14, 2011

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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Owner Signature: Robert M. Currie 10.12.11 (Date)

Title: Mr. Robert Currie, Vice Presiden, Corporate Cousel, Secretary, and Treasurer

Operator Signature: Robert M. Currie 10.12.11 (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Cousel, Secretary, and Treasurer

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Professional's Signature: _____ Date: _____

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

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Name of Laboratory _____

Signature of Laboratory Responsible Officer _____ Date

Mailing Address of Laboratory

_____

_____

_____

Name and Title of Laboratory Responsible Officer _____

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Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

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Professional's Signature: _____ 10-14-11 Date:

Professional's Name: Stephen Vasas

Professional's Seal:

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

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Name of Laboratory Test America, Inc.

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

_____
Name and Title of Laboratory Responsible Officer

ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240
Fax 248 994 2241
www.arcadis-us.com

ENVIRONMENT

Ms. Takako Halteman and Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Request for Corrective Measures Plan Modification for the Pilot Test
Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park
IEPA Site No.: 0311860003

Date:
October 14, 2011

Contact:
Betty Locey, PhD, DABT

Phone:
(248) 994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.0011

Dear Ms. Halteman and Ms Boley:

ARCADIS, on behalf of the Detrex Corporation (Detrex), respectfully submits this letter documenting a modification to the Corrective Measures Plan (CMP; dated December 15, 2009) for the pilot test being conducted at the Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois (Site). Additional documents submitted to the Illinois Environmental Protection Agency (IEPA) for the CMP include the CMP Addendum (dated July 7, 2010), and the Proposed Schedule and Request for Parameter Modification letter to the Illinois Environmental Protection Agency (IEPA; dated May 18, 2011).

This letter describes changes in site conditions and notable deviations in the Pilot Test from what was proposed and approved; a brief description of work that has been completed thus far; provides information regarding the discovery, analysis, and removal of dense non-aqueous phase liquid (DNAPL) in the Pilot Test Study area; and provides a brief description of the proposed next steps.

The following Sections are included in this letter:

1.0 Status Update for the Pilot Test
2.0 Summary of Notable Modifications to the Corrective Measures Plan
3.0 Discovery, Analysis, and DNAPL Recovery
4.0 Anticipated Next Steps

The following information is included in attachments to this letter:

Attachment 1 – Figures

- Figure 1 – Revised Pilot Test Layout
- Figure 2 – Original Proposed Pilot Test Layout
- Figure 3a – HVE-1 Performance Monitoring Results
- Figure 3b – VP-1 Performance Monitoring Results
- Figure 3c – VP-2 Performance Monitoring Results
- Figure 3d – VP-3 Performance Monitoring Results
- Figure 3e – VP-4 Performance Monitoring Results
- Figure 3f – VP-5 Performance Monitoring Results
- Figure 3g – VP-6 Performance Monitoring Results

Attachment 2 – Tables

- Table 1 – Pre-Pilot Test Soil Analytical Results
- Table 2 – OX-1 Sodium Permanganate Volumes
- Table 3 – OX-2 Sodium Permanganate Volumes
- Table 4 – Dense Non-Aqueous Phase Liquid Analytical Results
- Table 5 – Dense Non-Aqueous Phase Liquid Recovery

Attachment 3 – Soil Laboratory Analytical Reports

Attachment 4 – Soil Boring and Well Construction Logs

Attachment 5 – Photographic Log of Field Activities

Attachment 6 – Dense Non-Aqueous Phase Liquid Laboratory Analytical Reports

1.0 Status Update for the Pilot Test

ARCADIS has completed the pre-pilot test drilling, the high vacuum extraction (HVE) pilot test, and the oxidant infusion pilot test at the site.

- The pre-pilot test drilling was completed between May 31 and June 7, 2011. A total of 21 soil borings were completed and 29 soil samples, including two

duplicates, were collected for laboratory analysis. Soil boring locations are provided on Figure 1 in Attachment 1.

- Pre-pilot test soil samples were analyzed for chlorinated volatile organic compounds (CVOCs) following United States Environmental Protection Agency (USEPA) Method 8260 by TestAmerica Laboratories (TAL) in University Park, Illinois.
- Soil sample analytical results are summarized in Table 1 in Attachment 2 and laboratory analytical reports for the soil analysis are provided in Attachment 3.
- Soil boring and well construction logs are presented in Attachment 4.

- The HVE pilot test occurred between July 6 and August 28, 2011. The HVE pilot test well and vacuum monitoring point locations are provided on Figure 1 in Attachment 1.
  - Installation activities occurred between June 22 and June 29, 2011, and initial start-up was initiated on July 6, 2011.
  - The system was shut down on August 28, 2011.
- The oxidant infusion pilot test began on July 6, 2011 and concluded on September 29, 2011. A total of 20 gallons of 40% sodium permanganate stock solution was introduced into the oxidant wells. The locations of the oxidant infusion pilot test wells are provided on Figure 1 in Attachment 1.
  - Oxidant was introduced into the oxidant wells 15 times over the course of the pilot test.
  - The oxidant solution was diluted during each event to obtain an in-situ concentration of approximately 10%.

A photographic log of field activities is presented in Attachment 5.

ARCADIS is currently in the process of evaluating the data collected during the pilot tests and determining a path forward for remediation at the site.

2.0 Summary of Notable Modifications to the Corrective Measures Plan

ARCADIS completed the pre-pilot test drilling, pilot test installation, and the high vacuum extraction and oxidant infusion pilot tests following the procedures identified in the CMP, the CMP Addendum, and the Request for Parameter Modifications letter with some substantial deviations. These deviations listed below and are described in more detail in the following sections.

- Original location of the southern pilot test area (around BH-16) was moved approximately seven feet north,
- The HVE well and vacuum monitoring points were installed to a greater depth than originally proposed,
- The oxidant infusion open boreholes were converted to wells, and
- The pilot tests were terminated prior to the proposed schedule.

Relocation of the Southern Pilot Test Area

Due to the identification of a utility trench, the HVE well (HVE-1), the HVE vacuum monitoring points (VP-1 through VP-6), the southern oxidant well (OX-1), and the southern soil boring locations (SS-1 through SS-12) were moved approximately 7 feet north of their original proposed locations. Additionally, HVE monitoring point VP-1, installed at soil sample location SS-1, was moved approximately 2 feet east of the proposed location due to the close proximity to the gas pipeline on the west property boundary. The revised and proposed well locations are depicted on Figures 1 and 2, respectively, in Attachment 1.

Extended HVE and Vacuum Monitoring Points Installation Depths

The proposed depth for the HVE well and corresponding vacuum monitoring points was 18 feet below ground surface (bgs). During the drilling event, elevated photoionization detector (PID) readings were observed to a depth of 24 feet. The HVE well and vacuum monitoring points were therefore installed to a depth of 24 feet, screened from 14 to 24 feet, corresponding to the zone of highest observed PID readings. Soil boring and well construction logs are included in Attachment 4.

A soil sample was collected from HVE-1 at a depth of 25 feet bgs to vertically delineate soil impacts at HVE-1. The analytical results indicated that soil impacts were delineated to below site-specific soil saturation (Csat) levels. Analytical data are summarized in Table 1 of Attachment 2.

Oxidant Infusion Boreholes Converted to Wells

The oxidant infusion boreholes were originally proposed as open 6-inch diameter boreholes. During drilling, however, the boreholes collapsed due in part to the presence of large silt lenses, and were therefore converted to oxidant wells with permanent subgrade infrastructure. The wells were constructed from 2-inch diameter Schedule 40 PVC riser pipe with 2-inch diameter, 10-foot long PVC, and 0.010-inch continuous slot screens. Soil boring and well construction logs are included in Attachment 4.

Pilot Test Not Conducted for Full Proposed Timeframe

The HVE pilot test was shut down after only two months of operation, the original timeline for the pilot test was three to six months. During the pilot test air flow could not be sustained from the formation. Air had to be entrained from the surface to dewater the HVE well and keep the well screen exposed. Positive pressure was observed in the vacuum monitoring points when water levels rose due to the lack of airflow into HVE-1 and the inability to keep the HVE-1 well screen exposed. . Additionally, vacuum propagation as observed in the vapor monitoring points was inconsistent and asymmetrical. Performance monitoring data for the HVE well and vacuum monitoring points are presented in Figures 3a through 3g in Attachment 1.

In addition, the HVE system was also temporarily shut down from July 6, 2011 through July 20, 2011. This shut down was in response to what appeared to be elevated levels of vinyl chloride (VC) in the ambient air. The health and safety plan (HASP) for the pilot test called for monitoring the presence of VC using a Drager Chip Measurement System (CMS). Initial readings using the CMS indicated elevated levels of VC above the action level defined in the HASP (the Occupational Safety and Health Administration's [OSHA's] Permissible Exposure Limit [PEL] of 1 part per million [ppm]). Ambient air samples were subsequently collected and submitted to Air Toxics Laboratory in Folsom, California for quantitative analysis. Pending the analytical results, the vacuum extraction system was shut down. When analytical results showed VC levels were below the PEL, the HVE system was restarted.

Further investigation revealed that the elevated levels of tetrachloroethene (PCE) and trichloroethene (TCE) were being recorded as VC by the CMS.

The oxidant pilot test was also concluded early due to the discovery of DNAPL and silt lenses. The presence of notable silt lenses did not conform to the site conceptual model and has a substantial affect on the fluid flow and distribution. A summary of oxidant performance data for OX-1 and OX-2 is included in Tables 2 and 3, respectively, in Attachment 2.

3.0 Discovery, Analysis, and DNAPL Recovery

What appeared to be DNAPL was first observed at the site during the pre-pilot test drilling on June 6, 2011 in soil boring SS-11 at depths of 11.8 feet bgs and 16 to 18.5 feet bgs as depicted on the soil boring logs in Attachment 4.

The existence of the DNAPL like substance was discovered in HVE-1 on July 7, 2011 when the HVE well was bailed dry during start up activities for the HVE pilot test. This substance was later discovered in VP-3 on July 21, 2011 and VP-5 on July 29, 2011 when the vapor monitoring points were bailed dry as part of the HVE pilot test. The screen interval for HVE-1, VP-3, and VP-5 is 14 feet to 24 feet bgs. Soil boring logs for SS-11, HVE-1, VP-3, and VP-5 are included in Attachment 4. Photos of the substance recovered are included in Attachment 5.

Data Analysis

Two samples of the DNAPL substance (one from VP-3 and one from VP-5) were collected on August 4, 2011 and sent to TAL for analysis of volatile organic compounds (VOCs) following USEPA Method 8260 and to Zymax Forensics Laboratory for analysis of C3 through C44 and specific gravity. The analytical results indicated that the substance was indeed DNAPL, composed primarily of chlorinated constituents. Overall, greater than 99% of the material is a combination of tetrachloroethene (PCE), trichloroethene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA). Toluene is less than 0.1%. Further analysis of the results indicated that the DNAPL in both VP-3 and VP-5 was likely from the same source. Results of the NAPL analysis are included in Table 4 in Attachment 2. Laboratory analytical results for the DNAPL analysis are in provided in Attachment 6. James Moore of IEPA was notified of the potential existence of DNAPL on August 2, 2011. At this point Mr. Moore was informed of our intent to continue the pilot test and by using HVE system as a means of extracting the potential DNAPL substance via vacuum.

DNAPL Recovery

Recovery of DNAPL has been conducted eight times using a bailer and/or a peristaltic pump on July 7, July 29, August 4, August 25, August 26, September 2, September 8, and September 29, 2011. Approximately 0.7 liter (L) of DNAPL has been recovered from HVE-1, 3.6 L from VP-3, and 3.4 L from VP-5. Amounts of DNAPL recovered from each well during each event are summarized in Table 5 in Attachment 2.

4.0 Anticipated Next Steps

ARCADIS anticipates the completion of the post-pilot test soil borings in the area of the northern oxidant infusion well pilot test locations (around OX-2) to determine how far the oxidant (sodium permanganate) propagated into the subsurface. Soil borings will be installed adjacent to the pre-pilot test soil borings and soil samples will be collected at corresponding depths.

An alternate oxidant, such as sodium persulfate or Fenton's reagent, may be evaluated for use at the site. If additional pilot test activities are proposed, an extension will be requested to prepare the pilot test report and the report prepared when those activities are complete. If an additional pilot test alternative is not proposed and completed the pilot test completion report will be prepared and submitted to the IEPA as currently planned.

Closing

Feel free to contact us at (248) 994-2263 if you want additional information or would like to discuss this further.

Sincerely,

ARCADIS G&M of Michigan, LLC

Mark Klemmer
Principal Engineer

Stephen Vasas, PG
Senior Geologist

Betty Locey, PhD, DABT
Principal Scientist

Copies:
Mr. David Craig, Detrex Corporation

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

Street Address: 2537 W. Le Moyne

City: Melrose Park

County: Cook

Site No. (IEPA): 0311860003

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☒ CMP Report; Phase I Summary
☒ Other (describe):
Corrective Measures Plan - Phase I Summary Report for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois

Date of Submittal 3-15-12

IEPA Permit Log No. B-113R

Date of Last IEPA Letter on Project January 24, 2012

Log No. of Last IEPA Letter on Project B-113R-CA-20

Does this submittal include groundwater information: ☐ Yes ☒ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Corrective Measures Plan - Phase I Summary Report for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois; summarizes the pilot test activities completed for Phase I of the Corrective Measures Plan.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Corrective Measures Plan - Phase I Summary Report for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois

7.0 CERTIFICATION STATEMENT - *(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).* The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 03.14.12
(Date)

Title: Mr. Robert Currie, Vice President, Corporate Cousel, Secretary, and Treasurer

Operator Signature: Robert M. Currie 03.14.12
(Date)

Title: Mr. Robert Currie, Vice President, Corporate Cousel, Secretary, and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ _____
Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory TestAmerica, Inc.

_____
Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

2417 Bond Street

University Park, Illinois 60484

_____

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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Professional's Signature: _____ 3/14 _____
Date:

Professional's Name: Stephen Vasas

Professional's Seal: LICENSED PROFESSIONAL GEOLOGIST STEPHEN MICHAEL VASAS 196-001227 ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

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Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

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Owner Signature: _____ _____
(Date)

Title: Mr. Robert Currie, Vice Presiden, Corporate Cousel, Secretary, and Treasurer

Operator Signature: _____ _____
(Date)

Title: Mr. Robert Currie, Vice Presiden, Corporate Cousel, Secretary, and Treasurer

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Professional's Signature: _____ _____
Date:

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

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Name of Laboratory TestAmerica, Inc.

Terese A. Preston 3/9/12
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

Terese A. Preston Quality Assurance Manager
Name and Title of Laboratory Responsible Officer

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(Date)

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Date:

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Air Toxics, LTD

X [signature] 3/13/2012
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory
180 Blue Ravine Rd Ste B
Folsom, CA 95630

Robert S. Mitze V.P.
Name and Title of Laboratory Responsible Officer

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R
Permit CA
RCRA - Permit

Corrective Measures Plan – Phase I Summary Report

Melrose Park Facility
Melrose Park, Illinois

March 15, 2012

ARCADIS

Andrea Kreyinghaus, EIT
Environmental Specialist

Jackie Saling, PE - MI
Senior Engineer

Stephen Vasas, PG - IL
Project Geologist

Betty Locey, PhD, DABT
Principal Scientist

Corrective Measures Plan – Phase I Summary Report

Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.0011.00002

Date:
March 15, 2012

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Table of Contents

1.	**Introduction**	**1**
1.1	Background	1
1.2	Report Objectives	2
2.	**High-Vacuum Extraction and Oxidant Diffusion Pilot Tests**	**3**
2.1	High-Vacuum Extraction Well Installation	4
2.2	High-Vacuum Extraction Test Equipment and Set-up	4
2.3	Oxidant Well Installation	5
2.4	Baseline Soil Sampling and Monitoring Activities	6
2.5	High-Vacuum Extraction Pilot Test Operation and Data Collection	7
2.6	Oxidant Diffusion Pilot Test Operation and Data Collection	9
2.7	Post Treatment Soil Sampling	10
3.	**Pilot Test Results**	**12**
3.1	High-Vacuum Extraction Pilot Test Results	12
3.2	Oxidant Diffusion Pilot Test Results	13
4.	**Dense Non-Aqueous Phase Liquid Discovery**	**14**
4.1	Dense Non-Aqueous Phase Liquid Data Analysis	14
4.2	DNAPL Recovery	14
5.	**Summary and Conclusions**	**15**
6.	**References**	**17**

Tables

Table 1	Soil Analytical Results, Detrex Melrose Park Facility, Melrose Park, Illinois
Table 2	Vapor Analytical Results, Detrex Melrose Park Facility, Melrose Park, Illinois
Table 3	DNAPL Analytical Results, Detrex Melrose Park Facility, Melrose Park, Illinois
Table 4	Remediation Options Evaluation, Detrex Melrose Park Facility, Melrose Park Illinois

Figures

Figure 1	Site Location Map
Figure 2	Site Layout Map
Figure 3A	HVE and Oxidant Diffusion Pilot Study Layout
Figure 3B	Original Pilot Test Layout
Figure 4	Typical HVE Process Flow Diagram
Figure 5	Pilot Test Soil Sample Results

Appendices

A	Pilot Study Photo Log
B	Soil Boring and Well Construction Logs
C	Laboratory Analytical Data
D	Waste Manifest
E	HVE Pilot Study Data Collection Worksheets
F	HVE Performance Monitoring Figures
G	Oxidant Well Performance Monitoring Logs
H	HVE Mass Discharge Calculations
I	DNAPL Recovery Logs

ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS G&M of Michigan, LLC
10559 Citation Drive, Suite 100
Brighton
Michigan 48116
Tel 810-2298594
Fax 810-2298837

Transmittal Letter

To:
Mr. Stephen Nightingale, P.E
Ms. Takako Halteman
Ms. Amy Boley

Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Phone: (217) 782-2829

Copies:
Mr. David Craig, CHMM
Detrex Corporation

From:
Betty Locey

Date:
August 2, 2012

Subject:
Detrex Corporation
IEPA Site No. 0311860003
Vapor Mitigation System Plan for the Outback Building, Revision 1

ARCADIS Project No.:
SFE04017.0015.00001

We are sending you:

☐ **Attached** ☐ **Under Separate Cover Via _____ the Following Items:**

☐ Shop Drawings ☐ Plans ☐ Specifications ☐ Change Order
☐ Prints ☐ Samples ☐ Copy of Letter ☒ Reports
☐ Other:

Copies	Date	Report	Rev.	Description
3	8/1/12			Vapor Mitigation Plan for the Outback Building, Revision 1

Mailing Method

☐ U.S. Postal Service 1st Class ☐ Courier/Hand Delivery ☐ FedEx Priority Overnight ☐ FedEx 2-Day Delivery
☐ Certified/Registered Mail ☐ United Parcel Service (UPS) ☒ FedEx Standard Overnight ☐ FedEx Economy
☐ Other:

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

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1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Vapor Mitigation Plan for Outback Sales Building
Date of Submittal 8-1-12

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project July 3, 2012
Log No. of Last IEPA Letter on Project B-113R-CA-21
Does this submittal include groundwater information: ☐ Yes ☒ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Revised Vapor Mitigation System Plan for the Outback Sales building.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Revised Vapor Mitigation Plan for the Outback Sales Building, dated August 1, 2012

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 07.26.12
(Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: Robert M. Currie 07.26.12
(Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ _____
Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

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Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ 8-1-2012 Date

Professional's Name: Stephen Vasas

Professional's Seal: LICENSED PROFESSIONAL GEOLOGIST STEPHEN MICHAEL VASAS 196-001227 ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____ Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____

_____

_____

_____ Name and Title of Laboratory Responsible Officer

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R
Permit CA
RCRA - Permit

Vapor Mitigation Plan for Outback Sales Building Revision 1

August 1, 2012

ARCADIS

Vapor Mitigation Plan for Outback Sales Building Revision 1

Rachel Saari, PE
Project Engineer

Stephen Vasas, PG
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.15

Date:
August 1, 2012

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1. Introduction **1**

2. Background **1**

2.1 Site Location and Layout 1

2.2 Physical Conditions 2

3. Summary of Historical Investigations **3**

4. Extent of Impacts Near and On the Outback Property **4**

4.1 Soil 4

4.2 Groundwater 5

4.3 Soil Gas 5

5. Vapor Mitigation System **6**

5.1 Active Vapor Mitigation System Operation 6

5.2 Description 6

5.3 Sealing 7

5.4 Mitigation System Performance Verification 7

6. Air Permitting **8**

7. Engineered Barriers **8**

8. Health and Safety Plan **8**

9. Schedule **8**

10. Estimated Costs **9**

11. Conclusions **9**

Tables

Table 1. Summary of All Soil Data on and near Outback Property, Melrose Park, Illinois

Table 2. Summary of Groundwater Data on and near Outback Property, Melrose Park, Illinois

Table 3. Summary of Sub-Slab Soil Gas Data Collected at th Outback Property, Melrose Park, Illinois

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Table 4. Low Cost Estimate

Table 5. High Cost Estimate

Figures

Figure 1. Site Location

Figure 2. Outback Sales Property Site Layout

Figure 3. Sample Locations

Figure 4. Soil Source Areas and Locations of Engineered Barriers

Figure 5. Soil Gas Data and Proposed Locations for VMS

Figure 6. Vapor Mitigation System Mechanical Details

Appendices

Appendix A. Photographic Log

Appendix B. Equipment Installation Manuals

Huff & Huff
incorporated
environmental engineers
and consultants

915 Harger Road, Suite 330
Oak Brook, IL 60523
Phone (630) 684-9100
Fax (630) 684-9120
Website: http://huffnhuff.com

February 14, 2013

Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794

Re: Phase 2 Corrective Measures Plan
Detrex Corporation
2537 Lemoyne Ave
Melrose Park, IL
Site Number: 0311860003

Dear Ms. Halteman:

Please find the attached Phase 2 Corrective Measures Plan for the above-referenced site in Melrose Park. Should you have any questions please feel free to contact me at 630-684-4444 or by e-mail at jhuff@huffnhuff.com.

Sincerely;

James E. Huff, P.E.

cc. D. Craig, Detrex Corporation

R:\Detrex\Remedial Investigation 2012\Corrective Measures Plan\cover letter CMP 2013.doc

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 Facility Identification

Name: Detrex Corp Sovent & Env Svc.
Street Address: 2537 W LeMoyne
City: Melrose Park
County: Cook
Site No. (IEPA): 0311860003
Site No. (USEPA): ILD074424938

2.0 Owner Information

Name: Detrex Corporation
Mail Address: 24901 Northwest Highway, Ste 410
City: Southfield
State: MI Zip Code: 48075
Contact Name: David Craig
Contact Title: Risk Management
Phone: 248-358-5800 ext. 131

3.0 Operator Information

Name: Detrex Corporation
Mail Address: 24901 Northwest Highway, Ste 410
City: Southfield
State: MI Zip Code: 48075
Contact Name:
Contact Title:
Phone: 248-358-5800 ext. 131

4.0 Type of Submission (check applicable item and provide requested information, as applicable)

- ☐ RFI Phase I Workplan/Report
- ☐ RFI Phase II Workplan/Report
- ☑ CMP Report;
- ☐ Other (describe):

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project: Jan 29, 2013
Log No. of Last IEPA Letter on Project: B-113R-CA-24(2)
Does this submittal include groundwater information: ☐ Yes ☑ No

Date of Submittal: Feb 14, 2013

5.0 Description of Submittal: (briefly describe what is being submitted and its purpose)

Phase II Corrective Measures Plan detailing remedial option.

6.0 Documents Submitted (identify all documents in submittal, including cover letter; give dates of all documents)

Phase II Corrective Measures Plan, dated February 2013

7.0 Certification Statement

(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below). The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

For: Detrex Corporation, Melrose Park

Date of Submission: Feb 14, 2013

7.1 Owner/Operator Certification

(Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M Currie Date: 02.13.13

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

Operator Signature: Robert M Currie Date: 02.13.13

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

7.2 Professional Certification (if necessary)

Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44 (h))

Professional's Signature: James E Huff Date: 2/14/2013

Professional's Name James E Huff

Address 915 Harger Road

City Oak Brook

State IL Zip Code 60523

Phone 630-684-4444

Professional's Seal: JAMES E. HUFF 062-032033 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS 2/14/2013

7.3 Laboratory Certification (if necessary)

The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____ Date: _____

Signature of Laboratory Responsible Officer

Mailing Address of Laboratory

Address _____

City _____

State _____ Zip Code _____

_____

Name and Title of Laboratory Responsible Officer

7.1 Owner/Operator Certification

(Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ Date: _____

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

Operator Signature: _____ Date: _____

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

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Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44 (h))

Professional's Signature: _____ Date: _____

Professional's Name James E Huff

Address 915 Harger Road

Professional's Seal:

City Oak Brook

State IL Zip Code 60523

Phone 630-684-4444

7.3 Laboratory Certification (if necessary)

The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory First Environmental Laboratories, Inc.

_____ Date: Feb 13, 2013

Signature of Laboratory Responsible Officer

Mailing Address of Laboratory

Address 1600 Shore Road, Suite D

City Naperville

State IL Zip Code 60563

William Mottashed, Project Manager

Name and Title of Laboratory Responsible Officer

PHASE 2 CORRECTIVE MEASURES PLAN
FINAL DESIGN REPORT AND
CONSTUCTION WORK PLAN

Detrex Corporation

LPC # 0311860003
2537 W Lemoyne Street
Melrose Park, IL

February 2013

Prepared by:

James E. Huff, P.E.
Shane Cuplin, P.G.

Huff & Huff
incorporated
environmental engineers
and consultants

GLOSSARY OF ACRONYMNS

bgs	below ground surface
cis-DCE	cis-1,2-Dichloroethene
CMP	Corrective Measures Plan
COC	Constituent of Concern
C_{sat}	Soil Saturation Concentration
Detrex	Detrex Corporation
DNAPL	Dense Non-Aqueous Phase Liquid
ECD	Electron Capture Device
EZVI	Emulsified Zero-Valent Iron
FID	Flame Ionization Detector
H&H	Huff & Huff, Inc.
HVE	High Vacuum Extraction
IEPA	Illinois Environmental Protection Agency
MIP	Membrane Interface Probe
µv	micro volts
msl	mean sea level
NASA	National Aeronautics and Space Administration
PCE	Perchloroethylene
PID	Photoionization Detector
QA/QC	Quality Assurance / Quality Control
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFI	RCRA Facility Investigation
RO	Remedial Objective
SB	Soil Boring
SWMU	Solid Waste Management Units
TCA	1,1,1-Tricloroethane
TCE	Trichloroethene
VC	Vinyl chloride
VOC	Volatile Organic Compound
XSD	Halogen Specific Detector

TABLE OF CONTENTS

GLOSSARY OF ACRONYMNS i

1. INTRODUCTION & PURPOSE 1
   - 1.1 Background 3
     - 1.1.1 RCRA Permit 3
     - 1.1.2 Remedial Objectives 5
   - 1.2 Purpose and Goals 5
   - 1.3 Scope of Project 5

2. SITE CONDITIONS 6
   - 2.1 Previous Investigations 6
   - 2.2 MIP Investigation – November 2012 10
   - 2.3 Soil Investigation – December 2012 12
     - 2.3.1 Field Procedures 14
     - 2.3.2 Analytical Results 14
   - 2.4 Correlation Between MIP Data and Confirmation Samples 20
   - 2.5 Supplemental Soil Sampling 28

3. DETAILED PLANS OF THE DESIGN SYSTEM 36

4. TECHNICAL SPECIFICATIONS 38
   - 4.1 Emulsified Zero-Valent Iron 38
   - 4.2 Soil Mixing 39
     - 4.2.1 Sheet Pilings 41
     - 4.2.2 Utilities 41
     - 4.2.3 Building Foundations 42
     - 4.2.4 Vapor Control 42
     - 4.2.5 Staging Piles 44
     - 4.2.6 Health and Safety 45
   - 4.3 Surficial Grading and Gravel Application 45

5. PROJECT MANAGEMENT 46

6. CONSTRUCTION QUALITY ASSURANCE / QUALITY CONTROL 47

7. SCHEDULE 48

8. WASTE MANAGEMENT 49

9. REQUIRED PERMITS 50

10. VERIFICATION OF ACHIEVEMENT OF OBJECTIVES 51

FIGURES

Figure 1-1 Site Location Map (Topo) 2
Figure 1-2 Site Layout and Adjacent Properties Map 4
Figure 2-1 Site Layout and Solid Waste Management Units 7
Figure 2-2 MIP Boring Location Map (MIP borings with Site features) 11
Figure 2-3 Soil Boring Location Map 13
Figure 2-4 Area of PCE above Objectives – Map View 22
Figure 2-5 Area of PCE above Objectives – 3-Dimensional Site View 23
Figure 2-6 Area of TCE above Objectives – Map View 24
Figure 2-7 Area of TCE above Objectives – 3-Dimensional Site View 25
Figure 2-8 Area of TCA above Objectives – Map View 26
Figure 2-9 Area of TCA above Objectives – 3-Dimensional Site View 27
Figure 2-10 FID Representation above Objectives – Map View 29
Figure 2-11 FID Representation above Objectives – 3-Dimensional Site View 30
Figure 2-12 Extent of Areas above Objectives 31
Figure 2-13 Supplemental Soil Boring Location Map 34
Figure 3-1 Area of Planned Remediation 37
Figure 4-1 Area of Planned Sheet Piling Installation 43
Figure 10-1 Proposed Sample Location Map 52

TABLES

Table 2-1 Soil Boring Sample Location Rationale 15
Table 2-2 Soil Analytical Results 16
Table 2-3 Soil Analytical Results Compared to Remedial Objectives 18
Table 2-4 Remediation Grid Summary of Depths above Remedial Objectives 32
Table 2-5 Proposed Supplemental Soil Borings 35
Table 4-1 Overburden Soils Summary 41
Table 10-1 Proposed Verification Soil Borings 53
Table 10-2 Site-Specific Remedial Objectives 54

APPENDICES

Appendix A – Photos
Appendix B – MIP Report
Appendix C – Sampling Protocol
Appendix D – Boring Logs
Appendix E – Analytical Laboratory Reports
Appendix F – MIP Correlation Data
Appendix G – Expanded VOC List
Appendix H – Remedial Activities Checklists

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Semiannual Groundwater Monitoring Report 4th Quarter 2009

Detrex Melrose Park Facility
Melrose Park, Illinois

January 14, 2010

ARCADIS

Jeanine Smith
Project Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report
4th Quarter 2009

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.05.02

Date:
January 14, 2010

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Table of Contents

1. Introduction **1**

2. Background Information **1**

3. Description of Field Activities **3**

4. Laboratory Analysis **4**

5. Results **4**

5.1 Groundwater Elevations and Apparent Flow 4

5.2 Comparison to Class II Groundwater Remedial Objectives 5

5.3 Constituent Distribution 6

6. Anticipated Future Activities **6**

7. References **7**

Tables

1 Groundwater Elevation Data

2 Summary of November 2009 Groundwater Analytical Results

3 Summary of All Groundwater Analytical Results

Figures

1 Site Location

2 Site Layout

3 Apparent Groundwater Elevation and Flow Direction, November 19-20, 2009

4 4th Quarter 2009 Groundwater Analytical Results

5 Trichloroethene Isoconcentration Contours

6 cis-1,2-Dichloroethene Isoconcentration Contours

Appendices

A Photographic Log

B Laboratory Analytical Report, Validation Report, and Electronic Data Submittal (on CD)

C Groundwater Flow Maps – 2007 and 2008

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ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Transmittal Letter

To:
Mr. Stephen Nightingale, P.E
Ms. Takako Halteman
Ms. Amy Boley

Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Phone: 217 782-2829

Copies:
Mr. David Craig, CHMM
Detrex Corporation

From:
Betty Locey

Date:
July 14, 2010

Subject:
Detrex Corporation
IEPA Site No. 0311860003
Semi-Annual Groundwater Monitoring Report

ARCADIS Project No.:
SFE04017.0007.00003

We are sending you:
☐ **Attached** ☐ **Under Separate Cover Via _____ the Following Items:**

☐ Shop Drawings ☐ Plans ☐ Specifications ☐ Change Order
☐ Prints ☐ Samples ☐ Copy of Letter ☒ Reports
☐ Other:

Copies	Date	Report	Rev.	Description
3	7/14/10			Semi-Annual Groundwater Monitoring Report, 2nd Quarter 2010

Mailing Method
☐ U.S. Postal Service 1st Class ☐ Courier/Hand Delivery ☐ FedEx Priority Overnight ☐ FedEx 2-Day Delivery
☐ Certified/Registered Mail ☐ United Parcel Service (UPS) ☒ FedEx Standard Overnight ☐ FedEx Economy
☐ Other:

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

- ☐ RFI Phase I Workplan/Report
- ☐ RFI Phase II Workplan/Report
- ☐ CMP Report; Phase _____
- ☒ Other (describe):

Semi-Annual Groundwater Monitoring Report

Date of Submittal 7-14-10

IEPA Permit Log No. B-113R

Date of Last IEPA Letter on Project June 15, 2010

Log No. of Last IEPA Letter on Project B-113R-CA-13

Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Semi-annual groundwater monitoring report providing the results of the 2nd quarter 2010 routine sampling event.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Semi-Annual Groundwater Monitoring Report - 2nd Quarter 2010

7.0 CERTIFICATION STATEMENT - *(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).* The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 7-13-10 (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: Robert M. Currie 7-13-10 (Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: 6-30-2010

Professional's Name: Stephen Vasas

Professional's Seal: LICENSED PROFESSIONAL GEOLOGIST STEPHEN MICHAEL VASAS 196-001227 ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

Bonnie Stadelmann 6/22/10
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

Bonnie Stadelmann, Project Manager
Name and Title of Laboratory Responsible Officer

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0311860003 – Cook County
ILD074424938
Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Semiannual Groundwater Monitoring Report 2nd Quarter 2010

Detrex Melrose Park Facility
Melrose Park, Illinois

July 14, 2010

ARCADIS

Janice McKee
Senior Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report
2nd Quarter 2010

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.07.01

Date:
July 14, 2010

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Table of Contents

1. **Introduction** 1

2. **Background Information** 1

3. **Description of Field Activities** 3

4. **Laboratory Analysis** 4

5. **Results** 4

   5.1 Groundwater Elevations and Apparent Flow 4

   5.2 Comparison to Class II Groundwater Remedial Objectives 5

   5.3 Constituent Distribution 6

6. **Anticipated Future Activities** 6

7. **References** 7

Tables

Table 1 Groundwater Elevation Data

Table 2 Summary of June 2010 Groundwater Analytical Results

Table 3 Summary of All Groundwater Analytical Results

Figures

Figure 1 Site Location Map

Figure 2 Site Layout

Figure 3 Apparent Groundwater Elevation and Flow Direction, June 15, 2010

Figure 4 Groundwater Analytical Results, 2nd Quarter 2010

Figure 5 Trichloroethene Isoconcentration Contour Map, June 15, 2010

Figure 6 cis-1,2-Dichloroethene Isoconcentration Contour Map, June 15, 2010

Appendices

A Laboratory Analytical Report, Validation Report, and Electronic Data Submittal (on CD)

B Groundwater Flow Maps – 2009, 2008 and 2007

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Semi-Annual Groundwater Monitoring Report
Date of Submittal 1/13/2011

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project October 4, 2010
Log No. of Last IEPA Letter on Project B-113R-CA-12
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Semi-annual groundwater monitoring report providing the results of the 4th quarter 2010 routine sampling event.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Semi-Annual Groundwater Monitoring Report - 4th Quarter 2010, dated 1/13/2011

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ 1/13/11 (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: _____ 1/13/11 (Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

Name and Title of Laboratory Responsible Officer

2417 Bond Street

University Park, Illinois 60484

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident

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Professional's Signature: _____ 1/13/11

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

Professional's Seal: LICENSED PROFESSIONAL GEOLOGIST STEPHEN MICHAEL VASAS 196-001227 ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory TestAmerica

Michael J Healy 1210-10
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory
2417 Bond Street
University Park, IL 60484

Michael J. Healy, Lab Director
Name and Title of Laboratory Responsible Officer

Illinois
Environmental
Protection Agency

Bureau of Land
1021 North Grand Avenue East
Box 19276
Springfield, IL 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: Detrex Corp Sovent & Env Svc. Site ID #: 0311860003
Facility Address: 2537 W. Le Moyne, Melrose Park Fed ID #: ILD074424938

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

X LPC-160 Forms

Groundwater
___ Quarterly – Indicate one: 1 2 3 4
X Semi-Annual
___ Annual
___ Biennial

Leachate
___ Quarterly – Indicate one: 1 2 3 4
___ Semi-Annual
___ Annual
___ Biennial

___ Groundwater Data (without LPC-160 Forms)
___ Quarterly – Indicate one: 1 2 3 4
___ Annual ___ Semi-Annual ___ Biennial

___ Well Construction Information
___ Well Construction Forms, Boring Logs and/or Abandonment Forms
___ Well Survey Data (e.g., Stick-up Elevation Data)

___ Notice of Statistically Significant Evidence of Groundwater Contamination (35 Ill. Adm. Code 724.198)

___ Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))

___ Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 Ill. Adm. Code 724.199(i))

___ Gas Monitoring Reports

___ Other (identify) _____

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Semiannual Groundwater Monitoring Report 4th Quarter 2010

Detrex Melrose Park Facility
Melrose Park, Illinois

January 13, 2011

ARCADIS

Infrastructure · Water · Environment · Buildings

Jeanine Smith
Project Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report 4th Quarter 2010

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.10.01

Date:
January 13, 2011

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.

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Table of Contents

1. Introduction 1

2. Background Information 1

3. Description of Field Activities 3

4. Laboratory Analysis 4

5. Results 4

5.1 Groundwater Elevations and Apparent Flow 5

5.2 Comparison to Class II Groundwater Remedial Objectives 5

5.3 Constituent Distribution 6

6. Anticipated Future Activities 7

7. References 7

Tables

Table 1 Groundwater Elevation Data

Table 2 Summary of June 23, 2010 and November 22-23, 2010 Groundwater Analytical Results

Table 3 Summary of All Groundwater Analytical Results

Figures

Figure 1 Site Location Map

Figure 2 Site Layout Map

Figure 3 Groundwater Elevations, November 2010

Figure 4 Groundwater Analytical Results, June 23, 2010 and November 22-23, 2010

Figure 5 Trichloroethene Isoconcentration Contours

Figure 6 cis-1,2-Dichloroethene Isoconcentration Contours

Appendices

A Laboratory Analytical Report, Validation Report, and Electronic Data Submittal

B Previous Groundwater Flow Maps – 2007 through 2010

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Semi-Annual Groundwater Monitoring Report
Date of Submittal 7-14-11

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project March 9, 2011
Log No. of Last IEPA Letter on Project B-113R-CA-16
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Semi-annual groundwater monitoring report providing the results of the 2nd quarter 2011 routine sampling event.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Semi-Annual Groundwater Monitoring Report - 2nd Quarter 2011, dated 7-14-11

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ 7/6/11 (Date)

Title: Mr. Thomas Mark, President & CEO

Operator Signature: _____ 7/6/11 (Date)

Title: Mr. Thomas Mark, President & CEO

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date:

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

Name and Title of Laboratory Responsible Officer

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

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Professional's Signature: _____ 7-8-11 Date:

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

_____
Name and Title of Laboratory Responsible Officer

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Owner Signature: _____ _____
(Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____
(Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

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Professional's Signature: _____ _____
Date:

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

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Name of Laboratory Test America, Inc.

Ronnie Gladelman 06/30/11
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

Project Manager
Name and Title of Laboratory Responsible Officer

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Semiannual Groundwater Monitoring Report 2nd Quarter 2011

Detrex Melrose Park Facility
Melrose Park, Illinois

July 14, 2011

ARCADIS

Jeanine Smith
Project Life Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report
2nd Quarter 2011

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

Our Ref.:
SFE04017.12.01

Date:
July 14, 2011

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Table of Contents

1. **Introduction** 1

2. **Background Information** 1

3. **Description of Field Activities** 3

4. **Laboratory Analysis** 4

5. **Results** 4

   5.1 Groundwater Elevations and Apparent Flow 4

   5.2 Comparison to Class II Groundwater Remedial Objectives 5

   5.3 Constituent Distribution 6

6. **Request for Reduction in Constituents of Concern** 6

7. **Anticipated Future Activities** 6

8. **References** 7

Tables

Table 1 Groundwater Elevation Data

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Figures

Figure 1 Site Location Map

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Detrex Corporation
0311860003 – Cook County
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Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Semiannual Groundwater Monitoring Report 4th Quarter 2011

Detrex Melrose Park Facility
Melrose Park, Illinois

January 6, 2012

ARCADIS

Janice McKee
Senior Scientist

Stephen Vasas, PG
Project Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report 4th Quarter 2011

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
10559 Citation Drive, Suite 100
Brighton,
Michigan 48116
Tel 810.229.8594
Fax 810.229.8837

Our Ref.:
SFE04017.12.01

Date:
January 6, 2012

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B Previous Groundwater Flow Maps – 2007 through 2010

Huff & Huff
incorporated
environmental engineers
and consultants

915 Harger Road, Suite 330
Oak Brook, IL 60523
Phone (630) 684-9100
Fax (630) 684-9120
Website: http://huffnhuff.com

February 14, 2013

Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794

Re: Phase 2 Corrective Measures Plan
Detrex Corporation
2537 Lemoyne Ave
Melrose Park, IL
Site Number: 0311860003

Dear Ms. Halteman:

Please find the attached Phase 2 Corrective Measures Plan for the above-referenced site in Melrose Park. Should you have any questions please feel free to contact me at 630-684-4444 or by e-mail at jhuff@huffnhuff.com.

Sincerely;

James E. Huff, P.E.

cc. D. Craig, Detrex Corporation

R:\Detrex\Remedial Investigation 2012\Corrective Measures Plan\cover letter CMP 2013.doc

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 Facility Identification

Name Detrex Corp Sovent & Env Svc.
Street Address 2537 W LeMoyne
City Melrose Park
County Cook
Site No. (IEPA) 0311860003
Site No. (USEPA) ILD074424938

2.0 Owner Information

Name Detrex Corporation
Mail Address 24901 Northwest Highway, Ste 410
City Southfield
State MI Zip Code 48075
Contact Name David Craig
Contact Title Risk Management
Phone 248-358-5800 ext. 131

3.0 Operator Information

Name Detrex Corporation
Mail Address 24901 Northwest Highway, Ste 410
City Southfield
State MI Zip Code 48075
Contact Name
Contact Title
Phone 248-358-5800 ext. 131

4.0 Type of Submission (check applicable item and provide requested information, as applicable)

- ☐ RFI Phase I Workplan/Report
- ☐ RFI Phase II Workplan/Report
- ☑ CMP Report;
- ☐ Other (describe):

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project Jan 29, 2013
Log No. of Last IEPA Letter on Project B-113R-CA-24(2)
Does this submittal include groundwater information: ☐ Yes ☑ No

Date of Submittal Feb 14, 2013

5.0 Description of Submittal: (briefly describe what is being submitted and its purpose)

Phase II Corrective Measures Plan detailing remedial option.

6.0 Documents Submitted (identify all documents in submittal, including cover letter; give dates of all documents)

Phase II Corrective Measures Plan, dated February 2013

7.0 Certification Statement

(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below). The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

IL 532-2832
LPC 632

7.1 Owner/Operator Certification

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert W. Currie Date: 02.13.13

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

Operator Signature: Robert W. Currie Date: 02.13.13

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

7.2 Professional Certification (if necessary)

Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44 (h))

Professional's Signature: James E Huff Date: 2/14/2013

Professional's Name James E Huff

Address 915 Harger Road

City Oak Brook

State IL Zip Code 60523

Phone 630-684-4444

Professional's Seal: JAMES E. HUFF 062-032093 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

2/14/2013

7.3 Laboratory Certification (if necessary)

The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____ Date: _____

Signature of Laboratory Responsible Officer

Mailing Address of Laboratory

Address _____

City _____

State _____ Zip Code _____

_____

Name and Title of Laboratory Responsible Officer

7.1 Owner/Operator Certification

(Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ Date: _____

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

Operator Signature: _____ Date: _____

Title: Mr. Robert Currie, VP, Corporate Council, Sct .and Tres.

7.2 Professional Certification (if necessary)

Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44 (h))

Professional's Signature: _____ Date: _____

Professional's Name James E Huff

Address 915 Harger Road

Professional's Seal:

City Oak Brook

State IL Zip Code 60523

Phone 630-684-4444

7.3 Laboratory Certification (if necessary)

The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory First Environmental Laboratories, Inc.

_____ Date: Feb 13, 2013

Signature of Laboratory Responsible Officer

Mailing Address of Laboratory

Address 1600 Shore Road, Suite D

William Mottashed, Project Manager

Name and Title of Laboratory Responsible Officer

City Naperville

State IL Zip Code 60563

PHASE 2 CORRECTIVE MEASURES PLAN
FINAL DESIGN REPORT AND
CONSTUCTION WORK PLAN

Detrex Corporation

LPC # 0311860003
2537 W Lemoyne Street
Melrose Park, IL

February 2013

Prepared by:

James E. Huff, P.E.
Shane Cuplin, P.G.

Huff & Huff, incorporated
environmental engineers
and consultants

GLOSSARY OF ACRONYMNS

bgs	below ground surface
cis-DCE	cis-1,2-Dichloroethene
CMP	Corrective Measures Plan
COC	Constituent of Concern
C_{sat}	Soil Saturation Concentration
Detrex	Detrex Corporation
DNAPL	Dense Non-Aqueous Phase Liquid
ECD	Electron Capture Device
EZVI	Emulsified Zero-Valent Iron
FID	Flame Ionization Detector
H&H	Huff & Huff, Inc.
HVE	High Vacuum Extraction
IEPA	Illinois Environmental Protection Agency
MIP	Membrane Interface Probe
µv	micro volts
msl	mean sea level
NASA	National Aeronautics and Space Administration
PCE	Perchloroethylene
PID	Photoionization Detector
QA/QC	Quality Assurance / Quality Control
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFI	RCRA Facility Investigation
RO	Remedial Objective
SB	Soil Boring
SWMU	Solid Waste Management Units
TCA	1,1,1-Tricloroethane
TCE	Trichloroethene
VC	Vinyl chloride
VOC	Volatile Organic Compound
XSD	Halogen Specific Detector

TABLE OF CONTENTS

GLOSSARY OF ACRONYMNS i

1. INTRODUCTION & PURPOSE 1
   - 1.1 Background 3
     - 1.1.1 RCRA Permit 3
     - 1.1.2 Remedial Objectives 5
   - 1.2 Purpose and Goals 5
   - 1.3 Scope of Project 5

2. SITE CONDITIONS 6
   - 2.1 Previous Investigations 6
   - 2.2 MIP Investigation – November 2012 10
   - 2.3 Soil Investigation – December 2012 12
     - 2.3.1 Field Procedures 14
     - 2.3.2 Analytical Results 14
   - 2.4 Correlation Between MIP Data and Confirmation Samples 20
   - 2.5 Supplemental Soil Sampling 28

3. DETAILED PLANS OF THE DESIGN SYSTEM 36

4. TECHNICAL SPECIFICATIONS 38
   - 4.1 Emulsified Zero-Valent Iron 38
   - 4.2 Soil Mixing 39
     - 4.2.1 Sheet Pilings 41
     - 4.2.2 Utilities 41
     - 4.2.3 Building Foundations 42
     - 4.2.4 Vapor Control 42
     - 4.2.5 Staging Piles 44
     - 4.2.6 Health and Safety 45
   - 4.3 Surficial Grading and Gravel Application 45

5. PROJECT MANAGEMENT 46

6. CONSTRUCTION QUALITY ASSURANCE / QUALITY CONTROL 47

7. SCHEDULE 48

8. WASTE MANAGEMENT 49

9. REQUIRED PERMITS 50

10. VERIFICATION OF ACHIEVEMENT OF OBJECTIVES 51

FIGURES

Figure 1-1 Site Location Map (Topo) 2
Figure 1-2 Site Layout and Adjacent Properties Map 4
Figure 2-1 Site Layout and Solid Waste Management Units 7
Figure 2-2 MIP Boring Location Map (MIP borings with Site features) 11
Figure 2-3 Soil Boring Location Map 13
Figure 2-4 Area of PCE above Objectives – Map View 22
Figure 2-5 Area of PCE above Objectives – 3-Dimensional Site View 23
Figure 2-6 Area of TCE above Objectives – Map View 24
Figure 2-7 Area of TCE above Objectives – 3-Dimensional Site View 25
Figure 2-8 Area of TCA above Objectives – Map View 26
Figure 2-9 Area of TCA above Objectives – 3-Dimensional Site View 27
Figure 2-10 FID Representation above Objectives – Map View 29
Figure 2-11 FID Representation above Objectives – 3-Dimensional Site View 30
Figure 2-12 Extent of Areas above Objectives 31
Figure 2-13 Supplemental Soil Boring Location Map 34
Figure 3-1 Area of Planned Remediation 37
Figure 4-1 Area of Planned Sheet Piling Installation 43
Figure 10-1 Proposed Sample Location Map 52

TABLES

Table 2-1 Soil Boring Sample Location Rationale 15
Table 2-2 Soil Analytical Results 16
Table 2-3 Soil Analytical Results Compared to Remedial Objectives 18
Table 2-4 Remediation Grid Summary of Depths above Remedial Objectives 32
Table 2-5 Proposed Supplemental Soil Borings 35
Table 4-1 Overburden Soils Summary 41
Table 10-1 Proposed Verification Soil Borings 53
Table 10-2 Site-Specific Remedial Objectives 54

APPENDICES

Appendix A – Photos
Appendix B – MIP Report
Appendix C – Sampling Protocol
Appendix D – Boring Logs
Appendix E – Analytical Laboratory Reports
Appendix F – MIP Correlation Data
Appendix G – Expanded VOC List
Appendix H – Remedial Activities Checklists

R:\Detrex\Remedial Investigation 2012\Corrective Measures Plan\Detrex Corrective Measures Plan Feb 2013.doc

K-3A
Correspondence from IEPA

Correspondence from IEPA

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
9/30/1992 B-113	Original RCRA Part B Permit was issued. SWMUs of concern are: (1)Waste Holding Area; (2) Fuel Spill Area; (3) Tank Car Unloading Area; and (4) Potential UST Area.	Effective Date: 11/4/1992
6/17/1993 B-113	RFI Phase I workplan, received 3/5/1993.	Approved with condition and modifications.
9/10/1993 B-113	Proposed revision to IEPA's 6/17/1993 letters, submitted on 8/6/1993.	Approved with condition and modifications.
6/15/1994 B-113	RFI Phase I Report, received 3/21/1994.	Approved; required submittal of Phase II RFI workplan.
1/27/1995 B-113	RFI Phase II workplan received on 9/1/1994 contained a workplan to evaluate the extent of soil and groundwater contamination at 4 SWMUs on site.	Approved with condition and modifications.
7/18/1996 B-113-CA-2	RFI Phase II (Stage I Report) received on 2/1/1996, contained investigation results and proposed additional soil and groundwater investigation at 4 SWMUs.	Approved with condition and modifications.
1/22/1997 B-113-CA-2	Scope of Work for RFI Phase II (Stage I Report) dated 1/6/1997.	Approved; indicated that the investigation report should follow the 7/18/1996 letter and the Recommended Contents of RCRA Soil and Groundwater Investigation Report.
11/19/2003 B-113-CA-3 & 4	Two documents: (1) Phase II Stage 2 Investigation Summary and Tier 1 TACO Evaluation for Detrex Corporation's RCRA Facility in Melrose Park, Illinois; and (2) Tier 2 TACO Analysis for Detrex RCRA Facility, Melrose Park, Illinois, addendum to Site Investigation report..	Disapproved requiring Detrex to submit a revised document to address all deficiencies noted in this letter.
10/9/2003 B-113R	Renewed RCR Part B Permit was issued.	
IPCB 04-104 01.04.2004	Letter to Detrex regarding request for extension to March 23, 2004 for submission of information	IEPA approved 90 day extension.
12/27/2005 B-113-CA-5	Groundwater Sampling report, dated 9/24/2004. This document was submitted in response to IEPA's 11/19/2003 letter and a meeting between IEPA & Detrex on 3/16/2004.	Illinois EPA provided the following comments: (1) report to address soil attenuation capacities and soil saturation limits within 90-days; (2) plan to address off-site contamination of groundwater; (3) Cannot eliminate groundwater ingestion exposure route; (4) use of risk based modeling in groundwater cannot be used with the information provided within the submittals(s); phase II RFI workplan is required.
02.24.2006 B-113-CA-5	Response to a request for an extension to responding to paragraph 12 of the 12.27.2005 letter (B-113-CA-5)	IEPA approved 60 day extension.
5/22/2007 B-113-CA-6& 7	-Summary of Environmental Conditions and Workplan for Detrex Facility Located in Melrose Park, Illinois, dated 11/1/2006)	Approved with conditions and modifications.

K-3A
Correspondence from IEPA

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
7/9/2009 B-113-CA-8&9	Four submittals: (1) A 12/19/2007 request for a meeting; (2) Phase II Summary of Environmental Conditions Report, dated 5/5/2008; (3) Additional Information for Detrex Corp, dated 10/2/2008; and (4) Updated Water Well Survey, dated 5/12/2009. (2) through (4) were submitted as result of a Feb. 2008 meeting between Detrex and IEPA.	Approved with conditions and modifications. Site-specific C_{sat} and f_{oc} values are approved and a CM plan is required to be submitted. Further groundwater investigation and continued gw monitoring is required. This letter identified the likely sources of contaminations from the Detrex in a figure attached as Attachment D to this letter. ***NOTE: This letter was supersede by 1/6/2010 letter (B-113R-CA-11).***
12/21/2009 B-113-CA-10	"Evaluation of Data Collected on the Outback Property", dated 7/22/2009. Summarized the soil, and soil-gas sampling results at Outback facility.	Approved with conditions and modifications. Establishment of a vapor remigration system, an engineered barrier, and an ELUC for the Outback property to remediate the site was required. Additional information regarding proposed Tier 2 GROs was also required to be submitted.
1/6/2010 B-113R-CA-11	Detrex's 9/8/2009 submittal that contained a meeting agenda and additional information for CA to be discussed during 9/15/2009 meeting in response to IEPA's 7/9/9009 letter.	This letter superseded IEPA's 7/9/2009 letter. Additionally included in this letter are following: (1) Exclusion of GW pathway was not approved due to C_{sat} exceedances; (2) workplan for additional gw sampling was required; (3) indoor inhalation exposure pathway evaluation is required; (4) groundwater contamination was delineated to the south, to the east and to the west of Detrex facility.
6/15/2010 B-113R-CA-13	Detrex's CMP-Phase I, dated 12/15/2009. It proposed to conduct a pilot testing using (1) High-Vacuum Vapor Extraction (HVE) System and Oxidant Injection System, in the southwestern portion of the Detrex facility.	Approved with conditions and modifications. It required submitting an additional information of the proposed pilot test system.
7/6/2010 B-113R-CA-14&15	Two submittals are made: (1) Revised Tier 2 GW Demonstration in response to IEPA 12/21/2009 letter, dated 2/12/2010; and (2) Response to IEPA 12/21/2009 letter, dated 3/15/2010. These contained the following: (1) a revised Tier 2 GW ROs; (2) A draft ELUC for Outback facility; (3) Vapor Mitigation Workplan; (4) The engineered barrier workplan.	Approved with conditions and modification. This letter: (1) approved Tier 2 GW remediation objectives (ROs) for 4 COCs; (2) required submittal of a well plugging and abandonment certificates; (3) approved proposed ELUC for Outback property; (4) required installation of an "active" venting system for vapor mitigation system; (5) required a revised workplan for installation of an acceptable mitigation system; (6) required inspection and repair of the proposed engineered barrier by a professional engineer; (7) required a report be submitted for the inspection and repair of the proposed engineered barrier.
10/4/2010 B-113R-CA-12	Two documents were submitted: (1) Additional Off-Site Investigation Workplan, dated 11/19/2009; and (2) revisions to Section 3 of the Additional Off-Site Investigation Workplan, dated 6/24/2010.	Approved with conditions and modifications. It approved the locations of up to 7new GW monitoring wells proposed in the submittal. Determination of extent of gw contamination is required.
3/9/2011 B-113R-CA-16	CMP-Phase I: Addendum 1- response to IEPA Comments in its 6/15/2010 letter (see B-113R-CA-13). Submittal dated 7/7/2010.	Approved with conditions and modifications. It required submittal of a pilot test report within 45days of receiving of soil analytical data. Also indicated that Detrex obtained an required permit from BOA.
7/29/2011 B-113R-CA-19	A 5/18/2011 letter contained a request to modify the pilot testing parameters required in Condition 5 of IEPA's 3/9/2011 letter.	Approved with conditions and modifications.

Correspondence from IEPA

IEPA Letter Dates & Log No.	Description of Submittal	IEPA Action Taken
1/24/2012 B-113R-CA-20	Detrex's 10/14/2011 submittal contained modifications made to the Phase I CMP (pilot testing of HVE system and Oxidant Injection System) and a request for an extension to the submittal of a plot test report. It also indicated the discovery of the DNAL in the pilot testing area.	Approved with conditions and modifications. It required submittal of a comprehensive pilot testing report by March 15, 2012 (see B-113R-CA-21 below).
7/3/2012 B-113R-CA-21	Corrective Measures Plan- Phase I summary Report, dated March 15, 2012 submitted by Betty Locey, PhD, DABT, of ARCADIS. This document summarizes the HVE and Oxidant Diffusion Pilot tests conducted at the facility as required in Illinois EPA's 6/15/2010, 3/19/2011, 7/27/2011 and 10/18/2011 letters.	Approved with conditions and modifications. An alternative remedial option would have to be implemented as the pilot tests on the oxidant Injection System and HVE system did not work as anticipated at the site. A Phase II CMP must be submitted by September 15, 2012.
9/17/2012 B-113R-CA-23	IEPA response to Detrex's August 1, 2012 submittal regarding a Vapor Mitigation Plan for Outback Sales property.	Approved with conditions and modifications.
11/26/2012 B-113R-CA-24 1/29/2013 B-113R-CA-24 (2)	August 2012 submittal included an extension request for submission of Phase II CMP as more time is needed to evaluate alternative remedial options for Detrex site. September 2012 submittal included a preliminary sampling plan using Membrane interface Probe (MIP) to assess the site that would be conducted prior to developing a Phase II CMP for the site.	Approved with conditions and modifications. A Phase II CMP must be submitted by 2/1/2013. The original approval letter was returned due to a new mailing address at the facility. The original letter was forwarded to the facility. The due date for Phase II CMP is now due on February 15, 2013 (instead of Feb 1).
06/19/2013 B113R-CA18 & CA22	IEPA response to two documents (Site investigation Completion Report and Semi-annual GW monitoring report, second quarter 2012) submitted to IEPA regarding groundwater corrective action requirements for the site	IEPA approves a GMZ for the site estabilishing MWs 10, 11, 12, 13, 14, 15 & 16 as the boundary of the GMZ. Discontinuance of sampling MWs 3, 4, 6 and 7 are approved as wells are no longer a part of the program. Approves removal of benzene as a COC. requires evaluation of GMZ every five (5) years.
06/24/2013 B113R-CA25	IEPA response to the Phase II CMP, Final Design and Construction WP submitted by Huff and Huff on behalf of Detrex Corporation.	IEPA provides notice the CMP is not being approved althoguh remedial concepts aer viable. IEPA specifies various problems with the CMP as presented including the need for the collection of additional data beyond that proposed in the plan.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 Mary A. Gade, Director

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE MANAGEMENT RCRA PART B PERMIT

Operator
Detrex Corporation
Attn: Mr. Daniel Anderson
Branch Manager
2537 LeMoyne Avenue
Melrose Park, Illinois 60160

Owner
Clauss Industrial District
Attn: Mr. Richard R. Lareno
Managing Agent
21150 Prestwick Drive
Barrington, Illinois 60010

Illinois EPA #0311860003 -- Cook County
USEPA ILD074424938
Detrex Corporation, Melrose Park Facility
RCRA Permit No. 113
[redacted]
RCRA -- Part B

Issue Date: September 30, 1992
Effective Date: November 4, 1992
Expiration Date: November 4, 2002
Modification Date: January 4, 1999

A RCRA Part B Permit is hereby granted pursuant to the Resource Conservation and Recovery Act, Illinois Environmental Protection Act, and Title 35 Illinois Administrative Code (I.A.C.) Parts 702, 703, 705, and 720 through 729 to the Detrex Corporation Melrose Park facility to construct/maintain and operate a waste management facility involved in the storage of hazardous waste. Detrex Corporation is located at 2537 LeMoyne Avenue, Melrose Park, Illinois.

This permit consists of the conditions contained herein (including those in any attachments and appendices) and applicable regulations contained in the Illinois Environmental Protection Act and Title 35 I.A.C. Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit. The Environmental Protection Act (Ill. Rev. Stat., Chapter 111 ½, Section 1039) grants the Illinois Environmental Protection Agency the authority to impose conditions on permits which is issued. This Permit contains 75 pages including Attachments A through F.

If you have any questions regarding this Part B Permit, please contact Trupti Dongre at 217/557-3200.

Theodore J. Dragovich, P.E.
Manager, Hazardous Waste Branch
Permit Section
Bureau of Land

TJD:TVD:bjh\982691S.WPD

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

June 17, 1993

RECEIVED
JUN 22 93
Detrex Corporation

Detrex Corporation
Attn: Bill Moore
Post Office Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation
ILD074424938
Date Received: March 5, 1993, April 16, 1993
Log No. B113

Dear Mr. Moore:

The RCRA Facility Investigation (RFI) Phase I Workplan for the above-referenced facility submitted by Ed Roberts, P.E. of Conestoga-Rovers and Associates, Limited has been reviewed by this Agency. This workplan was submitted in accordance with Condition III.B. of the RCRA Part B permit issued for the above-referenced facility (Log No. B-113) on September 30, 1992. The workplan is hereby approved subject to the following conditions and modifications:

1. This RFI Phase I Workplan shall be carried out to investigate for possible releases from the following solid waste management units (SWMUs):

SWMU NO.	NAME
1	Waste Handling Area;
2	Fuel Spill Area;
3	Tank Car Unloading Area; and
Tentatively Identified	Potential Underground Tank Area (Immediately west of the outdoor Virgin Products Tank diked area).

As stated in Condition III.B of the RCRA permit, the purpose of the activities described in the Phase I Workplan is to "document the absence or presence of hazardous waste or hazardous constituents in the groundwater, surface water, sediments, soils and air" from the SWMUs listed above. Thus, the workplan was reviewed with this in mind.

2. RFI Phase I activities must be completed by December 15, 1993. When Phase I is complete, the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility completed Phase I in accordance with the specifications in the approved RFI Phase I workplan. In addition, a certification meeting the requirements of 35 IAC 702.126 must be provided by a person of authority (as defined in 35 IAC 702.126) at the laboratory conducting the required chemical analyses that the requirements set forth in this letter were met during the chemical analysis of all samples. This certification by the laboratory must address the applicable sample collection, preservation, handling, preparation and analytical requirements set forth in this letter. These certifications, along with the report described below must be received at this Agency by February 15, 1994. These dates may be extended if Detrex submits information to the Agency indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

   The attached certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI workplan in the State of Illinois must be done by an Illinois P.E.

   Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

   As part of the certification, to document the RFI Phase I activities at your facility, please submit a Phase I Report and Summary which includes, at a minimum:

   a. The information identified in Condition 16 below regarding the required soil sampling/analysis effort at each SWMU of concern.

b. Information which the workplan indicates will be in the report;

c. A chronological summary of Phase I activities and the cost involved;

d. Color photo documentation of Phase I activities; and

e. A description of the qualifications of personnel performing and directing the RFI activities including contractor personnel.

f. Conclusions which can be reached based upon the collected information; and

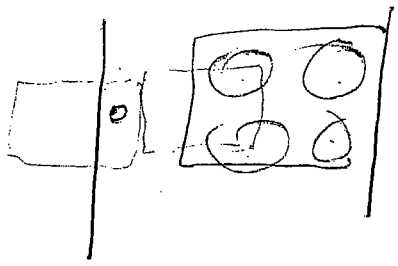
g. A general discussion of the actual activities which should be carried out as part of Phase 2 of the RCRA Facility Investigation.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

3. If the Agency determines that implementation of this RFI Workplan fails to satisfy the requirements of Section III of the RCRA Part B Permit (Log No. B-113), the Agency reserves the right to require that additional work be completed to satisfy these requirements. Revisions of RFI Workplans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

4. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846). When a SW-846 (Third Edition) analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Agency. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. For inorganic parameters, the detection limit achieved during the analysis of the TCLP extract must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15.



5. To ensure the purpose of the Phase 1 investigation as described in Condition 1 above is achieved, additional soil samples must be collected at the following locations:

   a. One location adjacent to the catch basin at the loading dock (SWMU No. 1);

   b. At least one location near the stand pipe of the suspected underground storage tank (SWMU No. 4). If a storage tank is found to be present, then samples must be collected from at least one location along each side of the tank;

   c. Three additional locations north of the railroad tracks at SWMU No. 3;

   d. Two additional locations south of the railroad tracks at SWMU No. 3; and

   e. One additional location west of Sample BH7-93 at SWMU No. 3.

   Collection and analysis of these additional samples shall be carried out in accordance set forth in the approved workplan and this letter.

6. One soil boring should be advanced to a depth of at least 50′ to obtain preliminary general information about the sub-surface geology/hydrogeology at the facility. The soil must be continuously sampled and characterized in accordance with the procedures set forth in Conditions 7.a and 7.b below.

7. The following procedure must be utilized in the collection of all required soil samples:

   a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

   b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

      1. the procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

      2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

   c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions;

d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;

e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and

f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

8. All soil samples initially collected for analysis, as identified in Condition 5 above and the approved workplan, must be analyzed for the constituents listed below. The detection limits achieved during these analyses must be below the levels of concern listed below for each compound. The list of constituents below are based upon an evaluation of the types of waste managed at this facility.

If soil is encountered during the initial sampling/analysis efforts required by this approval letter which contains contaminants above the levels listed below, then additional soil samples must be collected, as necessary to determine the horizontal and vertical extent of soil which contains contaminants in concentrations higher than the levels below. The procedures used to collect and analyze these samples must be in accordance with those approved in this letter. The procedures used to determine the horizontal and vertical locations from which soil samples are to be collected in accordance with Sections 13.a and 13.b of the Agency's RCRA closure plan instructions (revised December 1990). However, no random sampling shall be used in making this determination.

PARAMETER	LEVEL OF CONCERN (mg/kg)
Tetrachloroethylene	0.005
1,1,1-Trichloroethane	0.2
Trichloroethylene	0.005
Methylene Chloride	0.005
Freon 113	210.0
Benzene	0.005
Toluene	1.0
Ethylbenzene	0.7
Xylene	10.0
1,1-Dichloroethane	0.7
1,1-Dichlorethene	0.007
1,2-Dichloroethane	0.005
cis-1,2-Dichloroethene	0.07
trans-1,2-Dichloroethene	0.1
Vinyl chloride	0.005

35.620 [illegible] sem. Code.

8310 method.

PARAMETER	LEVEL OF CONCERN (mg/kg)
Acenaphthene	8.4
Anthracene	42.0
Benzo(a)anthracene	0.0026
Benzo(a)pyrene	0.0046
Benzo(b)fluoranthene	0.0036
Benzo(k)fluoranthene	0.0034
Chrysene	0.03
Dibenzo(a,h)anthracene	0.006
Fluoranthene	5.6
Fluorene	5.6
Indeno(1,2,3-c,d)pyrene	0.0086
Naphthalene	0.025
Pyrene	4.2
Other Non-Carcinogenic PNAs (Sum of the PNAs below)	
Acenaphthylene	4.2
Benzo(g,h,i)perylene	
Phananthrene	
Arsenic*	0.05
Barium*	2.0
Cadmium*	0.005
Chromium*	0.1
Lead*	0.0075
Mercury*	0.002
Selenium*	0.05
Silver*	0.05

* These objectives are based upon the analysis of the extract of the TCLP test described in Method 1311 of SW-846. The units of these objectives are mg/l.

9. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

[illegible] crack – Bore min of 4, [illegible] base.

10. All concrete/asphalt surfaces within SWMUs 1, 2 and 3 shall be visually inspected, photographed and any residue adhering to the surface must be removed by scraping and/or brushing. Following this, the concrete/asphalt surfaces must be steam cleaned and triple rinsed. All wash and rinse water shall be collected. If analysis of the wash or rinse waters detect the presence of hazardous constituents or it exhibits a characteristic of

Remediation to Concrete

what constituents

hazardous waste, then the wash or rinse water shall be collected and managed as a hazardous waste. In any event the material must be managed as a special waste.

After cleaning the concrete asphalt surfaces of each SWMU, an independent registered professional engineer shall inspect the integrity of the concrete/asphalt surfaces. These surfaces shall be inspected for cracks which penetrate through the concrete/asphalt. In addition, all construction joints must be inspected to ensure they are watertight. This inspection must be carried out in accordance with standards and recommendations of professional/technical entities such as the American Concrete Institute, the Portland Cement Association, the American Society for Testing and Materials, the American Society of Civil Engineers, etc. which relate to the ability of concrete structures to contain liquids.

The results of this inspection shall be (1) submitted as part of the Phase I RFI report, and (2) certified in accordance with 35 Ill. Adm. Code 702.126 by the engineer. The report must include (1) the results of the inspection, (2) scaled drawings showing the location of all cracks and construction joints observed during the investigation, (3) conclusions reached regarding any cracks or construction joints observed in the areas of concern, (4) justification for the conclusions reached (e.g., information must be provided which indicates that any construction joints in the areas of concern are indeed watertight), and (5) photographs to support the conclusions reached.

not Phase II

If joints, cracks or other defects are found which would potentially allow hazardous waste or hazardous constituents to migrate through the base, then soil samples <u>must</u> be collected from beneath the joint/crack/defect to determine if hazardous waste or hazardous constituents have been released to the underlying soil. This sampling/analysis effort shall be carried out in accordance to the below listed procedures.

a. Samples must be collected from at least one location along <u>each</u> joint or crack that provides a potential for hazardous waste or hazardous constituents to migrate to underlying soil. If the crack/joint is more than approximately 10′ long, then samples must be collected from along the crack/joint at approximately 10′ intervals. Such locations shall be biased to stained areas or low-lying areas where spills would tend to accumulate.

b. Samples must be from 3"-9" below the backfill/natural soil interface at each location. Collection and analysis of each sample shall be carried out in accordance with the procedures set forth in this letter.

c. Collection and analysis of these samples shall be carried out in accordance with the procedures set forth in the approved workplan and this approval letter.

11. The Illinois Pollution Control Board recently finalized regulations establishing groundwater quality standards for the State of Illinois (see 35 IAC 620). As such, the Agency must ensure that the soil cleanup objectives established for this facility will not cause any future violations of these standards. Therefore, unless site specific information is submitted to the Agency to indicate otherwise, soil cleanup objectives for this site will be based upon the protection of Class I groundwater (potable resource groundwater). In addition, any required groundwater cleanup objectives will also be developed assuming Class I groundwater, unless sufficient information is provided to indicate otherwise.

why?

12. Any equipment, including heavy earth movers or smaller tools, shall be scraped to remove any residue. Following this, the equipment must be steam cleaned and triple rinsed. All residues, wash and rinse water shall be collected and managed as a hazardous waste if analysis of the waste detects the presence of hazardous constituents or it exhibits a characteristic of hazardous waste. In any event the material must be managed as a special waste.

13. The Health and Safety Plan contained in the subject workplan is neither approved nor disapproved. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

14. Reports must be prepared and submitted to the Agency which describe the activities completed each quarter of the calendar year while the Phase I investigation is being carried out. The quarterly reports shall contain at a minimum:

Sub w/ our letter to IEPA on wording changes.

    a. An estimate of the percentage of the investigation completed;

    b. Summary of activities completed during the reporting period;

    c. Summaries of all actual or proposed changes to the Workplan or its implementation;

    d. Summaries of all actual or potential problems encountered during the reporting period;

e. Proposal for correcting any problems;

f. Projected work for the next reporting period; and

g. Other information or data as requested in writing by the Agency's DLPC.

15. A quarterly report for the work completed from the date of this letter to June 30, 1993 must be submitted to the Agency by July 31, 1993. Subsequent quarterly reports must be submitted in a similar manner until the final Phase I RFI Report required by Condition 2 above is submitted to the Agency.

16. The portion of the final RFI Phase I report documenting the results of the required soil sampling/analysis effort must contain the following information, for each SWMU investigated:

a. A discussion of (1) the reason for the sampling/analysis effort conducted at each SWMU and (2) the goals of the sampling analysis effort conducted at each SWMU;

b. A scaled drawing showing the horizontal and vertical location where all soil samples were collected at each SWMU;

c. Justification for the locations from which soil samples were collected;

d. A description of the procedures used for:

1. Sample collection;

2. Sample preservation:

3. Chain of custody; and

4. Decontamination of sampling equipment.

e. Visual classification of each soil sample collected for analysis;

f. A discussion of the results of any field screening efforts;

g. A description of the soil types encountered during the investigation, including scaled cross-sections;

h. A description of the procedures used to analyze the soil samples, including:

1. The analytical procedure used, including the procedures, if any, used to prepare the sample for analysis;

2. Any dilutions made to the original sample;

3. Any interferences encountered during the analysis of each sample; and

4. The practical quantitation limit achieved, including justification for reporting PQLs which are above those set forth in SW-846.

i. A description of all quality control/quality assurance analyses conducted, including the analysis of lab blanks, trip blanks and field blanks;

j. A description of all quality assurance/quality control efforts made overall;

k. A summary of all analytical data, including QA/QC results, in tabular form;

l. Copies of the final laboratory sheets which report the results of the analyses, including final sheets reporting quality assurance/quality control data;

m. Colored photographs documenting the sampling effort; and

n. A discussion of the collected data. This discussion should identify those sample locations where contaminants were detected and the concentrations of the contaminants. Conclusions which can be drawn from the information compiled should also be included in this discussion.

17. If the Agency's DLPC determines, based on the data obtained from the Phase I Workplan activities, that there has been no release of hazardous waste or hazardous constituents to the environment from a SWMU identified in Condition 1 above, then no further investigative action will be required for that SWMU. If the Agency's DLPC determines, based on the data, that there has been a release of hazardous waste or hazardous constituents to the environment or that the data is inconclusive, the Permittee will be notified by the Agency's DLPC. (Refer to Section III, Subsection C of the Part B Permit).

18. If Detrex conducts a Phase I investigation which differs from the described above, then it must provide adequate justification in the report required by Condition 2 above for the variances. As stated in Condition 1 above, the Agency feels that the requirements set forth in this letter are necessary to reach a conclusion that there has not been a release from a given SWMU. If the goals of Detrex are somewhat different than this, then there <u>may be</u> justification for varying from the requirements set forth in this letter.

19. All references to the "Agency's RCRA closure plan instructions" refer to the document entitled Instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities, December 11, 1990. A copy of this document is enclosed.

20. Based upon a review of the Waste Handling Area, it appears as though the catch basin present in this area should be sealed to prevent a release of hazardous waste to surface water.

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS:lat/sp/419Y,1-11

Attachments: RFI Phase I Certification Statements (2)
Instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities

cc: USEPA Region V -- George Hamper

RFI Phase I Certification Statement

Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Part B Log B-113

RFI Phase I activities at the facility described in the RFI Phase I Workplan have been completed in accordance with the specifications in the approved RFI Workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title
Signature of Registered P.E. Date	Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

LWE:WTS:lat/sp/419Y,12

Laboratory Certification Statement
Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Log No. B-113

Upon completion of Phase 1 of the RFI this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and (2) a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of Phase I of the RFI. The original of this statement shall accompany the original certification statement for the overall Phase I activities and the RFI Phase I Report.

The sample collection, handling, preservation, preparation and analysis conducted as part of Phase I of the RFI at the facility described in this document has been conducted in accordance with the specifications in the approved workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title of Owner/Operator Representative
Name of Laboratory	Signature of Laboratory Responsible Officer Date
	Name and Title of Laboratory Responsible Officer

Mailing Address of Laboratory:

LWE:WTS:lat/sp/419Y,13

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
217/524-3300

2200 Churchill Road, Springfield, IL 62794-9276

September 10, 1993

RECEIVED
SEP 14 93
Detrex Corporation

Detrex Corporation
Attn: Bill Moore
Post Office Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation
ILD074424938
Date Received: August 12, 1993
Log No. B113

Dear Mr. Moore:

This is in response to the August 6, 1993 submittal made on behalf of Detrex Corporation by Ed Roberts, P.E. of Conestoga-Rovers and Associates, Limited has been reviewed by this Agency. Mr. Robert's submittal requested that several modifications be made to the Agency's June 17, 1993 approval letter regarding the Phase I RFI Workplan for the above-referenced facility. These modifications and the overall Phase I RFI Workplan for the subject facility are hereby approved subject to the following conditions and modifications:

1. This RFI Phase I Workplan shall be carried out to investigate for possible releases from the following solid waste management units (SWMUs):

SWMU NO.	NAME
1	Waste Handling Area;
2	Fuel Spill Area;
3	Tank Car Unloading Area; and
Tentatively Identified	Potential Underground Tank Area (Immediately west of the outdoor Virgin Products Tank diked area).

2. Except as modified in the subject submittal and this approval letter, Phase I of the RFI carried out at the Detrex Corporation facility in Melrose Park shall be carried out in accordance with the plans received by the Agency on March 5, 1993 and April 16, 1993. The purpose of the activities described in the Phase I Workplan is to document the absence or presence of hazardous waste or constituents in the soils from the SWMUs listed above. Thus, the Workplan was reviewed with this in mind.

3. RFI Phase I activities must be completed by December 15, 1993. When Phase I is complete, the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility completed Phase I in accordance with the specifications in the approved RFI Phase I Workplan. In addition, a certification meeting the requirements of 35 IAC 702.126 must be provided by a person of authority (as defined in 35 IAC 702.126) at the laboratory conducting the required chemical analyses that the requirements set forth in this letter were met during the chemical analysis of all samples. This certification by the laboratory must address the applicable preservation, handling, preparation and analytical requirements set forth in this letter. These certifications, along with the report described below must be received at this Agency by February 15, 1994. These dates may be extended if Detrex submits information to the Agency indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

   The attached certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI.

   The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI Workplan in the State of Illinois must be done by an Illinois P.E.

   Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

   As part of the certification, to document the RFI Phase I activities at your facility, please submit a Phase I Report and Summary which includes, at a minimum:

   a. The information identified in Condition 15 below regarding the required soil sampling/analysis effort at each SWMU of concern.

b. Information which the Workplan indicates will be in the report;

c. A chronological summary of Phase I activities and the cost involved;

d. Color photo documentation of Phase I activities; and

e. A description of the qualifications of personnel performing and directing the RFI activities and general qualification information for contractors (e.g., laboratory drillers).

f. Conclusions which can be reached based upon the collected information; and

g. A general discussion of the actual activities which should be carried out as part of Phase 2 of the RCRA Facility Investigation.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

4. If the Agency determines that implementation of this RFI Workplan fails to satisfy the requirements of Section III of the RCRA Part B Permit (Log No. B-113), the Agency reserves the right to require that additional work be completed to satisfy these requirements. Revisions of RFI Workplans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

5. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846). Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. All soil samples must be analyzed for:

a. Volatile organic compounds using Method 8240 of SW-846. All constituents listed in the Practical Quantitation Limits Table in this method must be analyzed for and the Practical Quantitation Limits in that table must be achieved, if at all possible.

b. Polynuclear aromatic hydrocarbons using method 8310 of SW-846. All constituents listed in the Practical Quantitation Limits Table in this method must be analyzed for and the Practical Quantitation Limits in that table must be achieved, if at all possible.

6. To ensure the purpose of the Phase 1 investigation as described in Condition 1 above is achieved, additional soil samples must be collected at the following locations:

   a. One location adjacent to the catch basin at the loading dock (SWMU No. 1) and additional locations, as necessary, along joints, cracks or other defects in the loading dock base which would potentially allow hazardous waste or hazardous waste constituents to migrate through the base);

   b. One surface soil location near the standpipe of the suspected underground storage tank (SWMU No. 4). If a storage tank is found to be present, at least two samples, locations to be selected based on field conditions observed (e.g. stained soils), will be collected from a test pit(s) excavated to determine the orientation and size of the tank. Soil samples collected from this location will be analyzed for VOCs using Method 8240 and for PAHs using Method 8310 (SW-846, Third Edition)."

   c. If it is determined during completion of boreholes BH6-93 through BH11-93, that hazardous waste or constituents are not present in the soils at SWMU No. 3, the following additional borehole locations will be required to demonstrate the absence of hazardous waste or hazardous constituents in the soils at SWMU No. 3:

      1. Three additional locations north of the railroad tracks at SWMU No. 3;

      2. Two additional locations south of the railroad tracks at SWMU No. 3; and

      3. One additional location west of Sample BH7-93 and SWMU No. 3.";

   Collection and analysis of these additional samples shall be carried out in accordance set forth in the approved Workplan and this letter.

7. An attempt shall be made to advance one soil boring to a depth of 50′, dependent upon capabilities of drilling equipment utilized, to obtain preliminary general information about the subsurface, geology/hydrogeology at the facility.

8. The following procedure must be utilized in the collection of all required soil samples:

   a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

   b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

      1. the procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

      2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

   c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions;

   d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;

   e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and

   f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

9. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

10. The Illinois Pollution Control Board recently finalized regulations establishing groundwater quality standards for the State of Illinois (see 35 IAC 620). As such, the Agency must ensure that the soil cleanup objectives established for this facility will not cause any future violations of these standards. Therefore, unless site specific

information is submitted to the Agency to indicate otherwise, soil cleanup objectives for this site will be based upon the protection of Class I groundwater (potable resource groundwater). In addition, any required groundwater cleanup objectives will also be developed assuming Class I groundwater, unless sufficient information is provided to indicate otherwise.

11. Any equipment, including heavy earth movers or smaller tools, shall be scraped to remove any residue. Following this, the equipment must be steam cleaned and triple rinsed. All residues, wash and rinse water shall be collected and managed as a hazardous waste if analysis of the waste detects the presence of hazardous constituents or it exhibits a characteristic of hazardous waste. In any event the material must be managed as a special waste.

12. The Health and Safety Plan contained in the subject Workplan is neither approved nor disapproved. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

13. Reports must be prepared and submitted to the Agency which describe the activities completed each quarter of the calendar year while the Phase I investigation is being carried out. The quarterly reports shall contain at a minimum:

    a. An estimate of the percentage of the investigation completed;

    b. Summary of activities completed during the reporting period;

    c. Summaries of all actual or proposed changes to the Workplan or its implementation;

    d. Summaries of all actual or potential problems encountered during the reporting period;

    e. Proposal for correcting any problems;

    f. Projected work for the next reporting period; and

    g. Other information or data as requested in writing by the Agency's DLPC.

g. Other information or data as requested in writing by the Agency's DLPC.

14. A quarterly report for the work completed from the date of this letter to September 30, 1993 must be submitted to the Agency by October 31, 1993. Subsequent quarterly reports must be submitted in a similar manner until the final Phase I RFI Report required by Condition 2 above is submitted to the Agency. The Agency acknowledges receipt of the initial report for the quarter ending June 30, 1993.

15. The portion of the final RFI Phase I report documenting the results of the required soil sampling/analysis effort must contain the following information, for each SWMU investigated:

    a. A discussion of (1) the reason for the sampling/analysis effort conducted at each SWMU and (2) the goals of the sampling analysis effort conducted at each SWMU;

    b. A scaled drawing showing the horizontal and vertical location where all soil samples were collected at each SWMU;

    c. Justification for the locations from which soil samples were collected;

    d. A description of the procedures used for:

        1. Sample collection;

        2. Sample preservation:

        3. Chain of custody; and

        4. Decontamination of sampling equipment.

    e. Visual classification of each soil sample collected for analysis;

    f. A discussion of the results of any field screening efforts;

    g. A description of the soil types encountered during the investigation, including scaled cross-sections;

    h. A description of the procedures used to analyze the soil samples, including:

        1. The analytical procedure used, including the procedures, if any, used to prepare the sample for analysis;

        2. Any dilutions made to the original sample;

4. The practical quantitation limit achieved, including justification for reporting PQLs which are above those set forth in SW-846.

i. A description of all quality control/quality assurance analyses conducted, including the analysis of lab blanks, trip blanks and field blanks;

j. A description of all quality assurance/quality control efforts made overall;

k. A summary of all analytical data, including QA/QC results, in tabular form;

l. Copies of the final laboratory sheets which report the results of the analyses, including final sheets reporting quality assurance/quality control data;

m. Colored photographs documenting the sampling effort; and

n. A discussion of the collected data. This discussion should identify those sample locations where contaminants were detected and the concentrations of the contaminants. Conclusions which can be drawn from the information compiled should also be included in this discussion.

16. If the Agency's DLPC determines, based on the data obtained from the Phase I Workplan activities, that there has been no release of hazardous waste or hazardous constituents to the environment from a SWMU identified in Condition 1 above, then no further investigative action will be required for that SWMU. If the Agency's DLPC determines, based on the data, that there has been a release of hazardous waste or hazardous constituents to the environment or that the data is inconclusive, the Permittee will be notified by the Agency's DLPC. (Refer to Section III, Subsection C of the Part B Permit).

17. If Detrex conducts a Phase I investigation which differs from the described above, then it must provide adequate justification in the report required by Condition 2 above for the variances. As stated in Condition 1 above, the Agency feels that the requirements set forth in this letter are necessary to reach a conclusion that there has not been a release from a given SWMU. If the goals of Detrex are somewhat different than this, then there <u>may be</u> justification for varying from the requirements set forth in this letter.

18. All references to the "Agency's RCRA closure plan instructions" refer to the document entitled Instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities, December 11, 1990. A copy of this document is enclosed.

Should you have any questions regarding this matter, please contact William T. Sinnott II at 217/524-3300.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WTS:lat/sp/419Y,1-9

Attachments: RFI Phase I Certification Statements (2)
Instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities

cc: USEPA Region V -- George Hamper

RFI Phase I Certification Statement

Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Part B Log B-113

RFI Phase I activities at the facility described in the RFI Phase I Workplan have been completed in accordance with the specifications in the approved RFI Workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title
Signature of Registered P.E. Date	Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:

Registered P.E.'s Seal:

LWE:WTS:lat/sp/419Y,10

Laboratory Certification Statement
Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Log No. B-113

Upon completion of Phase 1 of the RFI this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and (2) a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of Phase I of the RFI. The original of this statement shall accompany the original certification statement for the overall Phase I activities and the RFI Phase I Report.

The applicable sample, handling, preservation, preparation and analysis conducted as part of Phase I of the RFI at the facility described in this document has been conducted in accordance with the specifications in the approved Workplan. I certify under penalty of law that this document and all attachments were prepared, under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title of Owner/Operator Representative
Name of Laboratory	Signature of Laboratory Responsible Officer Date
	Name and Title of Laboratory Responsible Officer

Mailing Address of Laboratory:

LWE:WTS:lat/sp/419Y,11

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

June 15, 1994

JUN 21 94

Detrex Corporation
Attn: Bill Moore
Post Office Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation
ILD074424938
Date Received: March 21, 1994
Log No. B113

Dear Mr. Moore:

The RCRA Facility Investigation (RFI) Phase I Report for the above referenced facility submitted on behalf of Detrex Corporation by Ed Roberts, P.E. of Conestoga-Rovers and Associates, Ltd. has been reviewed by this Agency. This report is hereby approved subject to the following conditions and modifications.

1. It appears that there has been a release to the environment from the 1)Waste Handling Area, 2) Fuel Spill Area, 3) Tank Car Unloading Area and 4) Potential Underground Tank Area. As such, the facility needs to develop a workplan for a Phase II Investigation. The goal of the Phase II Workplan should be to determine the extent of soil contamination at each SWMU.

2. Attachment E of the Part B permit issued to the subject facility outlines the procedures that should be followed when developing a Phase II workplan. The Phase II investigation should be sufficient to determine the horizontal and vertical extent of soil which contains contaminants above the concentrations identified in Condition 7 below.

3. In the Agency's September 10, 1993, Condition 5.a informs the facility that Volatile Organic Compounds must be analyzed for by Method 8240 of SW-846. It appears as though this condition was not followed. As such, the Phase II Workplan must provide analysis of all compounds listed in Method 8240 of SW-846.

4. Page 6 of the Phase I report states "The fuel oil tank located beneath the office area, was abandoned in place in accordance with an approved closure plan. The closure plan was originally approved by the State Fire Marshall on July 19, 1986. Closure was completed in April 1991." This unit had not been identified previously as a SWMU by Detrex Corporation. With this new information in mind, it appears as though the facility should complete

a SWMU Assessment Report in accordance with the Part B RCRA permit. This report should include, among other things, either (1) results of the analyses conducted on soil from around the former tank location or (2) a plan for collecting and analyzing soil samples from around the former tank location.

5. The report uses the proposed corrective action levels set forth in the proposed 40 CFR 264, Subpart S regulations in the July 27, 1990 Federal Register in determining whether a Phase II investigation is necessary. These proposed regulations have never been finalized, and thus it is inappropriate to use them in making this determination. The State of Illinois provided USEPA with substantial comments indicating that, for a variety of reasons, these values were much too high. It is apparent that USEPA must have realized that the proposed corrective action levels were inappropriate, as almost four years has passed and it has yet to finalize these corrective action levels. It must also be noted that the proposed action levels referenced by Detrex did not take into account the impacts such residual soil contamination would have on any underlying groundwater.

6. Insufficient information was provided regarding the acceptable levels of polynuclear aromatic hydrocarbons which could be left in the soil. Of special concern is the following:

   a. The references in Table E.2 are not detailed enough for the Agency to obtain copies of the information being referenced;

   b. The values for urban soils range several orders of magnitudes in some cases. As such, it is inappropriate to use such wide ranges in evaluating the PNA labels detected in the soil at this facility. Any comparison to "typical" values should be made to site-specific background values obtained from collecting and analyzing a minimum of ten samples from area on-site not affected by the operations of the facility.

7. Given the concerns expressed above, the Phase II investigation to be completed by Detrex should be sufficient to determine the horizontal and vertical extent of soil contains contaminants in excess of the values set forth in the following table:

Constituent PNAs	Level of Concern (ug/kg)
Acenapthene	42.0
Anthracene	210.0
Benzo(a)anthracene	0.013
Benzo(a)pyrene	0.023
Benzo(b)fluoranthene	0.018
Benzo(k)fluoranthene	0.017
Chrysene	0.15

Constituent PNAs	Level of Concern (ug/kg)
Dibenzo(a,h)anthracene	0.03
Fluoranthene	28.0
Fluorene	28.0
Indeno(1,2,3-c,d)pyrene	0.043
Napthalene	0.039
Pyrene	21.0
Acenapthylene	21.0
Benzo(g,h,l)perylene	
Phenanthrene	

Halogenated Volatile Organic Compounds (VOCs)

1,1-Dichloroethane	3.5
1,2-Dichloroethane	0.025
1.1-Dichloroethene	0.035
cis-1,2-Dichloroethene	0.2
trans-1,2-Dichloroethene	0.5
Methylene Chloride	0.025
Tetrachloroethene	0.025
1,1,1-Trichloroethane	1.0
Trichloroethene	0.025

8. The values set forth in Condition 7 are not the final cleanup objectives or target levels which will be used to determine if corrective action is necessary at any of the SWMUs at the subject facility. Such values will only be developed after the RFI is completed.

9. Final soil cleanup objectives shall be established after the RFI is complete. These final objectives will determine the need for an extent of soil remediation (soil corrective action) at each SWMU.

   a. The Agency will provide the Permittee with guidance regarding the development of final cleanup objectives along with its approval of the final RFI report.

   b. In general, the procedures to be used in developing the proposed cleanup objectives must:

      1. Consider the distance from the subject SWMUs to potential receptors;

      2. Consider incorporate the 35 Ill. Adm. Code 620 groundwater standards into the development of the objectives;

      3. Assess the potential threats the proposed objectives will have on human health and the environment;

      4. Contain, as necessary, a site-specific and a contaminant specific risk assessment which demonstrates that the proposed

final soil cleanup objectives will not (1) allow the groundwater quality standards of 35 Ill. Adm. Code620 to be exceeded or (2) pose a threat to human health or the environment.

c. The Permittee and the Agency shall meet prior to the time that the Permittee begins developing these objectives. The goal of this meeting will be to provide the Permittee with guidance regarding the procedure which should be followed in developing and proposing these final soil cleanup objectives.

d. The Agency will establish final cleanup objectives if none are proposed by the Permittee.

e. Final Agency action taken on the development of and establishment of these final objectives will be subject to the appeal provisions of Section 39(a) of the Illinois Environmental Protection Act.

10. The fifth paragraph in Section 5.4 indicates that groundwater was encountered at depths between seven and thirteen feet below ground surface. As such, a groundwater investigation must be included in the Phase II workplan. The groundwater investigation portion of the Phase II workplan must be developed in accordance with Attachment E to the Detrex final RCRA permit.

Should you have any questions regarding this matter, please contact William T. Sinnott, II at 217/524-3300.

Sincerely,

Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

DWC:WTS:bst/sp372W/1-4
JKM
cc: George Hamper, USEPA

2105 555 213 pink

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

B-113

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

January 27, 1995

RELEASABLE
Reviewer_____ Date_____

Detrex Corporation
Attn: Bill Moore
Post Office Box 5111
Southfield, Michigan 48086-5111

Clauss Industrial District
Attn: Mr. Richard R. Lareno
Managing Agent
21150 Prestwick Drive
Barrington, Illinois 60010

Re: 0311860003 -- Cook County
Detrex Corporation
ILD074424938
Log No. B113
Received: September 1, 1994
RCRA-Permit

Gentlemen:

The RCRA Facility Investigation (RFI) Phase II Workplan for the above-referenced facility submitted by Ed Roberts P.E. of Conestoga-Rovers has been reviewed by this Agency. This workplan was submitted in accordance with Condition B of Section III of the RCRA Part B Permit issued for the above-referenced facility (Log No. B-113) and the Agency's letter of June 15, 1994. The workplan is hereby approved subject to the following conditions and modifications:

1. This RFI Phase II Workplan shall be carried out to evaluate the extent of soil and groundwater contamination in the vicinity of the following SWMUs:

SWMU Number	Unit Name
1	Waste Handling Area
2	Fuel Spill Area
3	Tank Car Unloading Area
4	Underground Storage Tank

2. RFI Phase II activities be completed by August 1, 1995. When Phase I is complete, the owner or operator must submit to the Agency certification both by a responsible officer of the owner or operator and by an independent registered professional engineer that the facility completed Phase II in accordance with the specifications in the approved RFI Phase II workplan. In addition, a certification statement meeting the requirements of 35 IAC 702.126 must be provided by a responsible officer of the laboratory which conducted the chemical analyses that the requirements of this letter were met during the chemical analyses that the requirements of this letter were met during the chemical analysis of all samples. This certification must address the applicable sample collection, preservation, handling preparation and analytical requirements set forth in this letter. These certifications must be received at this

Agency after completing Phase II, or by October 1, 1995. These dates may be extended if Detrex submits information to the Agency indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

The attached certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI workplan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

As part of the certification, to document the RFI Phase II activities at your facility, please submit a Phase II Report and Summary which includes, at a minimum:

a. The information identified in Condition 10 below regarding the required soil sampling/analysis effort at each SWMU where such an investigation is necessary.

b. The information identified in Condition 11 below regarding any subsurface investigation or monitoring well installation at each SWMU of concern;

c. Information which the workplan indicates will be in the report;

d. A chronological summary of Phase II activities and the cost involved.

e. Color photo documentation of Phase II activities.

f. A description of the qualifications of personnel performing and directing the RFI activities including contractor personnel.

g. A general discussion of the next step which should be taken in completing the corrective action activities necessary to meet the

requirements of 35 IAC 724.201. This should include a discussion of any additional investigations which must be carried out and/or a general discussion of any remedial actions which should be taken in response to the contamination detected at the facility.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

3. If the Agency determines that implementation of this RFI Workplan fails to satisfy the requirements of Section III of the RCRA Part B Permit (Log No. B-113), the Agency reserves the right to require that additional work be completed to satisfy these requirements. Revisions of RFI Workplans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

4. The Phase II investigation to be completed by Detrex should be sufficient to determine the horizontal and vertical extent of soil that contains contaminants in excess of the values set forth in Item 7 of the Agency's June 15, 1994 letter, with the following exceptions:

Parameter	Revised Level of Concern (mg/kg)
Acenapthene	42.0
Anthracene	7.0
Benzo(a)Anthracene	0.7
Benzo(a)Pyrene	0.09
Benzo(b)Fluoranthene	0.9
Benzo(k)Fluoranthene	4.0
Chrysene	0.03
Dibenzo(a,h)Anthracene	0.09
Fluoranthene	68.0
Fluorene	89.0
Indeno(1,2,3-cd)Pyrene	0.9
Other Non-Carcinogenic PNAs (Sum of the three PNAs listed below)	21.0
Acenapthylene	
Benzo(g,h,i)Perylene	
Phenanthrene	
Napthalene	30.0
Pyrene	56.0

As noted in Item 8 of the Agency's June 15, 1994 letter, these values are not final soil cleanup objectives. Final soil cleanup objectives will be developed once the RFI is complete. Guidance regarding the development of these objectives can be found in Item 9 of the June 15, 1994 letter.

5. This letter neither approves or disapproves the Health and Safety Plan contained in the submittal. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

6. All soil samples shall be analyzed individually (i.e., no compositing). Sampling and analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846) and Attachment 7 to this Agency's closure plan instruction package. When a SW-846 (Third Edition) analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Agency. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. For inorganic parameters, the detection limit must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15.

   a. Samples analyzed for volatile organic compounds shall be analyzed using Method 8240A of SW-846. All constituents listed in Table 2 of this method must be analyzed for and the EQLs in that table must be achieved.

   b. Polynuclear aromatic hydrocarbons (PNAs) using Method 8310 of SW-846. All PNAs listed in Table 1 must be analyzed for and the EQLs in that table must be achieved.

7. The following procedure must be utilized in the collection of all required soil samples:

a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

   1. The procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

   2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions;

d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;

e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and

f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

8. The following conditions/modifications apply to the proposed groundwater monitoring program:

   a. The USEPA's RCRA Groundwater Monitoring: Draft Technical Guidance (November 1992) has been distributed by the USEPA to update technical information contained in other sources of guidance such as the Technical Enforcement Guidance (TEGD). This document should be used as well as the TEGD when guidance is needed for groundwater monitoring well construction, development, sampling and analysis, etc.

   b. Information obtained during aquifer testing along with boring log data obtained during well installations should be used by the facility to propose a site specific and appropriate groundwater classification in accordance with 35 Ill. Adm. Code Subpart B: Groundwater Classification. Groundwater is assumed to be Class I until proven otherwise.

c. If contamination is detected in groundwater at the facility, additional well(s) may be necessary in order to define the vertical and horizontal extent of contamination.

d. If contamination is detected, 35 Ill. Adm. Code 620.250 allows for a groundwater management zone (GMZ) for any class of groundwater. 35 Ill. Adm. Code 620.250 defines a GMZ as a three dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site.

e. All monitoring wells should be constructed and installed in accordance with the attached Monitoring Well Diagram.

f. Boring logs, well completion reports, etc. must be submitted to any other appropriate Agencies, as necessary.

9. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

10. The portion of the final RFI Phase II report documenting the results of the required soil sampling/analysis effort must contain the following information, for each SWMU investigated:

a. A discussion of (1) the reason for the sampling/analysis effort conducted at each SWMU and (2) the goals of the sampling analysis effort conducted at each SWMU;

b. A scaled drawing showing the horizontal and vertical location where all soil samples were collected at each SWMU;

c. Justification for the locations from which soil samples were collected;

d. A description of the procedures used for:

1. Sample collection;

2. Sample preservation;

3. Chain of custody; and

4. Decontamination of sampling equipment.

e. Visual classification of each soil sample collected for analysis;

f. A discussion of the results of any field screening efforts;

g. A description of the soil types encountered during the investigation, including scaled cross-sections;

h. A description of the procedures used to analyze the soil samples, including:

   1. The analytical procedure used, including the procedures, if any, used to prepare the sample for analysis;

   2. Any dilutions made to the original sample;

   3. Any interferences encountered during the analysis of each sample; and

   4. The practical quantitation limit achieved, including justification for reporting EQLs which are above those set forth in SW-846.

i. A description of all quality control/quality assurance analyses conducted, including the analysis of lab blanks, trip blanks and field blanks;

j. A description of all quality assurance/quality control efforts made overall;

k. A summary of all analytical data, including QA/QC results, in tabular form;

l. Copies of final laboratory sheets which report the results of the analyses, including final sheets reporting quality assurance/quality control data;

m. Colored photographs documenting the sampling effort; and

n. A discussion of the collected data. This discussion should identify those sample locations where contaminants were detected and the concentrations of the contaminants detected. Conclusions which can be drawn from the information compiled should also be included in this discussion.

11. The portion of the final RFI report documenting the results of the required subsurface and groundwater investigation must contain, at a minimum, the following information:

a. Borehole and well logs which identify the major rock types, unconsolidated materials and soil types and establish their horizontal and vertical extent and distribution;

b. A description of the specific methods and procedures utilized for exploratory borings/monitoring well drilling, well installation, well development and decommissioning of groundwater monitoring wells and boreholes;

c. IEPA Well Completion Reports for each well;

d. A map (scale 1"=200′ or less) depicting the locations of all exploratory borings, piezometers and monitoring wells;

e. A minimum of two representative cross-sections for each unit, one in the direction of groundwater flow and one orthogonal to groundwater flow which depict site topography, lithology, structural features, measured hydraulic conductivity values, each well and borehole used to construct the cross section and total depths of waste management units;

f. An identification and description of the zones of suspected high hydraulic conductivity, or structures likely to influence contaminant migration through the unsaturated and saturated zones;

g. A comparison of the information collected during the preliminary investigation to the more recent findings;

h. A description of the site petrology, effective porosity, hydraulic conductivity, lateral and vertical stratigraphic relationships, and groundwater flow directions and rates;

i. A description of the methods and procedures, as well as a presentation of the raw data and calculations used to determine the effective porosity, hydraulic conductivity and groundwater flow directions and rates;

j. Water level measurements and a site map (scale 1"=200′ or less) depicting the potentiometric surface or water table for each identified water bearing zone that comprises the uppermost aquifer, which identifies both the direction and rate of groundwater flow and locations of all piezometers and wells on which the surface/table is based;

k. A conceptual model in which a site-specific description of the hydrogeology of the vadose zone, the uppermost aquifer and its confining units are described and an identification of the vertical and lateral extent of the wastes managed at the facility and all information necessary to assist in the design of an adequate monitoring system; and

l. Information regarding the groundwater sampling/analysis effort as identified in Items No. 10.a, 10.d, 10.f, and 10.h through 10.n.

12. If Detrex conducts a Phase II investigation which differs from the described above, then it must provide adequate justification in the report required by Condition 2 above for the variances.

13. Reports must be prepared and submitted to the Agency which describe the activities completed each quarter of the calendar year while the Phase II investigation is being carried out. The quarterly reports shall contain at a minimum:

    a. An estimate of the percentage of the investigation completed;

    b. Summary of activities completed during the reporting period;

    c. Summaries of all actual or proposed changes to the Workplan or its implementation;

    d. Summaries of all actual or potential problems encountered during the reporting period;

    e. Proposal for correcting any problems;

    f. Projected work for the next reporting period; and

    g. Other information or data as requested in writing by the Agency's DLPC.

Should you have any questions regarding this matter, please contact William T. Sinnott, II or Terri Blake Myers at 217/524-3300.

Sincerely,

Harry A. Chappel, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

HAC:WTS/mls/sp805W/1-9
JEN

Attachments: RFI Phase II Certification
RFI Phase II Laboratory Certification

bcc: Bureau File
Maywood Region
Jim Moore
Bill Sinnott
Terri Blake Myers

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
2200 Churchill Road, Springfield, IL 62794-9276
217/524-3300

Pink
B-113-CA-2

July 18, 1996

CERTIFIED MAIL
Z 363 613 762

Detrex Corporation
Attn: Issa H. Shamiyeh
Post Office Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation
ILD074424938
Date Received: February 1, 1996
Log No. B113-CA-2

Dear Mr. Shamiyeh:

The RCRA Facility Investigation Phase II (Stage 1) Report for the above referenced facility submitted on behalf of Detrex Corporation by ESE has been reviewed by this Agency. This report also contained proposed additional RFI efforts to better define the contamination present at the facility. The information in the subject report regarding the RFI Phase II, Stage I results and the proposed Stage II activities are hereby approved subject to the following conditions and modifications.

1. This RFI Phase II Stage II Workplan shall be carried out to evaluate the extent of soil and groundwater contamination in the vicinity of the following SWMUs:

SWMU Number	Unit Name
1	Waste Handling Area
2	Fuel Spill Area
3	Tank Car Unloading Area
4	Underground Storage Tank

2. RFI Phase II activities should be completed by December 1, 1996. When Phase II is complete, the owner or operator must submit to the Agency certification both by a responsible officer of the owner or operator and by an independent registered professional engineer that the facility completed Phase II in accordance with the specifications in the approved RFI Phase II workplan. In addition, a certification statement meeting the requirements of 35 IAC 702.126 must be provided by a responsible officer of the laboratory which conducted the chemical analyses that the requirements of this letter were met during

the chemical analyses that the requirements of this letter were met during the chemical analysis of all samples. This certification must address the applicable sample collection, preservation, handling preparation and analytical requirements set forth in this letter. These certifications must be received at this Agency after completing Phase II, or by February 1, 1997. These dates may be extended if Detrex submits information to the Agency indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

The attached certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI workplan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

As part of the certification, to document the RFI Phase II activities at your facility, please submit a Phase II Report and Summary which includes, at a minimum:

a. The information identified in the attached document entitled Recommended Contents of RCRA Soil and/or Groundwater Investigation Reports.

b. Information which the workplan indicates will be in the report;

c. A chronological summary of Phase II activities and the cost involved.

d. Color photo documentation of Phase II activities.

e. A description of the qualifications of personnel performing and directing the RFI activities including contractor personnel.

f. A general discussion of the next step which should be taken in completing the corrective action activities necessary to meet the requirements of 35 IAC 724.201. This should include a discussion of any additional investigations which must be carried out and/or a general discussion of any remedial actions which should be taken in response to the contamination detected at the facility.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

3. If the Agency determines that implementation of this RFI Workplan fails to satisfy the requirements of Section III of the RCRA Part B Permit (Log No. B-113), the Agency reserves the right to require that additional work be completed to satisfy these requirements. Revisions of RFI Workplans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.

4. This letter neither approves or disapproves the Health and Safety Plan contained in the submittal. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

5. All soil samples shall be analyzed individually (i.e., no compositing). Sampling and analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846) and Attachment 7 to this Agency's closure plan instruction package. When a SW-846 (Third Edition) analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Agency. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually

contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846.

a. Samples analyzed for volatile organic compounds shall be analyzed using Method 8240A of SW-846. All constituents listed in Table 2 of this method must be analyzed for and the EQLs in that table must be achieved.

6. The following procedure must be utilized in the collection of all required soil samples:

a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

1. The procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions;

d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;

e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and

f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

7. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

8. The files of Detrex should be reviewed to determine what information is available about the former fuel tank mentioned on Page 6 of the Phase I report. This information, as well as a discussion of the RFI results in the vicinity of this former tank, should be contained in the report required by Condition 2 above.

9. A sufficient number of additional samples should be collected and analyzed to clearly determine the horizontal and vertical limits of soil contamination during the Stage II efforts..

10. Given the concerns expressed above, the Phase II investigation to be completed by Detrex should be sufficient to determine the horizontal and vertical extent of soil contains contaminants in excess of the values set forth in the following table:

Constituent PNAs	Level of Concern (mg/kg)
Halogenated Volatile Organic Compounds (VOCs)	
1,1-Dichloroethane	55
1,2-Dichloroethane	.05
Halogenated Volatile Organic Compounds (VOCs)	
1,1-Dichloroethene	15
cis-1,2-Dichloroethene	1.0
trans-1,2-Dichloroethene	1.5
Methylene Chloride	0.05
Tetrachloroethene	0.20
1,1,1-Trichloroethane	4.5
Trichloroethene	0.10

As noted in Item 8 of the Agency's June 15, 1994 letter, these values are not the final cleanup objectives. Final soil cleanup objectives will be developed once the RFI is complete.

11. Final soil and groundwater cleanup objectives for this project may be developed using the procedures in the attached IEPA guidance document entitled Tiered Approach to Cleanup Objectives. Establishment of these final objectives will be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

12. Information obtained during aquifer testing along with boring log data obtained during well installations was used by the facility to propose Class II: General Resource Groundwater classification for the shallow groundwater unit present beneath the facility. It appears that

Class II is the appropriate groundwater classification for the shallow unit and at this time the Agency can concur with the facility's proposal.

13. During the Phase II RFI (Stage 2) the facility must definitively determine groundwater flow direction at the facility. Once groundwater flow direction is determined at the facility, additional well(s) must be installed in order to define the vertical and horizontal extent of groundwater contamination. Approved techniques and procedures for installation and reporting of installation of groundwater monitoring wells must be followed.

14. Groundwater monitoring during the Phase II RFI (Stage 2) must continue on a quarterly basis with results submitted with the quarterly progress reports. Samples collected for analyses must be analyzed for both VOCs and PAHs. Detection of any constituent above a method detection limit is considered an impact to groundwater and must be addressed as part of the Phase III RFI.

15. Investigation of the former sewer line serving as a conduit for releases of hazardous constituents to groundwater at the facility must take place as part of Stage 2 of the RFI Phase II effort..

16. The procedures used in the Stage II efforts should be carried out in accordance with procedures previously approved by the Agency for this project in letters dated September 10, 1993 and January 27, 1995.

Should you have any questions regarding this matter, please contact William t. Sinnott, II or Terri Blake Myers at 217/524-3300.

Sincerely,

Terry H. Kuh
for

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:WTS\mls\961952S.WPD
JKM

Attachments: Recommended Contents of RCRA Soil and/or Groundwater Investigation Reports
Tiered Approach to Cleanup Objectives
RFI Certification Statement
Laboratory Certification Statement

cc: ESE

bcc: Bureau File
Maywood Region
Jim Moore
Bill Sinnott

Certification Statement

Phase II of the RCRA Facility Investigation
Detrex
Melrose Park, Illinois

Log No. B113

Upon completion of Phase II of the RFI, this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and by the registered professional engineer overseeing all work associated with the investigation. Submit one copy of the certification with original signatures and three additional copies.

RFI Phase II activities at the facility described in the RFI Phase II Workplan have been completed in accordance with the specifications in the approved RFI Workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number		Facility Name
Signature of Owner/Operator	Date	Name and Title
Signature of Registered P.E.	Date	Name of Registered P.E. and Illinois Registration Number
Mailing Address of P.E.:		Registered P.E.'s Seal:

WTS\mls\961952S.WPD

Laboratory Certification Statement
Phase II of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Log No. B-113

Upon completion of Phase I of the RFI, this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and (2) a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of Phase I of the RFI. The original of this statement shall accompany the original certification statement for the overall Phase I activities and the RFI Phase I Report.

The sample collection, handling, preservation, preparation and analysis conducted as part of Phase I of the RFI at the facility described in this document has been conducted in accordance with the specifications in the approved workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USEPA ID Number	Facility Name
Signature of Owner/Operator Date	Name and Title of Owner/Operator Representative
Name of Laboratory	Signature of Laboratory Responsible Officer Date
Mailing Address of Laboratory:	
	Name and Title of Laboratory Responsible Officer

WTS\mls\961952S.WPD

Pink
B-113-CA-2

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

January 22, 1997

CERTIFIED MAIL
Z 363 621 135

Detrex Corporation
Attn: Issa H. Shamiyeh
Post Office Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation
ILD 074424938
Date Received: January 9, 1997
Log No. B113-CA-2

Dear Mr. Shamiyeh:

This is in response to the Scope of Work for Stage II of the Phase II RCRA Facility Investigation at the above-referenced facility which was submitted on your behalf January 6, 1997 by Mary E. Jank and Gary W. Cobb of Environmental Science & Engineering, Inc. Illinois EPA previously approved Detrex's Phase II (Stage I) Report on July 18, 1996 and also approved general RFI Phase II (Stage II) at that time.

Detrex should carry out the proposed RFI Phase II, Stage II activities in accordance with the Illinois EPA's July 18, 1996 letter (Log No. B-113-CA-2). Special attention should be paid to Conditions 9, 13, 14, 15 and 16 of this letter. A report documenting the results of this additional investigation should be developed in accordance with the attached guidance document entitled Recommended Contents of RCRA Soil and Groundwater Investigation Report and submitted to Illinois EPA by April 15, 1997. This report must be developed and certified in accordance with Condition 2 of Illinois EPA's July 18, 1996 letter.

Should you have any questions regarding groundwater related aspects of this project, please contact Terri Myers at 217/524-3300; questions regarding other aspects of this project should be directed to William T. Sinnott, II at 217/524-3310.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

bcc: Bureau File
Maywood Region
Jim Moore
Terri Blake Myers
Bill Sinnott

ECB:JKM\mls\973517.WPD

cc: ESE
JKM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

217/524-3300

November 19, 2003

CERTIFIED MAIL
7002 3150 0000 1219 9459

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

RECEIVED
NOV 24 2003
DETREX CORPORATION

Re: 0311860003 -- Cook County
Detrex Corporation/Melrose Park Facility
ILD074424938
Log Nos. B-113-CA-3; B-113-CA-4
RCRA Permit

Dear Mr. Craig:

This is in response to the following documents: (1) a document entitled "Phase II Stage 2 Investigation Summary and Tier 1 TACO Screening Evaluation for the Detrex's Corporation's RCRA Facility in Melrose Park, Illinois"; and (2) a document entitled "Tier 2 TACO Analysis for Detrex RCRA Facility, Melrose Park, Illinois, Addendum to Dames & Moore's June 29, 1997 Site Investigation Report". These submittals were prepared and submitted on your behalf by Ms. Betty J. Locey, Ph.D., of Dames & Moore regarding RCRA corrective action activities being carried out at the above-referenced facility.

Overall, the facility is required to investigate and remediate, as necessary, four solid waste management units (SWMUs) in accordance with the requirements set forth in Section III of the facility's RCRA permit (Log No. B-113 and associated modifications). A drawing showing the location of the four SWMUs within the facility is attached. Illinois EPA approved a Phase I RCRA Facility Investigation (RFI) Work Plan on June 17, 1993. A RFI Phase I Report was approved by Illinois EPA on June 15, 1994. A RFI Phase II Work Plan was approved by Illinois EPA on January 27, 1995. A RFI Phase II (Stage 1) Report and proposed Stage II activities were approved by Illinois EPA on July 18, 1996.

The first submittal mentioned above contained results of the Stage II site assessment and a Tiered Approach to Corrective Action Objective (TACO) Tier 1 evaluation for soil and groundwater. The second submittal mentioned above contained: (1) a TACO Tier 2 evaluation for soil; (2) a Tier 3 evaluation; (3) a basis for eliminating the groundwater pathway; and (4) a conclusion that a combination of institutional and engineering control be used to limit exposure and risk at the site.

The subject submittals were reviewed as modifications to the RCRA corrective action program for the subject facility and cannot be approved at this time due to the following reasons:

1. Based upon a review of the January 1998 submittal, it appears that the facility intends to eliminate the soil ingestion, inhalation and migration to groundwater exposure routes. However, it was not identified what regulations were used to eliminate these exposure routes. The facility must clearly identify the regulations in 35 Ill. Adm. Code 742 that were used to eliminate these exposure routes. The facility must also identify how the requirements of those regulations were met.

2. Based upon a review of the sampling results, it appears that soil contamination exceeds both the soil attenuation capacity and the soil saturation capacity at some sampling points. In accordance with 35 Ill. Adm. Code 742.305(a) and (b), an exposure route cannot be excluded if concentration of organic contaminants of concern exceeds the soil attenuation capacity and soil saturation limit, respectively. The facility must identify how the exceedances above the soil attenuation capacity and soil saturation limit will be addressed. It should be noted that a comparison of the soil attenuation capacity or soil saturation limit be made to the contaminant concentration at a discrete sampling point not the average values.

3. It appears that the facility intends to eliminate ingestion and inhalation exposure routes using engineered barriers, such as existing building, and landscaping (grass covered areas). In order to use an engineered barrier to eliminate an exposure route, the facility must propose engineered barriers that meet the requirements of 35 Ill. Adm. Code 742, Subpart K, for Illinois EPA's review and approval. Areas with landscaping, grass covered or snow covered areas are not considered proper engineered barriers under 35 Ill. Adm. Code 742, Subpart K.

4. Use of engineered barriers and elimination of exposure routes requires that an institutional control be established to place certain restrictions at the site. An environmental land use control (ELUC) is an acceptable institutional control under 35 Ill. Adm. Code 742 (TACO) and must be submitted to the Illinois EPA for review and approval. A deed restriction as proposed in Section 5.0 cannot be used as an institutional control under TACO. A model ELUC can be found at Illinois EPA's website (www.epa.state.il.us).

5. Section 4.4 of the January 1998 submittal does not conclusively demonstrate that off-site impacts cannot be associated to Detrex facility. Trichloroethene that was detected in off-site samples at high concentrations is the main contaminant at the facility and was also managed at the facility. Section 4.4 also indicates that commercial/industrial criteria developed for on-site receptors is appropriate for the adjacent properties. It should be noted that if Tier 2 remediation objectives are used to evaluate off-site contamination that

are based on land use other than residential, an institutional control will be necessary to place land use restriction at off-site property. This may require concurrence of off-site property owners to allow land use restriction be placed on their property.

6. Illinois EPA has the following comments regarding groundwater information contained in the subject submittals:

TIER II GW EVALUATION

a. In accordance with 35 Ill. Adm. Code 742.800, if the contaminant concentrations in groundwater exceed the applicable Tier 1 remediation objectives, a facility has the option to propose and obtain approval of Tier 2 groundwater remediation objectives in accordance with 35 Ill. Adm. Code 742.805. In order to develop Tier 2 groundwater remediation objectives and request approval from the Illinois EPA, the facility must provide information associated with 35 Ill. Adm. Code 742.805(a) through (c).

b. At this time, the Illinois EPA cannot concur that it is appropriate to eliminate the groundwater ingestion exposure route. The facility has not demonstrated, in accordance with 35 Ill. Adm. Code 742.320, that the elimination is appropriate for the site. Any demonstration to exclude the groundwater ingestion exposure route must meet the requirements found in 35 Ill. Adm. Code 742.320 and be submitted to the Illinois EPA for review and approval.

c. All information used to develop groundwater remediation objectives in accordance with 35 Ill. Adm. Code Part 742 must be provided to the Illinois EPA for review and approval. Specifically, in regards to groundwater, any proposal for Tier 2 groundwater remediation objectives must contain detailed information in support of any calculations made. This includes providing:

   i. The actual calculations made;

   ii. Identification of all input values for the calculations; and

   iii. Documentation supporting the input values used in conducting the calculation. All physical parameters used in making the calculations must be site-specific.

d. The City of Melrose Park Ordinance #321 has been approved for use as an institutional control and the City of Melrose Park and the Illinois EPA have entered into a Memorandum of Understanding. In order to utilize the ordinance as an institutional control to restrict the use of groundwater the facility must provide the information required by 35 Ill. Adm. Code 742, Subpart J and Attachment 3 to this

letter entitled Use of an Ordinance as an Institutional Control for Groundwater RCRA Closure Projects.

e. Currently the Class II Groundwater Quality Standards as they appear in 35 Ill. Adm. Code 620.420 are the facility's groundwater cleanup objectives for the shallow groundwater beneath the site. These cleanup objectives shall apply until alternative standards are approved pursuant to 35 Ill. Adm. Code 620.450(a)(4)(B) using the procedures found in 35 Ill. Adm. Code 742. Approval of alternative standards will require maintenance of a Groundwater Management Zone (GMZ) under 35 Ill. Adm. Code 620.450 until the applicable standards are achieved or an adjusted standard is granted by the Illinois Pollution Control Board (PCB).

f. Detrex must locate groundwater monitoring well MW-4. Groundwater monitoring well MW-4, along with other existing wells at the facility (MW-1, MW-2, MW-3, MW-5, and MW-6), must be maintained in accordance with 77 Ill. Adm. Code 920 regulations.

7. Illinois EPA's Toxicity Assessment Unit (TAU) has the following comments regarding Tier 2/Tier 3 analysis contained in the subject submittals:

a. Depth Weighted Average. TACO is fairly specific in its guidance on compositing samples and averaging sample results. When averaging sample results, discrete samples should be taken every two feet beginning at 0.5 feet and continuing through the zone of contamination. For this site, it appears that a two foot sampling interval was composited. Another two foot composite was taken approximately two feet deeper. These composites were then summed and divided by the length of the boring. While this method is a little unconventional, it does not seem to change the outcome to a significant degree.

b. Mixtures. Mixtures of similar-acting chemicals should be addressed following the procedures in 742.720, 742.805 and 742.915 for all chemicals of concern, including those excluded from further consideration in Tier 1.

c. Toxicity Values. Table 6 lists the toxicity values used in the equations. Inhalation Reference Doses are listed, when available, for chemicals. However, the SSL equations use Reference Concentrations, not doses. The values used in the SSL equations should be specified.

d. Construction Workers. Some of the remediation objectives for the construction workers exceeded. Detrex is requesting that these be handled with a worker caution statement attached to the deed. This is a decision that should be made by CORE.

e. Barriers to Exposures. This assessment relies on the building and landscaping to limit or eliminate contact with soil on-site. In accordance with 742.1000, institutional controls must be placed on the property when engineered barriers are used.

f. Land Use. This assessment assumes that the land use will be industrial/commercial. Deed restrictions need to be placed on the property to ensure this use.

g. Soil Attenuation Capacity. Samples collected from the same boring cannot be averaged to determine compliance with soil attenuation capacity. If the soil attenuation capacity is exceeded, this is an indication that there is free product and the TACO equations were not designed to model two phases.

h. Table 22. This table lists the chemicals which exceeded the final Tier 2 cleanup objectives. A comparison with Table 18 indicates that benzo(a)pyrene and dibenzo(a,h)anthracene also exceeded Tier 2 objectives in some soil borings. These two chemicals should be added to the list of chemicals in the soil column which exceeded objectives.

8. A revised document must be submitted to Illinois EPA for review and approval addressing the deficiencies noted above. The main goal of this revised document is the establishment of soil and groundwater remediation objectives which must be achieved to meet the corrective action requirements of the subject facility's RCRA permit. This submittal must also address certain deficiencies noted above regarding the characterization of the contamination present at this facility; it must be noted that 35 Ill. Adm. Code 742.120 requires that the contamination at a facility be properly characterized before remediation objectives can be developed using the procedures set forth in 35 Ill. Adm. Code 742.

In general, this revised document should contain the following information and be developed in accordance with the subject facility's RCRA permit and 35 Ill. Adm. Code 620, 724, and 742:

a. Background information about the facility and corrective action efforts completed to date;

b. An overview of the geology and hydrogeology of the facility;

c. A summary of the results of the soil and groundwater investigations conducted to date;

d. Proposed soil and groundwater remediation objectives for the project, including all data and information needed to develop these objectives;

e. A discussion of the procedures which will be followed to address the deficiencies noted above regarding data gaps in the characterization of the soil and groundwater contamination at the facility; and

f. A general discussion of the procedures which will be followed to achieve the proposed soil and groundwater remediation objectives.

A completed RCRA corrective action certification (copy enclosed) must accompany the revised document mentioned above as well as all other submittals made to Illinois EPA regarding RCRA corrective action activities.

Overall, RCRA corrective action efforts at this facility must meet the requirements of the facility's RCRA permit and 35 Ill. Adm. Code 620, 724 and 742.

This letter shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days of the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Jim Moore
217-524-3295
Corrective Action

Jim.Moore@EPA.STATE.IL.US

Should you have any questions regarding groundwater related matters associated with this project, please contact Terri Blake Myers, L.P.G., at 217/524-3300. Questions regarding Tier 3 analysis should be directed to Tracey Hurley at 217/785-0830; questions regarding other aspects of this project should be directed to Munib Ahmad, P.E., at 217/524-3263.

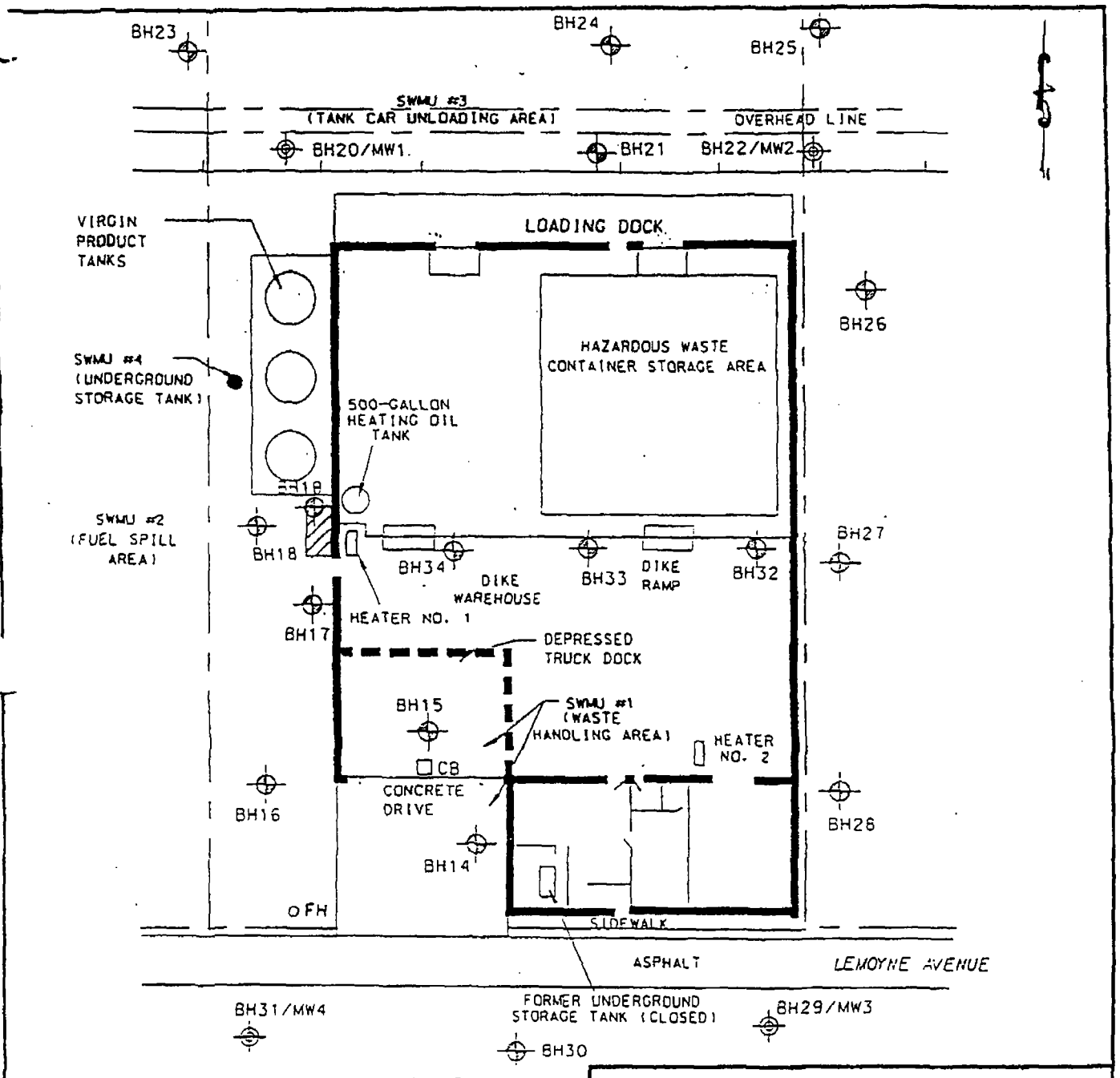
Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

JLM:MA:bjh\03582s.doc
JLM TBM

Attachments: Site Layout Map
RCRA Corrective Action Certification From
Use of an Ordinance as an Institutional Control for Groundwater for RCRA Closure Projects

cc: Betty J. Locey, Dames & Moore



SOURCE: ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

SCALE

0 15' 30'

10' 0

LEGEND

PHASE II BORING LOCATION

PHASE II BORING COMPLETED AS MONITORING WELL

PROPERTY

DETREX CORPORATION

FIGURE 2/SITE PLAN
DETREX CORPORATION
MELROSE PARK, ILLINOIS

JOB NO. 32904-003-158 DAMES & MOORE

742.1015

Use of an Ordinance as an Institutional Control for Groundwater for RCRA Closure Projects

35 Ill. Adm. Code 742.1015 sets forth the requirements for using ordinances as institutional controls to restrict groundwater usage in an area. Such an ordinance must effectively prohibit the installation and use of potable water supply wells. 35 Ill. Adm. Code 742.1015(b) and (c) prescribes specific requirements for the information that must be submitted to the Illinois EPA along with a request for approval of an ordinance. The remainder of 35 Ill. Adm. Code 742.1015 includes notification, tracking, and recording requirements that also must be met. All provisions of 35 Ill. Adm. Code 742.1015 must be satisfied to perfect the use of the ordinance as an environmental institutional control. The purpose of this document is to identify the requirements which must be met when using an ordinance as an institutional control to restrict groundwater usage at a RCRA closure site.

The informational requirements under 35 Ill. Adm. Code 742.1015(b) (Items 1.a through f below) must be met and submitted to Illinois EPA for the approval of a local ordinance as an institutional control. The document prepared to address these informational requirements will be incorporated into the Illinois EPA's eventual no further remediation determination to be recorded as required by 35 Ill. Adm. Code 742.1015(f). Additionally, upon Illinois EPA approval of this document, the document shall be submitted to all owners of each affected property and to the unit of local government as required in 35 Ill. Adm. Code 742.1015(b)(6) (Item 1.f below) and 742.1015(e), respectively. A more detailed discussion of these requirements follows:

1. Pursuant to 35 Ill. Adm. Code 742.1015(b), a request submitted to Illinois EPA for approval of a local ordinance as an institutional control shall provide the following:

   A copy of the ordinance restricting groundwater use certified by an official of the unit of local government in which the site is located that it is the latest, most current copy of the ordinance. The ordinance must demonstrate that potable use of groundwater from potable water supply wells is prohibited;

   A scaled map(s) delineating the areal extent of groundwater contamination (measured or modeled) above the applicable Tier 1 groundwater remediation objectives, including:

   1. map scale (i.e., 1 inch is equal to no more than 200 feet) and date,
   2. orientation of the map (north arrow),
   3. legal boundaries of the facility,
   4. buildings and other permanent structures,

3. Information showing the concentration of contaminants of concern in which the applicable Tier 1 groundwater remediation objectives are exceeded. This information would best be presented as a table identifying the contaminant(s) of concern and their respective concentration(s);

4. A scaled map delineating the boundaries of all properties under which groundwater is located which exceeds the applicable Tier 1 groundwater remediation objectives;

5. Information identifying the current owner(s) of each property identified in 1.d. This information would best be presented as a table which identifies the property owner's name(s) and address(es); and

? 6. A copy of the proposed submission of the information to the current owners identified in 1.d of the information required in 1.a through 1.e and a copy of the written notification document required in 2.

As required by 35 Ill. Adm. Code 742.1015(b)(6) (Item 1.f above), the written notification in 742.1015(c) (Item 2 below) shall be prepared and submitted for Illinois EPA review. This document shall, upon Illinois EPA approval, be submitted, as required by 35 Ill. Adm. Code 742.1015(c) (Item 2 below) to the property owners identified in 35 Ill. Adm. Code 742.1015(b)(5) (Item 1.e above) and the unit of local government. This document shall also be incorporated into the Illinois EPA's no further remediation determination to be recorded as required by 35 Ill. Adm. Code 742.1015(f).

2. Each of the property owners identified in 1.d and the unit of local government must receive written notification from the party desiring to use the institutional control that groundwater remediation objectives have been approved by the Illinois EPA. Written proof of this notification shall be submitted to the Illinois EPA within 45 days from the date of the instrument memorializing the Illinois EPA's no further remediation determination. The notification shall include:

   1. The name and address of the unit of local government;

   2. The citation to the ordinance;

   3. A description of the property being sent notice by adequate legal description or by reference to a plat showing the boundaries;

   4. A statement that the ordinance restricting groundwater use has been used by the Illinois EPA in reviewing a request for a groundwater remediation objective;

5. A statement as to the nature of the release and response action with the site name, address, and Illinois EPA site number or Illinois inventory identification number; and

6. A statement that more information may be obtained regarding the ordinance through a written request under the Freedom of Information Act (5 ILCS 140) to:

   Illinois Environmental Protection Illinois EPA
   Attention: Freedom of Information Act Officer
   Bureau of Land -- #24
   1021 North Grand Avenue East
   P.O. Box 19276
   Springfield, Illinois 62794-9276

TBM\mls\993311S.WPD

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: _____ County: _____

Street Address: _____ Site No. (IEPA): _____

City: _____ Site No. (USEPA): _____

2.0 OWNER INFORMATION

Name: _____

Mailing Address: _____

_____

_____

Contact Name: _____

Contact Title: _____

Phone No.: _____

3.0 OPERATOR INFORMATION

_____

_____

_____

_____

_____

_____

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

__ RFI Phase I Workplan/Report
__ RFI Phase II Workplan/Report
__ CMP Report; Phase _____
__ Other (describe):
_____
Date of Submittal _____

IEPA Permit Log No. _____
Date of Last IEPA Letter on Project _____
Log No. of Last IEPA Letter on Project _____
Does this submittal include groundwater information: __ Yes __ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

_____

_____

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

_____

_____

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Use of an Ordinance as an Institutional Control for Groundwater for RCRA Closure Projects

35 Ill. Adm. Code 742.1015 sets forth the requirements for using ordinances as institutional controls to restrict groundwater usage in an area. Such an ordinance must effectively prohibit the installation and use of potable water supply wells. 35 Ill. Adm. Code 742.1015(b) and (c) prescribes specific requirements for the information that must be submitted to the Illinois EPA along with a request for approval of an ordinance. The remainder of 35 Ill. Adm. Code 742.1015 includes notification, tracking, and recording requirements that also must be met. All provisions of 35 Ill. Adm. Code 742.1015 must be satisfied to perfect the use of the ordinance as an environmental institutional control. The purpose of this document is to identify the requirements which must be met when using an ordinance as an institutional control to restrict groundwater usage at a RCRA closure site.

The informational requirements under 35 Ill. Adm. Code 742.1015(b) (Items 1.a through f below) must be met and submitted to Illinois EPA for the approval of a local ordinance as an institutional control. The document prepared to address these informational requirements will be incorporated into the Illinois EPA's eventual no further remediation determination to be recorded as required by 35 Ill. Adm. Code 742.1015(f). Additionally, upon Illinois EPA approval of this document, the document shall be submitted to all owners of each affected property and to the unit of local government as required in 35 Ill. Adm. Code 742.1015(b)(6) (Item 1.f below) and 742.1015(e), respectively. A more detailed discussion of these requirements follows:

1. Pursuant to 35 Ill. Adm. Code 742.1015(b), a request submitted to Illinois EPA for approval of a local ordinance as an institutional control shall provide the following:

    1. A copy of the ordinance restricting groundwater use certified by an official of the unit of local government in which the site is located that it is the latest, most current copy of the ordinance. The ordinance must demonstrate that potable use of groundwater from potable water supply wells is prohibited;

    2. A scaled map(s) delineating the areal extent of groundwater contamination (measured or modeled) above the applicable Tier 1 groundwater remediation objectives, including:

        1. map scale (i.e., 1 inch is equal to no more than 200 feet) and date,

        2. orientation of the map (north arrow),

        3. legal boundaries of the facility,

        4. buildings and other permanent structures,

To: David Craig
Fax No. 248-799-7192

From: Jim Moore
217-524-3298

3. Information showing the concentration of contaminants of concern in which the applicable Tier 1 groundwater remediation objectives are exceeded. This information would best be presented as a table identifying the contaminant(s) of concern and their respective concentration(s);

4. A scaled map delineating the boundaries of all properties under which groundwater is located which exceeds the applicable Tier 1 groundwater remediation objectives;

5. Information identifying the current owner(s) of each property identified in 1.d. This information would best be presented as a table which identifies the property owner's name(s) and address(es); and

6. A copy of the proposed submission of the information to the current owners identified in 1.d of the information required in 1.a through 1.e and a copy of the written notification document required in 2.

As required by 35 Ill. Adm. Code 742.1015(b)(6) (Item 1.f above), the written notification in 742.1015(c) (Item 2 below) shall be prepared and submitted for Illinois EPA review. This document shall, upon Illinois EPA approval, be submitted, as required by 35 Ill. Adm. Code 742.1015(c) (Item 2 below) to the property owners identified in 35 Ill. Adm. Code 742.1015(b)(5) (Item 1.e above) and the unit of local government. This document shall also be incorporated into the Illinois EPA's no further remediation determination to be recorded as required by 35 Ill. Adm. Code 742.1015(f).

2. Each of the property owners identified in 1.d and the unit of local government must receive written notification from the party desiring to use the institutional control that groundwater remediation objectives have been approved by the Illinois EPA. Written proof of this notification shall be submitted to the Illinois EPA within 45 days from the date of the instrument memorializing the Illinois EPA's no further remediation determination. The notification shall include:

   1. The name and address of the unit of local government;

   2. The citation to the ordinance;

   3. A description of the property being sent notice by adequate legal description or by reference to a plat showing the boundaries;

   4. A statement that the ordinance restricting groundwater use has been used by the Illinois EPA in reviewing a request for a groundwater remediation objective;

5. A statement as to the nature of the release and response action with the site name, address, and Illinois EPA site number or Illinois inventory identification number; and

6. A statement that more information may be obtained regarding the ordinance through a written request under the Freedom of Information Act (5 ILCS 140) to:

   Illinois Environmental Protection Illinois EPA
   Attention: Freedom of Information Act Officer
   Bureau of Land -- #24
   1021 North Grand Avenue East
   P.O. Box 19276
   Springfield, Illinois 62794-9276

TBM\mls\993311S.WPD

ILLINOIS POLLUTION CONTROL BOARD
January 8, 2004

DETREX CORPORATION,	)	
	)	
Petitioner,	)	
	)	PCB 04-104
v.	)	(UST Appeal)
	)	(90-Day Extension)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

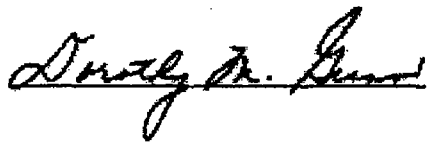
ORDER OF THE BOARD (by J.P. Novak):

On December 26, 2003, the parties timely filed a joint notice to extend the 35-day period within which Detrex Corporation may appeal a November 19, 2003 determination of the Illinois Environmental Protection Agency (Agency). *See* 415 ILCS 5/40(a)(1) (2002); 35 Ill. Adm. Code 105.402, 105.406. Because the postmark date of the joint request is within the time for filing, the joint request was timely filed. 35 Ill. Adm. Code 101.300(b)(2), 105.404. The Agency rejected modifications to petitioner's RCRA corrective action plan for Detrex Corporation's leaking underground petroleum storage tank facility located at Melrose Park, Cook County. The Board extends the appeal period until March 23, 2004, which is the 125th day after the Agency determination. *See* 415 ILCS 5/40(a)(1) (2002); 35 Ill. Adm. Code 105.406. If Detrex Corporation fails to file an appeal on or before the March 23, 2004 date, the Board will dismiss this case and close the docket.

In so doing, the Board notes that the parties had requested an extension until April 27, 2004, which is the 160th day after November 19, 2003. In extending the appeal period through March 24, 2004, the Board has granted the maximum extension allowed under the Environmental Protection Act. *See* 415 ILCS 5/40(a)(1) (2002).

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on January 8, 2004, by a vote of 5-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

Subject: RE: Tier II Submission
Date: Thu, 08 Jan 2004 16:57:06 -0600
From: Tier2 <Tier2@iema.state.il.us>
To: "'dcraig@detrex-hq.com'" <dcraig@detrex-hq.com>

Tier 2 Submitter:

Our office has received your electronic 2003 Tier2Submit Report. Thank you for using the electronic submission.

Ms. Carlita D. Crockett
IEMA - Division of D.A.P.
1035 Outer Park Drive
Springfield, IL 62704
Desk Phone: (217) 785-9945
Fax Number: (217) 557-2145
Hours: 7:30 a.m.-5:00 p.m.

-----Original Message-----
From: David Craig [mailto:DCraig@Detrex-HQ.com]
Sent: Thursday, January 08, 2004 1:28 PM
To: tier2@iema.state.il.us
Subject: Tier II Submission

Attached is the electronic submission of the Tier II form for our facility located in Melrose Park. Copies will be sent to other agencies as required. Please let me know if you require any additional information in order to consider the submission complete.

Thank you in advance for your help and consideration.

David Craig

BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

DETREX CORPORATION,	)	
Petitioner,	)	
v.	)	PCB No. 04-
ILLINOIS ENVIRONMENTAL	)	(LUST Appeal – Ninety Day Extension)
PROTECTION AGENCY,	)	
Respondent.	)	

NOTICE

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street
Suite 11-500
Chicago, IL 60601

David Craig
Manager of Environmental and Safety Compliance
P.O. Box 5111
Southfield, MI 48086-5111

PLEASE TAKE NOTICE that I have today filed with the office of the Clerk of the Pollution Control Board a REQUEST FOR NINETY DAY EXTENSION OF APPEAL PERIOD, copies of which are herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,
Respondent

John J. Kim
Assistant Counsel
Special Assistant Attorney General
Division of Legal Counsel
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
217/782-9143 (TDD)
Dated: December 23, 2003

RECEIVED
DEC 2 . 2003
DETREX CORPORATION

BEFORE THE POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

DETREX CORPORATION,	)	
Petitioner,	)	
v.	)	PCB No. 04-
ILLINOIS ENVIRONMENTAL	)	(LUST Appeal – Ninety Day Extension)
PROTECTION AGENCY,	)	
Respondent.	)	

REQUEST FOR NINETY DAY EXTENSION
OF APPEAL PERIOD

NOW COMES the Respondent, the Illinois Environmental Protection Agency ("Illinois EPA"), by one of its attorneys, John J. Kim, Assistant Counsel and Special Assistant Attorney General, and, pursuant to Section 40(a)(1) of the Illinois Environmental Protection Act (415 ILCS 5/40(a)(1)) and 35 Ill. Adm. Code 105.208, hereby requests that the Illinois Pollution Control Board ("Board") grant an extension of the thirty-five (35) day period for petitioning for a hearing to April 27, 2004, or any other date not more than a total of one hundred twenty-five (125) days from the date of the Illinois EPA's final decision. In support thereof, the Illinois EPA respectfully states as follows:

1. On November 19, 2003, the Illinois EPA issued a final decision to the Petitioner. (Exhibit A)

2. On December 8, 2003, the Petitioner made a written request to the Illinois EPA for an extension of time by which to file a petition for review, asking the Illinois EPA join in requesting that the Board extend the thirty-five day period for filing a petition to ninety days. The Petitioner did not represent when the final decision was received. (Exhibit B)

3. The additional time requested by the parties may eliminate the need for a hearing in this matter or, in the alternative, allow the parties to identify issues and limit the scope of any hearing that may be necessary to resolve this matter.

WHEREFORE, for the reasons stated above, the parties request that the Board, in the interest of administrative and judicial economy, grant this request for a ninety-day extension of the thirty-five day period for petitioning for a hearing.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,
Respondent

John J. Kim
Assistant Counsel
Special Assistant Attorney General
Division of Legal Counsel
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
217/782-9143 (TDD)
Dated: December 23, 2003

This filing submitted on recycled paper.

Detrex
CORPORATION

P.O. BOX 5111 • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 358-5803

December 8, 2003

Ms. Joyce Munie, P.E., Manager
ILEPA, Permit Section
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield IL 62794-9276
VIA: Certified Mail

RE: 0311860003 – Cooke County
Detrex Corporation / Melrose Park Facility
ILD 074 424 938
Log #s: B-113-CA-3; B-113-CA-4
RCRA Permit

Dear Ms. Munie:

Detrex Corporation is in receipt of your letter dated November 19, 2003 regarding the previous submissions to the FRI (Phase II Stage 2, TACO Tier I, II, & III) performed at our site in Melrose Park. We have reviewed the ILEPA's final decisions and would like to petition for a hearing with the Illinois Pollution Control Board to discuss the various comments noted in your letter. However, in order to properly prepare for that hearing we are requesting that the original 35-day period be extended to 90-days due to the longevity since these documents were originally submitted and the fact that we are now approaching years end.

I have discussed obtaining the extension with Mr. Jim Moore, Mr. Ahmad's supervisor. Under his direction this extension request is being submitted to your attention with an electronic copy sent directly to him.

Thank you in advance for your help and consideration in providing the necessary extension to the hearing before the Illinois Pollution Control Board. If you need any additional information in order to complete the request, please feel free to contact me at 248-358-5800, ext. 131.

Sincerely,

David Craig
Manager of Environmental and Safety Compliance

RECEIVED
DEC 11 2003
IEPA - BOL
PERMIT SECTION

CC: File
S. Miles – DTRX
B. Locey – Arcadis
J. Moore – ILEPA (jim.moore@epa.sate.il.us)

S-Z/TSDF/FAC/IL/PERMIT/2003/120

B

CERTIFICATE OF SERVICE

I, the undersigned attorney at law, hereby certify that on December 23, 2003, I served true and correct copies of a REQUEST FOR NINETY DAY EXTENSION OF APPEAL PERIOD, by placing true and correct copies in properly sealed and addressed envelopes and by depositing said sealed envelopes in a U.S. mail drop box located within Springfield, Illinois, with sufficient First Class Mail postage affixed thereto, upon the following named persons:

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street
Suite 11-500
Chicago, IL 60601

David Craig
Manager of Environmental and Safety Compliance
P.O. Box 5111
Southfield, MI 48086-5111

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,
Respondent

John J. Kim
Assistant Counsel
Special Assistant Attorney General
Division of Legal Counsel
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
217/782-9143 (TDD)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

Certified Mail
7002 3150 0000 1222 6667

December 27, 2005

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

RECEIVED
JAN 9 2006
DETREX CORPORATION

Re: 0311860003 -- Cook County
Detrex Corp Solvent & Env Svc
ILD074424938
Received: September 28, 2004
Log No.: B-113-CA-5
RCRA - Permit

Dear Mr. Craig:

This letter is in response to a report entitled Groundwater Sampling Report, dated September 24, 2004, submitted by Mr. Stan Miles of Detrex Corporation (Detrex). This report was submitted to Illinois EPA to address the Corrective Action requirements of the RCRA Part B Permit for the above-referenced facility (log No. B-113). The subject report was developed to meet the requirements of the Illinois EPA's November 19, 2003 letter (Log No. B-113-CA-3 and 4) and was a follow-up to a March 16, 2004 meeting between Detrex and Illinois EPA.

Illinois EPA has reviewed the subject submittal and has the following comments:

1. The report indicates that it is the facility's intention to address the issues with soil attenuation capacities and soil saturation limits in a future submittal. Such a document must be submitted to Illinois EPA within 90 days of the date of this letter.

2. If the facility intends to develop site specific soil saturation limits for the contaminants of concern (COCs) for the site, the facility should define the site specific parameters, such as, but not limited to, dry soil bulk density, organic carbon density, and soil particle density. In order to define necessary site specific parameters, the facility may need to conduct further field investigation for soil. Therefore, the submittal required in Item 1 above must contain: (1) detailed summary of the existing data; (2) evaluation of the current conditions with the existing data at the site; and if necessary, (3) a plan to conduct field investigation to obtain necessary site specific data at the site.

3. If it is determined that applicable soil saturation limits and/or attenuation limits are exceeded, then in accordance with 35 Ill. Adm. Code 742 Subpart C, no exposure route can be eliminated for the specific area(s) with exceedance.

4. The soil and groundwater contamination has migrated to off-site properties. The facility must develop a workplan to address the soil/groundwater contamination at off-site properties. As indicated in Condition 5 of Illinois EPA's November 19, 2003 letter, if the facility intends to develop Tier 2 remedial objectives for the off-site properties, the facility must also address the issues of placing Environmental Land Use Controls for those properties, which may require concurrence of those off-site property owners. If the Tier 2 remedial objectives cannot be developed for the off-site properties, then the facility must develop other plan to remediate the off-site contamination.

5. Condition 12 of the July 18, 1996 Illinois EPA letter (Log No. B-113-CA-2) approved a Class II Groundwater determination for the facility.

6. The Illinois EPA has determined that, at this time, it cannot approve the facility's request to eliminate the groundwater ingestion exposure and soil component of groundwater ingestion pathway via the 35 Ill. Adm. Code Part 742, Subpart C due to the following:

   a. Groundwater data provided in the subject submittal indicates that the facility has yet to adequately determine the extent of contamination as required by 35 Ill. Adm. Code 742.120 and 742.300(b).

   b. The requirements of 35 Ill. Adm. Code 742.305(a) and (b) have not been met at the facility.

   c. Due to Items 6.a and 6.b above, the requirements of 35 Ill. Adm. Code 742.320(a) have not been met.

7. The Illinois EPA does not concur with the Equation R26 calculations for VOCs in groundwater provided in the subject submittal. Information provided by the facility suggests that its conceptual model of groundwater contaminant migration is not sufficiently conservative as indicated by the following:

   a. The facility's assertion (based on Equation R26 calculations) that groundwater contaminant migration will be slow and only move a short distance (13 ft to compliance) is not supported by field observations. Groundwater quality data indicates that the contamination has already moved well beyond the property boundary thus demonstrating its capacity to migrate much farther than the 13 ft suggested by the facility's Equation R26 calculations; and

b. While there may be a preferential contaminant migration pathway along the railroad tracks, there also appears to be a preferential pathway for groundwater contaminant migration to the south, which is not accounted for in the subject Equation R26 calculations.

8. The facility cannot use modeled groundwater contaminant concentrations in order to define the extent of contamination. To meet the requirements of 35 Ill. Adm. Code 742.120 and 742.320(b), the extent of groundwater contamination must be defined by sampling locations with contaminant concentrations that do not exceed appropriate Tier 1, Class II GROs.

9. Detrex must determine the source(s) of groundwater contamination in the northern area of the facility. Current groundwater concentrations exceeding 100,000 ug/L strongly suggest the presence of free product contamination in that area.

10. Based on information provided in the subject submittal, the Illinois EPA has determined that the facility must conduct an RFI Phase III investigation for groundwater associated with SWMUs 1, 2, 3 and 4. RFI Phase III activities must be conducted in accordance with Condition IV.B and Attachment D.2 of the facility's Permit.

11. The work plan, required in Item 10 above, must be intended to determine the sources of the groundwater contamination, and to determine the extent of groundwater contamination in order to meet the requirements of 35 Ill. Adm. Code 742.120. The work plan must be developed in accordance with Attachment D-2 of the Permit and must include, but not be limited to, the following:

    a. Proposed sampling locations to determine the extent of groundwater contamination to the west of boring BH39;

    b. Proposed sampling locations to determine the extent of groundwater contamination to the east of monitoring well MW-5;

    c. Proposed sampling locations to determine the extent of groundwater contamination east of monitoring well MW-3; and

    d. A proposed groundwater parameter list that includes all COCs that exceed appropriate Tier 1, Class II GROs.

12. Within 90 days of the date of this Illinois EPA letter, the facility must submit to Illinois EPA the following:

a. A document regarding soil saturation limit and soil attenuation capacity for COCs, as required in Items 1 and 2 above;

b. A workplan to remediate contaminated soil in off-site properties, as required in Item 4 above; and

c. RFI Phase III work plan for groundwater, as required in Items 10 and 11 above.

13. A complete RCRA Closure Corrective Action Certification Form must accompany all documents submitted to the Illinois EPA regarding this project.

14. Corrective action at this facility must meet the requirements of: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding the corrective action activities.

Within 35 days of the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA; however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed ninety (90) days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989,the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989.This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Scott Kaufman at 217/785-6869; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

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JLM OSK TBM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

February 24, 2006

Certified Mail
7004 2510 0001 8654 8151

RECEIVED
FEB REC'D
DETREX CORPORATION

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corp Solvent & Env Svc
ILD074424938
Received: January 31, 2006
Log No.: B-113-CA-5
RCRA - Permit

Dear Mr. Craig:

This letter is in response to your January 26, 2006 letter requesting a sixty-day extension to submit the following documents required in Condition 12 of Illinois EPA's December 27, 2005 letter (Log No. B-113-CA-5): (1) a document to address soil saturation limit and soil attenuation capacity for contaminants of concern at the facility; (2) a workplan to remediate contaminated soil in off-site properties; and (3) a Phase III RFI workplan for groundwater. These documents are required to be submitted to Illinois EPA to address the corrective action requirements of the RCRA Permit for the above-referenced facility (Log No. B-113).

Your request for an extension for submitting the aforementioned three documents is here by approved. The aforementioned three documents required in Illinois EPA's December 27, 2005 letter should be submitted to Illinois EPA by June 1, 2006.

Should you have any questions regarding the groundwater aspects of this project, please contact Scott Kaufman at 217/785-6869; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

James K. Moore

James K. Moore P.E.
Acting Manager, Permit Section
Bureau of Land

JKM:TNK:bjh\063122s.doc

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE MANAGEMENT RCRA PART B PERMIT

Detrex Corporation
Attn: Mr. Robert Currie
P.O. Box 5111
Southfield, MI 48086-5111

Illinois EPA #0311860003 -- Cook County
USEPA ILD074424938
Detrex Corporation, Melrose Park Facility
RCRA Permit No. 113R-M-3
RCRA -- Part B Permit File

Issue Date: October 9, 2003
Effective Date: November 13, 2003
Expiration Date: October 9, 2013
Modification Date: DEC 0 2 2010

A RCRA Part B renewal Permit is hereby proposed pursuant to the Resource Conservation and Recovery Act, Illinois Environmental Protection Act, and Title 35 Illinois Administrative Code (I.A.C.) Parts 702, 703, 705, and 720 through 729 to the Detrex Corporation Melrose Park facility to operate a waste management facility involved in the storage of hazardous waste. Detrex Corporation is located at 2537 LeMoyne Avenue, Melrose Park, Illinois.

This permit consists of the conditions contained herein (including those in any attachments and appendices) and applicable regulations contained in the Illinois Environmental Protection Act and Title 35 I.A.C. Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit. The Environmental Protection Act (Ill. Rev. Stat., Chapter 111 2, Section 1039) grants the Illinois Environmental Protection Agency the authority to impose conditions on permits which is issued. This Permit contains 90 pages including Attachments A through F.

If you have any questions regarding this Part B Permit, please contact Mary Riegle at 217/524-3329.

RECEIVED
DEC 1 5 REC'D
DETREX CORPORATION

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:MER:bjh\982691s.doc

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

Pink
B-113-CA-6 & 7

May 22, 2007

Certified Mail
7004 2510 0001 8617 0628

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation/Melrose Park Facility
ILD074424938
Received: May 31, 2006; November 6, 2006; January 23, 2007 (via e-mail)
Log No.: B-113-CA-6 & 7
RCRA - Permit

Dear Mr. Craig:

This is in response to the document, entitled "Summary of Environmental Conditions and Workplan for Detrex Corporation Facility Located in Melrose Park, Illinois", dated November 1, 2006 (cover letter date is October 30, 2006) and submitted by Mr. Steven Vasass and Dr. Betty Locey of ARCADIS on behalf of Detrex Corporation (Detrex). The subject submittal was submitted to address the corrective action required in the facility's RCRA Part B Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

A Phase III RCRA Facility Investigation (FRI) workplan, dated May 26, 2006, was initially submitted by Mr. Stan Miles of Detrex Corporation (Detrex). After Illinois EPA's initial comments for the May 2006 workplan were provided to the facility, Detrex submitted the subject document as a revised workplan for Phase III RFI and a foundation document for the project. The subject workplan/Foundation Report included the background and the history of the RCRA corrective action at the above-referenced facility. In addition, Dr. Betty Locey of ARCADIS transmitted additional information via electronic mail in response to Illinois EPA's draft comments on the subject November 1, 2006 workplan/Foundation Report.

The subject Phase III workplan/Foundation Report along with the additional information was reviewed by the Illinois EPA and hereby approved subject to the following conditions and modifications:

1. The subject submittal "Summary of Environmental Conditions and workplan for Detrex Corporation facility located in Melrose Park, Illinois," dated October 30, 2006 supersedes Detrex's May 2006 RFI Phase III Stage 2 workplan submittal.

2. The Illinois EPA can approve the four (4) proposed monitoring well locations, which includes a well being installed off-site near the location of boring BH-39.

3. The following information must be submitted with the Phase III Report and Summary, in addition to the information required in Condition 6 below:

   a. The facility must collect groundwater elevations and groundwater samples at monitoring wells MW-1 through MW-9 in accordance with Section 4 of the November 1, 2006 submittal (Log No. B-113-CA-7), and analyze groundwater samples for volatile organic carbons (VOCs) using SW-846 Method 8260;

   b. Condition 9 of the December 12, 2005 Illinois EPA letter (Log No. B-113-CA-5) must be addressed;

   c. The requirements found in Condition 11.a of the December 12, 2005 Illinois EPA letter (Log No. B-113-CA-5) must be addressed if contamination is found in the groundwater sampling results obtained at the well to be installed near boring BH-39; and

   d. Condition 11.d of the December 12, 2005 Illinois EPA letter (Log No. B-113-CA-5), which requires the facility to propose a groundwater parameter list that includes all COCs that exceed appropriate 35 Ill. Adm. Code, Part 742, Tier 1, Class II Groundwater Remediation Objective (GROs), must be satisfied.

4. Conditions 11.b and 11.c of the December 12, 2005 Illinois EPA letter (Log No. B-113-CA-5) have been satisfied.

5. It is understood that Detrex has already conducted some of the field activities proposed in the subject submittal during January of 2007. This investigation results shall be included in the Phase III report required in Condition 6 below.

6. The Phase III investigation should be completed by July 1, 2007. When the Phase III investigation is complete, the owner or operator must submit to the Illinois EPA certification both by a responsible officer of the owner or operator and by an independent registered professional engineer that the facility completed Phase III in accordance with the specifications in the approved RFI Phase III workplan. In addition, a certification statement meeting the requirements of 35 IAC 702.126 must be provided by a responsible officer of the laboratory which conducted the chemical analyses that the requirements of this letter were met during the chemical analyses that the requirements of this letter were met during the chemical analysis of all samples. This certification must address the applicable sample

collection, preservation, handling preparation and analytical requirements set forth in this letter. These certifications must be received at the Illinois EPA within 60 days after completing Phase III activities. These dates may be extended if Detrex submits information to the Illinois EPA indicating that it is attempting to complete the required activities in a timely manner but needs additional time to complete the investigation.

The attached Corrective Action certification forms must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the RFI. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity.

The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5105 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he/she is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Section 1). Therefore, any certification or engineering services which are performed for a RFI workplan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, Section 13.1 of the Illinois Professional Engineering Act.

As part of the certification, to document the RFI Phase III activities at your facility, please submit a Phase III Report and Summary which includes, at a minimum:

a. The information identified in this letter regarding the required soil sampling/analysis effort as specified in Condition 7 below;

b. Information which the workplan indicates will be in the report;

c. A chronological summary of Phase III activities and the cost involved.

d. Color photo documentation of Phase III activities.

e. A description of the qualifications of personnel performing and directing the RFI activities including contractor personnel.

f. A general discussion of the activities which should be carried out as a next step to completing the RCRA corrective action for the facility.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Illinois EPA by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

7. Previous investigation results show that contamination of soil and groundwater at the facility has migrated to the off-site properties. The facility's Phase III RFI report required in Condition 6 above must include a workplan to specifically remediate the contamination outside the Detrex property boundaries.

8. There are some discrepancies between the information provided on Page 15 and the two maps provided in Attachment 5 of the subject workplan regarding the adjacent properties. The facility must ensure that the information regarding the property owners is current and accurate. This property owner's information along with an updated scaled map of the Detrex facility and its adjacent properties must be included in the RFI Phase III Report required in Condition 6 above.

9. During the proposed Phase III investigation, the site geology and hydrogeology evaluated and presented in the subject submittal must be confirmed by the Phase III investigation field data. If any new information is found, the information regarding the geology and hydrogeology of the subject site and the surrounding properties must be re-evaluated.

10. It is indicated in the subject submittal that other than sampling locations BH-32 and BG-2, all of the samples collected from 'unsaturated zone' are from surface soil only (mostly 0-2' bgs). On page 22 of the subject submittal, it is stated that "Saturated soil samples were collected in order to obtain vertical delineation and to evaluate the potential for contaminants to impact groundwater. They should not be used in an evaluation of the soil component of groundwater and soil inhalation pathway." Whether the soils are saturated or unsaturated, the facility still needs to address these highly contaminated soils at the facility.

11. All samples must be collected must be analyzed for contaminants of concern (COCs). If necessary, an appropriate number of samples should be analyzed for the physical properties of soil, such as moisture contents, organic carbon contents, soil particle density, and soil bulk

density. This data will eventually be used for the Tiered analysis for the facility when appropriate.

12. Tier 2 and 3 remedial objectives listed in within the subject report/workplan are not approved or disapproved. As commented previously, when Tier 2 and Tier 3 evaluations are conducted for remedial objectives, all the conditions in part 742 must be met. All parameters, both defaults and site-specific, and actual calculations must be clearly presented. After the proposed investigation and the additional field data is collected, the facility may evaluate the data to determine if the tiered approach in accordance with 35 Ill. Adm. Code 742 (TACO) is appropriate. Any further evaluations and determinations must be in accordance with TACO and must be presented in the RFI Phase III Report. Finally, it must be noted that 35 Ill. Adm. Code 742.120 requires that contamination at a facility be properly characterized before remediation objectives are developed in accordance with TACO.

13. The following procedure must be utilized in the collection of all required soil samples:

    a. The procedures used to collect the soil samples must be sufficient so that all soil encountered is classified in accordance with ASTM Method D-2488.

    b. If a drill rig or similar piece of equipment is necessary to collect required soil samples, then:

        1. The procedures specified in ASTM Method D-1586 (Split Spoon Sampling) or D-1587 (Shelby Tube Sampling) must be used in collecting the samples.

        2. Soil samples must be collected continuously at several locations to provide information regarding the shallow geology of the area where the investigation is being conducted;

    c. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment A of the Illinois EPA's RCRA closure plan guidance instructions;

    d. Soil samples not collected explicitly for VOC analysis should be field-screened for the presence of VOCs at all locations where VOCs are a concern;

    e. All other soil samples must be collected in accordance with the procedures set forth in SW-846; and

f. When visually discolored or contaminated material exists within an area to be sampled, horizontal placement of sampling locations shall be adjusted to include such visually discolored and/or contaminated areas. Sample size per interval shall be minimized to prevent dilution of any contamination.

14. The facility proposes to conduct free product investigation in the area where the soil saturation limits are exceeded. The descriptions and a reference to a technical document, such as USEPA guidance or ITRC guidance, of the procedure used for this proposed investigation must be included in the Phase III report, required in this letter

15. The goal for the soil investigation effort approved herein to determine the extent of contamination in the vicinity of the facility. Depending on the amount of hydrocarbon in the soil, a sample of the soil brought to the surface during an investigation can: (1) emit hydrocarbon vapors; (2) be stained; and/or (3) actually contain free-phase hydrocarbon. Thus, it is important to field screen all soils encountered during the investigation for the presence of hydrocarbon contamination. The procedure to be submitted to Illinois EPA as required in Condition 11 above must also include the following:

a. All soil must be field screened for VOCs using a photoionization detector (PID) in accordance with procedures set forth in USEPA guidance documents;

b. Any olfactory observations made by the investigator(s) during the inspection of the soil encountered during soil investigation (such as the detection of any relative strength of hydrocarbon orders) must also be documented on the boring logs;

c. All soil encountered must also be visually inspected for the presence and relative amount of hydrocarbon contamination in the soil. The categories into which each sample should be placed and the type of information which should be recorded in the boring logs is as follows:

(1) No visible evidence of contamination;

(2) The soil is stained some color other than its natural color (such as green, brown, or black); this staining is usually observed in fine-grained materials. The actual color of the staining must be documented in the boring log;

(3) The soil particles are coated with hydrocarbon (typically observed in coarse-grained materials). Again, the color of the hydrocarbon coating must be documented in the boring log;

(4) The soil is actually saturated with free-hydrocarbon being present in the soil pores. The color, "relative" viscosity and relative amount of hydrocarbon in the pores must be documented in the boring logs.

16. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846). When a SW-846 (Third Edition) analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Illinois EPA. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the third edition of SW-846. For inorganic parameters, the detection limit achieved during the analysis of the TCLP extract must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15.

17. Any equipment, including heavy earth movers or smaller tools, shall be scraped to remove any residue. Following this, the equipment must be steam cleaned and triple rinsed. All residues, wash and rinse water shall be collected and managed as a hazardous waste if analysis of the waste detects the presence of hazardous constituents or it exhibits a characteristic of hazardous waste. In any event the material must be managed as a special waste.

18. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

19. The portion of the final RFI Phase III report documenting the results of the soil sampling/analysis effort must contain the following information, for each area investigated:

a. A discussion of (1) the reason for the sampling/analysis effort conducted at each investigative area and (2) the goals of the sampling analysis effort conducted at each investigative area;

b. A scaled drawing showing the horizontal and vertical location where all soil samples were collected at each area;

Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

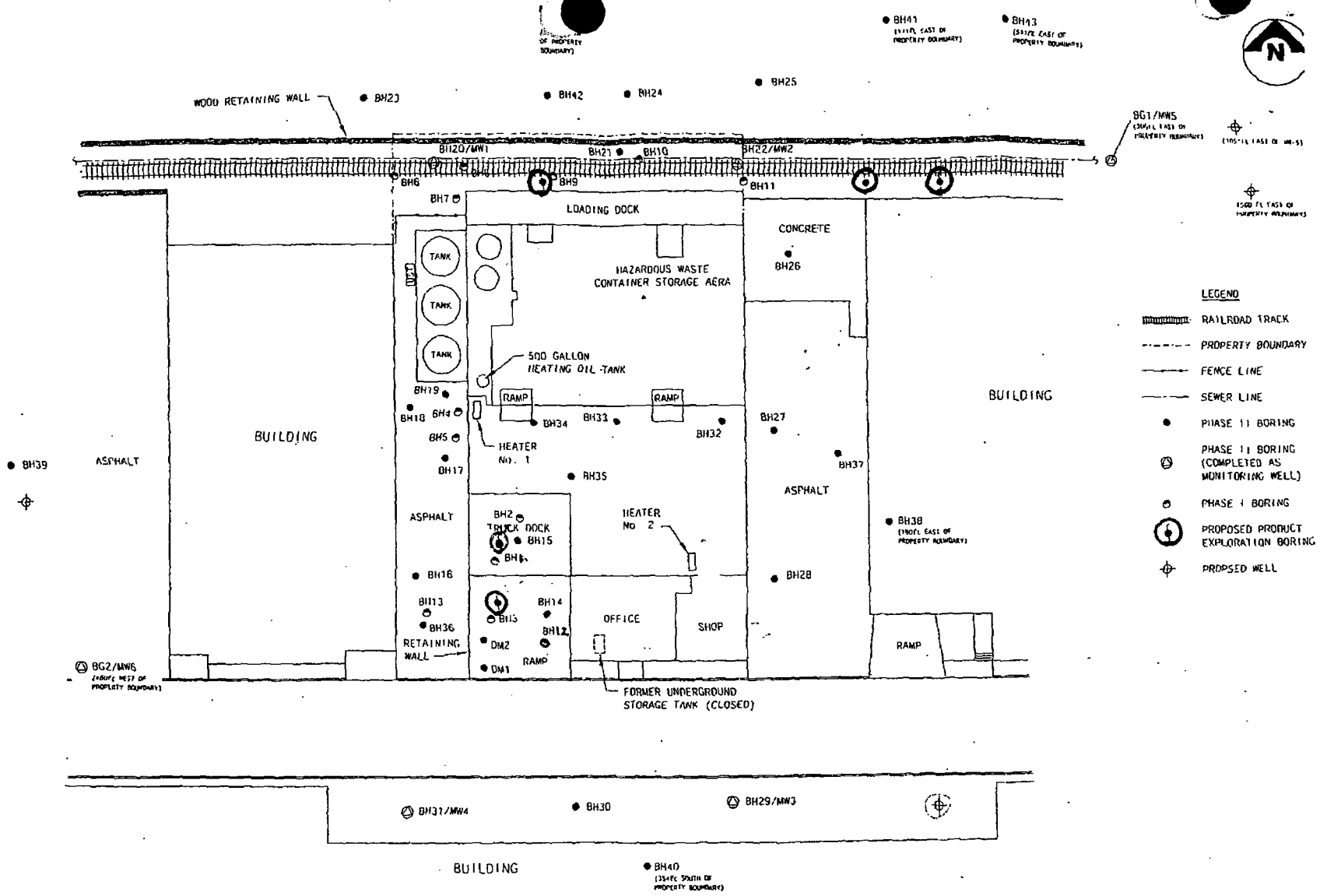
SFN:TNH:mls/072342s.doc
JKM TBM

cc: Betty Locey, Ph. D., DABT, ARCADIS G&M of Michigan, LLC.
Stephan Vasas, ARCADIS G&M of Michigan, LLC.

Attachment: Site Map

Enclosures: Corrective Action Certification
Laboratory Certification Statement
IEPA Guidance for Preparing RCRA Closure Plan

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman



Attachment

Site Layout Map

Detrex Corporation/Melrose Park

B-113

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

July 9, 2009

Certified Mail
7008 1140 0004 7343 2013

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: December 24, 2007; May 8, 2008; October 3, 2008; June 5, 2009
Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to the following four documents: (1) "Request for Meeting to Discuss Detrex Corporation Facility Located at 2537 LeMoyne Avenue in Melrose Park, Illinois", dated December 19, 2007; (2) "Phase III Summary of Environmental Conditions Report", dated May 5, 2008; (3) "Additional Information for the Detrex Corporation Facility", dated October 2, 2008; and (4) "Updated Water Well Survey Tex, Table, and Figures", dated May 12, 2009. These documents were submitted by Dr. Betty Locey of ARCADIS G&M of Michigan, LLC on behalf of Detrex Corporation (Detrex). The documents were submitted to address the corrective action required in the above-referenced facility's RCRA Part B Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Detrex's December 2007 submittal contained information regarding investigative results at the facility and requested a meeting to discuss the corrective action activities for the facility based on the previous activities and the information provided in the December 2007 submittal. A meeting was held between Detrex and Illinois EPA on February 5, 2008 to discuss the December 2007 submittal. During this meeting it was agreed that Detrex would submit a comprehensive corrective action report to Illinois EPA, which: (1) summarizes and evaluates the results of the RFI Phase III activity and previous corrective action effort; and (2) discusses the facility's plan to complete RCRA corrective action at on and off-site properties.

As agreed during the February 5, 2008 meeting, Detrex submitted the May 2008 Phase III Summary of Environmental Conditions Report, which included the results of RCRA Facility Investigation (RFI) Phase III soil and groundwater investigation conducted at the facility and the proposed Tier 2/3

evaluations of remedial objectives for the subject facility. Subsequently, as requested by Illinois EPA, the October 2, 2008 and the May 12, 2009 documents were submitted to Illinois EPA as addendums to the Phase III Summary of Environmental Conditions Report.

The four submittals mentioned and discussed above were reviewed as requests to modify the RCRA corrective action program at the Detrex facility in Melrose Park, Illinois and are hereby approved with following conditions and modifications:

1. Section 1 of the May 2008 report indicates that the facility's goals are to achieve: (1) Closure of the RCRA Permit; (2) a No Further Action (NFA) for the site; and (3) No Further Remediation (NFR) or Environmental Land Use Conditions (ELUCs) as appropriate for off-site properties. Illinois EPA has following comments:

    a. Use of an environmental land use control (ELUC) is one of the remedial options accepted by 35 Ill. Adm. Code 742: Tiered Approaches to Corrective Action Objectives (TACO) to eliminate an exposure pathway(s) by establishing restrictions on a property, which may include, but not limited to: industrial/commercial land use, an engineered barrier, access controls, groundwater use restrictions, a worker safety caution/plan, and/or use of site-specific remedial objectives.

    b. Any ELUC to be established for a property through Illinois EPA's corrective action program must be approved by Illinois EPA prior to being recorded with the appropriate government al office.

    c. Upon the completion of RCRA corrective action at the site and any affected off-site properties, Detrex will receive a No Further Action (NFA) letter regarding the RCRA corrective action for the four (4) former solid waste management units (SWMUs) required corrective action by the facility's RCRA Permit. This NFA determination is for the four SWMUs and any contamination discovered while undergoing RCRA corrective action; however it doesn't address any other potential contamination or environmental contamination that may exist within the property.

    d. Upon completion of RCRA corrective action at an off-site property, of which the contamination was originated from Detrex facility, Illinois EPA will issue a letter for the subject off-site property to indicate that the specific area of the property and the contamination associated with release from Detrex was remediated in accordance with Section 742 (TACO). However, note that this letter will not be a comprehensive No Further Remediation (NFR) letter for the property, as it only addresses a specific contamination and its affected area.

e. As for the "Closure of Permit", the facility must meet all the requirements of Section II.H of its RCRA Permit.

2. It appears as though Detrex has adequately characterized the soil contamination at this site.

3. Based on the site-specific conditions and IEPA's further evaluation of the data presented in the subject report, Illinois EPA has determined that the following site specific Soil Saturation Limits (C_{sat}) for TCE and PCE are approved ***for the Detrex property only***:

Trichloroethene (TCE) = 1767 mg/kg (surface soil; above 1-m bgs)
2550 mg/kg (subsurface soil; below 1-m bgs)

Tetrachloroethene (PCE) = 425 mg/kg (surface soil)
436 mg/kg (subsurface soil)

1,1,1-trichloroethane (1,1,1-TCA) = 1570 mg/kg (surface soil)*
2240 mg/kg (subsurface soil)*
**Default soil property values for silt are used*

Note that, as you are aware, the recent proposed amendments to the TACO regulations included various modifications, including addition of Indoor inhalation exposure route to the risk evaluation in TACO. Thus, it is highly recommended that the facility meet the default C_{sat} requirement recent proposed amendments to TACO as shown below:

Csat (mg/kg)	Outdoor Inhalation	GW Migration	Indoor Inhalation
PCE	800	310	290
111-TCA	1300	670	560
TCE	1200	650	520

4. If the facility disagrees with the C_{sat} values in Condition 3 above, the facility may choose to conduct additional evaluation. However, unless new additional field data, collected from appropriate sampling locations and depth pre-approved by Illinois EPA, is provided to Illinois EPA to modify the site-specific values, the following site-specific values for f_{oc}, the facility must utilize following values for the f_{oc}:

f_{oc} (surface soil) = 0.0086

f_{oc} (subsurface soil) = 0.013

5. At this time, Illinois EPA has determined that the soil attenuation capacity requirements of 35 Ill. Adm. Code 742.215 have been met. However, this determination may need to be re-evaluated if any new data indicates otherwise.

6. The concentration of 1,1,1-TCA detected at the facility meets the site-specific C_{sat} requirement. However, 1,1,1-TCA is still a consistent of concern for this facility and the surrounding properties. Any new analytical data to be collected must include this compound.

7. The facility's request to exclude the groundwater pathway in accordance with 35 Ill. Adm. Code 742.925 cannot be approved at this time. In accordance with Section 742.305 and 320, until the soils exceeding the site-specific C_{sat} values for TCE and PCE are remediated to below the C_{sat}, none of exposure pathways can be eliminated.

8. The investigation data and the evaluation of the soil and groundwater contamination in the on- and off-site properties included in the subject Phase III Report and the additional information submitted in October 2008 identified some highly contaminated areas (for TCE only) at the facility and off-site properties. Figures 5 thru 7 in Attachment 1 of the October 2008 submittal show the potential distribution of TCE in soil at three different subsurface elevations (the typical ground-surface elevation at Detrex facility is approximately 632.5'): 630', 620' and 610'. These figures show the facility's interpolation of the data collected to date and may not represent the accurate/actual field condition. However, the locations of the high concentrations of TCE shown in the figures are likely sources of the soil and groundwater contamination in the area.

   Based on the data provided in the subject submittals, the following areas of soil contamination associated/possibly associated with former releases and operation at the Detrex facility are identified below (Attachment D to this letter is a site map showing the locations of these areas):

   a. Soil contamination in the northern portion of the Detrex facility extending to the surrounding off-site areas (Area A);

   b. Soil contamination in the Loading Dock Area (Area B), which extends out west to the Outback property;

   c. Soil contamination in the vicinity of Outback Building, just west of Detrex property (Area C). Please note that this contamination may have originated from the Loading Dock Area (Area B) at Detrex;

   d. *Soil contamination between Detrex Facility and Handy Button Facility along the* LeMoyne Avenue (Area D);

e. Soil contamination in the Handy Button Property along LeMoyne Avenue (Area E); and

f. Area just East of Detrex Building in LaMantia Property (associated with Area B).

9. The facility must submit a corrective measure (CM) plan to address/remediate the areas identified in Condition 8 above. As indicated in Condition 7 above, any soils exceeding the site-specific C_{sat} limits must be remediated to at least below the C_{sat} levels (the actual remediation level is dependent on the procedures/requirements associated with developing remediation objectives for this project in accordance with 35 Ill. Adm. Code 742). The CM requirements for the Detrex facility is included in the Attachment D.3 of the facility's afore-mentioned RCRA Part B Renewal Permit. The CM plan must satisfy the requirements included in the permit. In addition, the following information must also be included:

a. A scaled site map showing the facility and the neighboring properties and their property boundaries. (each property must be clearly identified);

b. A scaled site map with the areas of soil contamination above the remedial objectives ;

c. A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);

d. A scaled figure(s), which includes on-site and off-site properties showing: (1) the areas where Detrex intends to remediate; and (2) the contaminated areas found during the RFI where Detrex does not intend to remediate. An explanation to Item (2) based on the actual data collected to-date must be accompanied for each area surrounding the Detrex facility.

e. An estimate of the extent and the volume of contamination present in soil above applicable remedial objectives for the project;

f. Detailed descriptions and technical background and specification information for chosen remedial method(s), which should include pros and cons of utilizing the remedial method(s);

g. Time schedule and cost estimate for the proposed remedial activity and reporting;

h. Goals and objectives of the proposed remedial efforts;

i. Criteria for evaluation of the outcome of the remedial efforts; and

j. If a pilot study of one or more remedial option is proposed, then detailed technical information applicable to this project regarding all selected methods/options must be provided.

10. As you know, the proposed amendments to the TACO regulations included many changes to the current regulations. Specifically, the modifications proposed which will affect the direction of the Detrex corrective action project include (but not limited to):

    a. Addition of the indoor-Inhalation exposure route evaluation for soil and groundwater concentrations;

    b. Changes in the Tier 1 remediation objectives; and

    c. Soil saturation limits (C_{sat}) for three different exposure routes for COCs for this site: outdoor-inhalation, migration to groundwater; and indoor-inhalation.

    Due to the fact that: (1) concentrations of the TCE and other COCs are extremely high; (2) contamination has migrated to off-site properties; and (3) indoor inhalation exposure is an immediate concern at this facility and off-site areas, although it is not required at this time, it is recommended that the facility will develop a corrective measure (CM) plan to address the contaminations to meet the requirements of the proposed amendments to the TACO.

11. For the off-site properties that require remedial action, the default Tier 1 C_{sat} must be met, unless the Owner(s) of the property decides to place an ELUC to utilize TACO Tier2/Tier3 evaluation in accordance with TACO regulations. Site-specific parameters such as organic carbon fraction of soil must be confirmed to be accurate to be used for the off-site proprieties.

12. The following comments are made regarding the Proposed Remediation Objectives for Detrex site:

    a. Industrial Commercial Land Use: All remedial objectives are based on the industrial or commercial land use. This restriction must be included in an environmental land use control (ELUC) for the facility and the appropriate surrounding properties.

    b. Inhalation/ingestion (outdoor) exposure routes: It was proposed that these exposure routes be eliminated due to the fact that all affected areas are currently covered either by concrete or asphalt. As these are proposed to be an "engineered barrier" to the contaminated soil beneath, the requirements of 742.1000 must be met. In addition, an appropriate ELUC will also have to be established.

c. Soil Component of Groundwater Ingestion Exposure route: This exposure route cannot be eliminated in accordance with 35 Ill. Adm. Code Section 742.320 until all the requirements of that section are met. Once the requirements are met, then the use of the City of Melrose Pak Ordinance #321 as an institutional control to eliminate groundwater ingestion exposure route may be proposed in accordance with 35 Ill. Adm. Code 742 Subpart J.

d. Potential Indoor Inhalation Exposure Route: This exposure route will be of concern with the concentrations of contaminants in the soil and groundwater fund at this facility. In the subject report, the facility conducted a preliminary assessment comparing the results of the soil sampling with the proposed Tier 1 ROs for the indoor inhalation exposure route with TACO. The preliminary evaluation indicated that the levels of contaminants remain in the vicinity of the facility and surrounding properties exceeded the draft ROs for the industrial/commercial land use. See Condition 14 below for more comment on this exposure route.

13. The facility proposes to establish engineered barriers to eliminate the pathway for the ingestion and inhalation exposure routes. As stated in Condition 12 above, it appears that the facility intends to utilize the existing building and the paved area at the site as the engineered barrier. It must be noted that in order to utilized the existing structures as engineered barrier, all the pavement and the structures must be thoroughly inspected for any cracks or defects by a licensed structural engineer in the state of Illinois. Furthermore, the engineered barrier must be properly maintained in a future.

14. For indoor inhalation exposure pathway, the analytical data was compared to the draft remedial objectives for this exposure route in the subject submittal, which have not been formally approved by the Illinois Pollution Control Board (IPCB). However, by comparison, the levels of COCs in soil and groundwater may pose threat to the indoor air and will be likely to be concern for this facility and surrounding areas. The proposed regulations are being drafted at this time and the draft regulations to be included in TACO is expected to be available in the near future. As such, it is highly recommended that the facility should initiate the remedial option for the facility and any affected off-site locations regarding this exposure route.

15. It was demonstrated that the soil contamination in the northeastern portion of LaMantia property and the southeastern portion of U.S. Postal Service is unlikely to be associated with the soil contamination identified in the Detrex facility. However, the groundwater contamination in the vicinity of this area maybe associated to the contamination from Detrex.

16. The Illinois EPA cannot concur with the facility interpretation of the horizontal extent of groundwater contamination, as depicted on Figure 4 of the Additional Information dated

October 2, 2008. The facility must define the extent of groundwater contamination with actual data points where contaminants of concern (COCs) are not exceeding 35 Ill. Adm. Code, Part 620, Class II Groundwater Quality Standards (GQSs), instead of modeling or estimating the extent of the plume.

17. The following additional sampling locations are required to better define the extent of groundwater contamination:

    a. A minimum of three (3) groundwater samples are required to determine the actual extent of current groundwater contamination north of SWMU 3. Groundwater samples must be collected north of the railway at the following locations: (1) northwest of MW-1; (2) near BH-44; and (3) northeast of MW-2.

    b. A current sample southeast of SWMU 3, collected at or near BH-38.

    c. If current conditions indicate the groundwater levels exceed Class II GQSs at any of the locations required by Conditions 17.a and 17.b above, more investigation locations may be necessary to determine the extent of contamination.

    d. The samples required by Conditions 17.a and 17.b above must be obtained before the facility can further pursue excluding the groundwater pathway. The groundwater sampling locations may be collected from temporary piezometers; however, once the extent of groundwater has been defined, permanent monitoring wells may be required.

18. The Illinois EPA concurs that there are likely off-site sources of contamination that are not attributable to Detrex, and the groundwater contaminant plumes cannot be differentiated based on available data. Therefore, groundwater contamination has been delineated for all COCs at the following locations:

    a. Groundwater has been defined to the extent practicable to the south with monitoring wells MW-03, MW-04, and MW-07.

    b. Monitoring well MW-8 defines the extent of groundwater contamination to the east.

    c. Monitoring well MW-10 is adequate to define the extent of contamination to the west.

19. The Illinois considers the vertical extent of contamination defined to the extent practicable. This decision is based on: (1) the hydrogeologic properties of the Silt and Clay Unit; (2) the boring logs included within Appendix G, which indicate the unit becomes stiff and dry with depths of approximately 17 feet bgs and deeper; and (3) the uppermost aquifer is up to 48 feet thick within the investigation area.

20. The facility must maintain monitoring wells MW-1 through MW-10 to allow for collection of groundwater samples from the uppermost aquifer. The facility must implement a routine groundwater monitoring program, and report all monitoring and analytical data in accordance with the schedule listed below:

a.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following
Second Quarter	July 15
Fourth Quarter	January 15

b. The Illinois EPA concurs with the proposed site-specific COCs: benzene; chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; and vinyl chloride. All groundwater samples must be analyzed and compared to the approved Class II GQSs. An isoconcentration map must be created based on the results of the groundwater analysis.

c. The facility must determine the groundwater surface elevations at each well at the time groundwater is sampled in accordance with Condition 20.a. A potentiometric groundwater surface map must be created based on the groundwater elevations collected.

d. The facility must submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by this letter for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the facility must submit one (1) original and (excluding the groundwater monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is included as Attachment B.

e. Information required by Conditions 20.a through 20.d must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this letter, in accordance with the schedule found in Condition 20.a above. Additional guidance regarding the submittal of the information in an electronic format can be found at www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

f. The facility must report the information required by Conditions 20.a through 20.e in accordance with the schedule listed in Condition 20.a above, to the address listed below:

Stephen F. Nightingale, P.E.
Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276

21. Groundwater monitoring must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

22. If free product is encountered during sampling or remediation activities, corrective action must be proposed, for Illinois EPA review and approval, for the removal of free product and contaminated groundwater.

23. Once the vertical and horizontal extent of contamination have been defined, as reviewed and approved by the Illinois EPA, the facility must establish a Groundwater Management Zone in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website; http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/establishing-groundwater-management-zone.html.

24. Based on an average of slug test values provided on Table 5 in Volume 1 of the subject submittal dated May 6, 2008, the average hydraulic conductivity value of 5.29E-07 cm/sec must be used when applicable.

25. The groundwater requirements of the May 22, 2007 Illinois EPA letter (Log No. B-113-CA-6 & 7) have been satisfied.

26. As indicated by Mr. Stan Miles of Detrex during August 2008, the facility is in process of collecting the soil-gas samples at Outback property, located just west of the Detrex property. For any future field activity, it is recommended that the facility should submit a workplan for Illinois EPA's review and approval. Any field activities and investigation must be conducted an accordance with the technical guidance provided by USEPA, ASTM, ITRC or other acceptable professional organizations. All soil gas samples must be analyzed using a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory.

27. In general, when collecting soil gas samples, at a minimum, the followings should be followed during sample collection:

    a. Use rigid-wall tubing made of nylon or Teflon (or other equivalent material);

    b. Use gas-tight, insert containers to hold the sample;

    c. Purge three volumes before obtaining each discrete soil gas sample;

    d. Use a tracer of isopropyl alcohol or other equivalent leak compound;

    e. Limit the flow rate to 200 ml/min; and

    f. Soil gas sample shall be collected at a depth of 5 feet below ground surface.

28. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of **three complete** sets) must be submitted to Illinois EPA.

29. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

30. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

31. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

32. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

33. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies must be submitted to Illinois EPA.

This action shall constitute Illinois EPA's final action on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

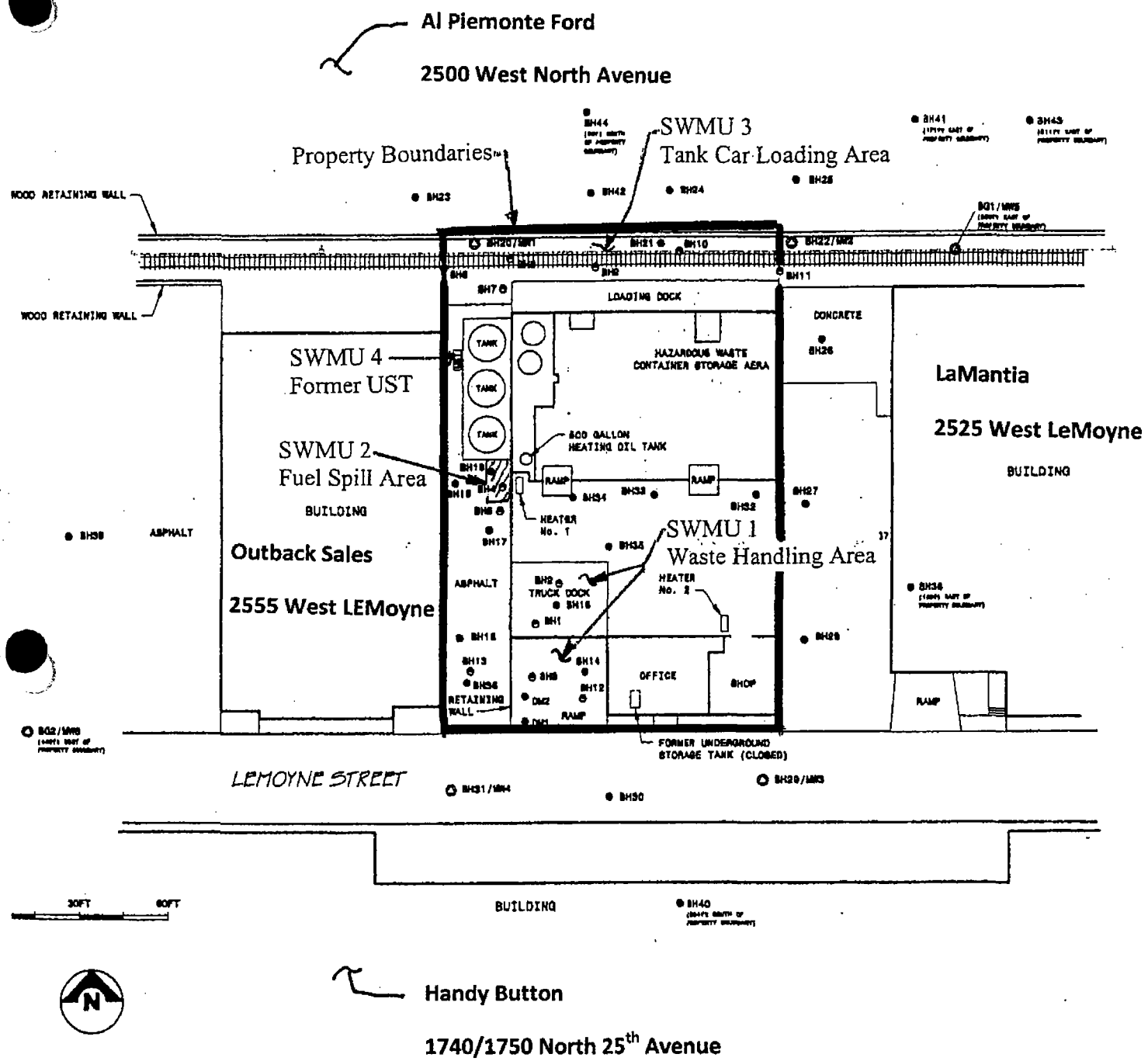
Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/mls/092024s.doc
JKM AMB TOM

Attachment: A -- Site Map
B -- RCRA Facility Groundwater, Leachate and Gas Reporting Form (LPC-952)
C -- Electronic Reporting Form
D -- Soil TCE Contamination Distribution Map at 620'



Handy Button

1740/1750 North 25th Avenue

Detrex Corp. Facility

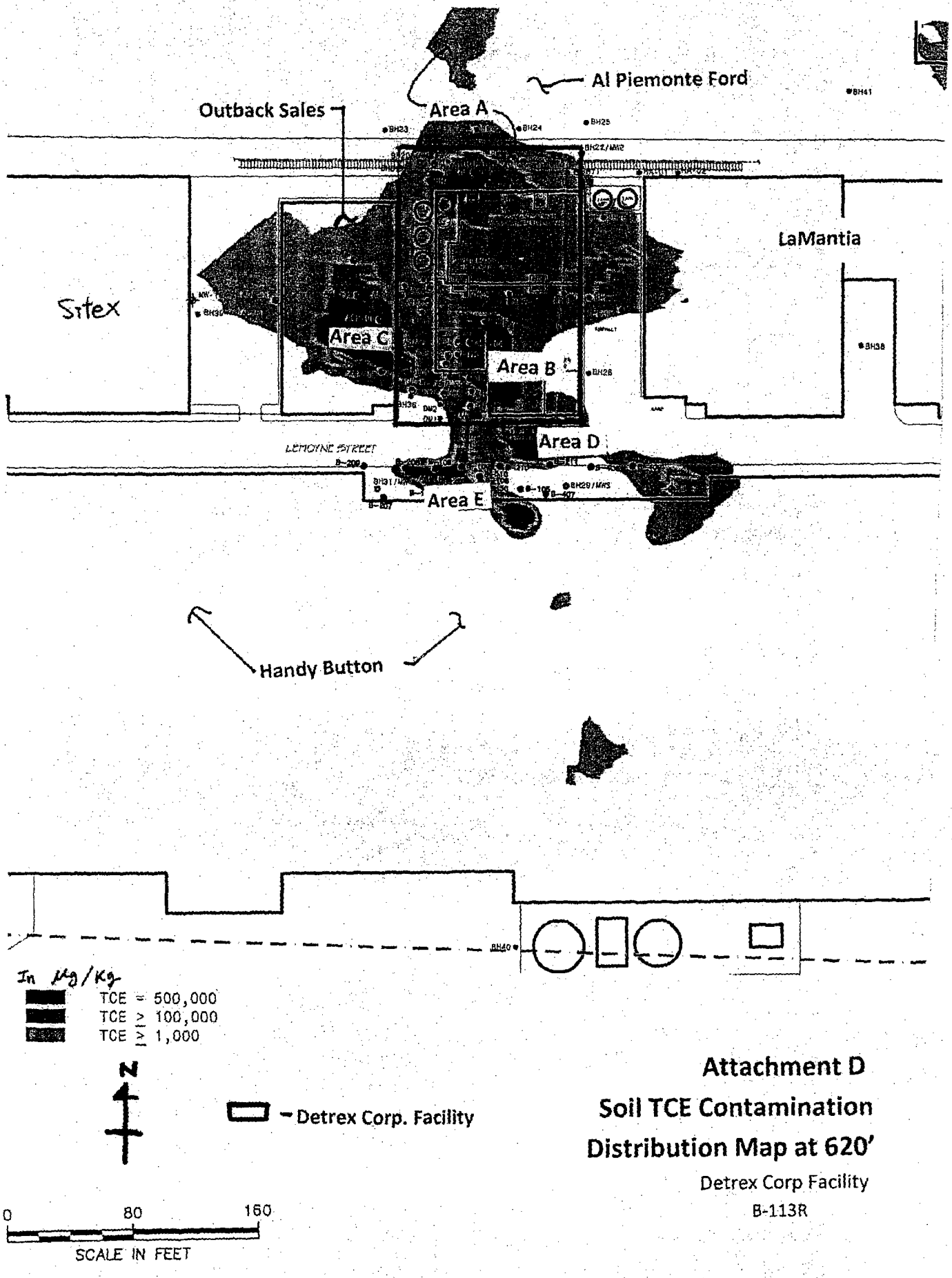
2537 West LeMoyne

Attachment A

Site Layout Map

Detrex Corp Facility

B-113R



Attachment D

Soil TCE Contamination Distribution Map at 620'

Detrex Corp Facility

B-113R

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

December 21, 2009

CERTIFIED MAIL
7004 2510 0001 8615 7797

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 – Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: July 30, 2009
Log No.: B-113R-CA-10
RCRA - Permit

Dear Mr. Craig:

This is in response to a report entitled, "Evaluation of Data Collected on the Outback Property", dated July 22, 2009, submitted by Betty Locey, PhD, DABT of ARCADIS, on behalf of Detrex Corporation (Detrex). The subject submittal was submitted to address the corrective action required in the facility's RCRA Part B Renewal Permit, issued on October 9, 2003 (Log No. B-113R). As a part of these on-going efforts, Detrex completed a soil and soil-gas vapor investigation at the Outback Sales, located at 2555 West LeMoyne Avenue in Melrose Park, Illinois, which is adjacent to and west of the above-referenced Detrex facility. The report submitted by Dr. Locey presented and evaluated the results of this investigation.

The subject submittal was reviewed as a request to modify the RCRA corrective action program at the Detrex facility and is hereby approved with following conditions and modifications:

1. The additional soil and soil gas investigations conducted at the Outback property described in the subject report are acceptable to Illinois EPA. The results of the investigation indicate that the indoor inhalation exposure to the chlorinated contamination in the soil beneath the building is a concern at the Outback property. Although the proposed site-specific soil gas remedial objectives proposed in the subject report are neither approved nor disapproved for the Outback property at this time, Illinois EPA has determined that the indoor inhalation exposure route at the Outback property may be addressed by installing an acceptable vapor mitigation system within the Outback building.

2. Concentrations of TCE and PCE and other related COCs exceeding TACO Tier 1 remedial objectives remain in the soils and groundwater at the Outback property. These levels will not pose a threat to human health or the environment and no further action will be required at the Outback property provided:

   a. Use of the property remains industrial/commercial in the future;

   b. Use of the groundwater in the vicinity of the property is prohibited in anyway;

   c. The existing building structure and the existing pavement located west of the building shown in the attached figure to this letter is utilized as the engineered barriers for ingestion and outdoor inhalation exposure routes for the property;

   d. An acceptable indoor-vapor mitigation system for the entire Outback building is installed to address the indoor-inhalation exposure route;

   e. No building may be built or added within the property in the future without installation of a proper indoor-vapor mitigation system;

   f. Restrictions are in place at the Outback property to limit direct human exposure to the soils and groundwater beneath the barriers;

   g. Any construction or other activities that come in direct contact with the soil and/or groundwater beneath the engineered barriers must be prohibited without a site safety\worker percussion plan;

   h. If any portion of the engineered barriers is removed or disturbed, then any excavated soil resulting from the project must be characterized and disposed in accordance with all applicable rules and regulations;

   i. If any soils are removed from the area within the property, then soils removed must be characterized and disposed in accordance with all applicable rules and regulations; and

   j. The owner(s) of the Outback property must properly maintain the engineered barriers and the mitigation system in the future.

3. In addition to the requirements in Condition 2 above, a no further action determination for the Outback property will also be based on the use of Village of Melrose Park's Ordinance and Memorandum of Understanding (MOU) as an institutional control prohibiting the installation of water supply wells and the use of groundwater as a potable water source in

the vicinity of the site and the surrounding areas within the village. Therefore, in accordance with 35 Ill. Adm. Code 742.1000(b), the facility must submit for Illinois EPA review and approval a proposed institutional control that meets the requirements of 35 Ill. Adm. Code 742, Subpart J. Additional guidance regarding institutional controls can be found at www.epa.state.il.us/land/taco/.

4. An Environmental Land Use Control (ELUC) meeting the requirements of 35 Ill. Adm. Code 742 Subpart J must be established for the Outback property to ensure the requirements and restrictions of Conditions 2 and 3 above are met in the future. A draft of such an ELUC must be submitted for review and approval.

5. Upon approval of the selected institutional control, the facility must complete the no further action recording requirements of 35 Ill. Adm. Code 742, Subpart J relative to the Outback property. 35 Ill. Adm. Code 742.1010(d)(8) requires that an ELUC contain scaled maps which show information about the facility, any remaining contamination at the facility and any physical features at the facility to which the ELUC applies.

   a. The required scaled site maps must specifically show:

      (1) the legal boundary of the property to which the ELUC applies;

      (2) The horizontal and vertical extent of contaminants of concern above applicable remediation objectives for soil and groundwater to which the ELUC applies;

      (3) Any physical features to which an ELUC applies (e.g., engineered barriers, monitoring wells, caps); and

      (4) The nature, location of the source, and direction of movement of the contaminants of concern.

   b. Exhibit B of the model ELUC developed by Illinois EPA is comprised of the maps necessary to meet the requirements of 35 Ill. Adm. Code 742.1010(d)(8). In developing such an exhibit for an ELUC associated with an engineered barrier or industrial/commercial land use restrictions:

      (1) If only one drawing is used to present all the required information, then it must be clearly labeled as Exhibit B to the ELUC in question. Many times however, it will be necessary to include more than one drawing in Exhibit B to meet the requirements of the requirements of 35 Ill. Adm. Code 742.1010(d)(8). In such cases, each map shall be given a unique Exhibit number (i.e., Exhibit B-1, B-2, B-3, etc.) and labeled as such.

(2) A cover sheet must be provided for the exhibit which: (a) lists the types of scaled maps that must be provided in the ELUC as required in 35 Ill. Adm. Code 1010(d)(8); (b) identifies the map within the exhibit which addresses the individual requirements of 35 Ill. Adm. Code 742.1010(d)(8)(A), (B), (C) and (D); and (c) lists the maps which comprise the exhibit by name and number.

(3) The Real Estate Tax Index/Parcel Index Number (PIN) of the property in question must be contained on each map in Exhibit B.

6. As a next step to bringing the remedial activities at the Outback property to completion, Detrex must submit the following to Illinois EPA for review and approval by March 15, 2010:

   a. A workplan for: (1) installation of the indoor vapor mitigation system; and (2) using the existing building and pavement as proposed engineered barriers; and

   b. The draft ELUC required in Condition 4 above.

7. A workplan for installation of a proposed mitigation system required in Condition 6(a) above must include, but not limited to, the following:

   a. An overall summary of the investigation to date at the Outback and surrounding areas;

   b. Site map(s)/figures to scale that include: (1) the property boundaries; (2) locations of the proposed engineered barrier; and (3) any extent of contaminations exist in the vicinity of the property.

   c. Descriptions of the proposed mitigation system and its manufacturing/engineering information regarding the installation and effectiveness of the system to be installed.

   d. Schematics showing the location(s)/area(s) where the mitigation system is installed.

   e. Proposed schedule and cost estimate for the work required.

8. In the workplan for using the existing building and pavement as engineered barriers, procedures must be in space for, the floor and the pavement to be visually inspected and

evaluated by a licensed professional engineer or a licensed structural engineer registered in the State of Illinois. Any cracks or defects found during the inspection that would compromise the integrity of the structure as an engineer barrier must be properly repaired. This integrity inspection and repair (if found necessary) must be documented and submitted to Illinois EPA.

9. At this time, the Illinois EPA can neither approve nor disapprove the Tier 2 Evaluation for groundwater. A revised Tier 2 demonstration should be provided within 45 days of the date of this letter, in order for a determination to be made:

   a. Revise R26 calculations using the input value of 0.023 for hydraulic gradient (i), and the GROs listed in Condition 9.b below;

   b. Utilize the highest observed concentrations at MW-10 to allow for the minimum amount of contamination in groundwater, while still achieving appropriate 35 Ill. Adm. Code 742, Tier 1, Class II GROs, at the nearest point of human exposure. Therefore, the Tier 2 GROs can be approved as follows:

1,1-dichloroethene	0.0467 mg/L
Cis-1,2-dichloroethene	27.600 mg/L
Trichloroethene	34.5 mg/L
Vinyl chloride	0.681 mg/L

   c. Provide calculations to satisfy 35 Ill. Adm. Code 742.805(1)(c) and 742.805(1)(d), in order to use the GROs listed in Condition 9.b above;

   d. Submit a figure which depicts the extent of groundwater contamination at well MW-10 in accordance with 35 Ill. Adm. Code 742.805(a)(1); and

   e. Submit a copy of the water well survey (WWS) and a figure which depicts the information required by 35 Ill. Adm. Code 742.805(a)(4) through 742.805(a)(6).

10. Approval of the Tier 2 Evaluation for Groundwater is contingent upon: (1) Detrex satisfying soil requirements; and (2) the Illinois EPA must review and approve the information required in Condition 9 above.

11. Upon satisfying Condition 10 above, in order to utilize the approved GROs for 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and vinyl chloride for purposes of the no further action (NFA) determination as discussed above, the facility must implement an institutional control restricting groundwater use. Therefore, the facility must meet the requirements in Condition 3 above.

12. The facility must maintain monitoring wells MW-1 through MW-10 to allow for collection of groundwater samples from the uppermost aquifer. The facility must maintain a routine groundwater monitoring program for the facility, and report all monitoring and analytical data in accordance with the schedule listed below:

a.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following
Second Quarter	July 15
Fourth Quarter	January 15

b. Groundwater must be analyzed for the following COCs: benzene; chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; and vinyl chloride. All groundwater samples must be compared to the Class II GQSs. A figure depicting the groundwater results exceeding Class II GQSs must be created based on the results of the groundwater analysis.

c. The facility must determine the groundwater surface elevations at each well at the time groundwater is sampled in accordance with Condition 12.a. A potentiometric groundwater surface map must be created based on the groundwater elevations collected.

d. The facility must submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by this letter for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the facility must submit one (1) original and (excluding the groundwater monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is included as Attachment B to the letter.

e. Information required by Conditions 12.a through 12.d must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this letter, in accordance with the schedule found in Condition 11.a above. Additional guidance regarding the submittal of the information in an electronic format can be found at www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

f. The facility must report the information required by Conditions 12.a through 12.e in accordance with the schedule listed in Condition 12.a above, to the address listed below:

Stephen F. Nightingale, P.E.
Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276

13. Groundwater monitoring for corrective action project must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

14. Once the extent of contamination has been defined, as reviewed and approved by the Illinois EPA, the facility must establish a Groundwater Management Zone in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website; http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/establishing-groundwater-management-zone.html. The Illinois EPA acknowledges there is likely off-site contamination from other sources affecting wells MW-3, MW-5, MW-9, and MW-10; consequently, the facility may propose to include these wells to comprise a portion of the GMZ Boundary.

15. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

16. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

17. All Corrective Action activities at the Detrex must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

18. Except as modified herein, RCRA corrective action activities at the facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

19. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies must be submitted to Illinois EPA.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

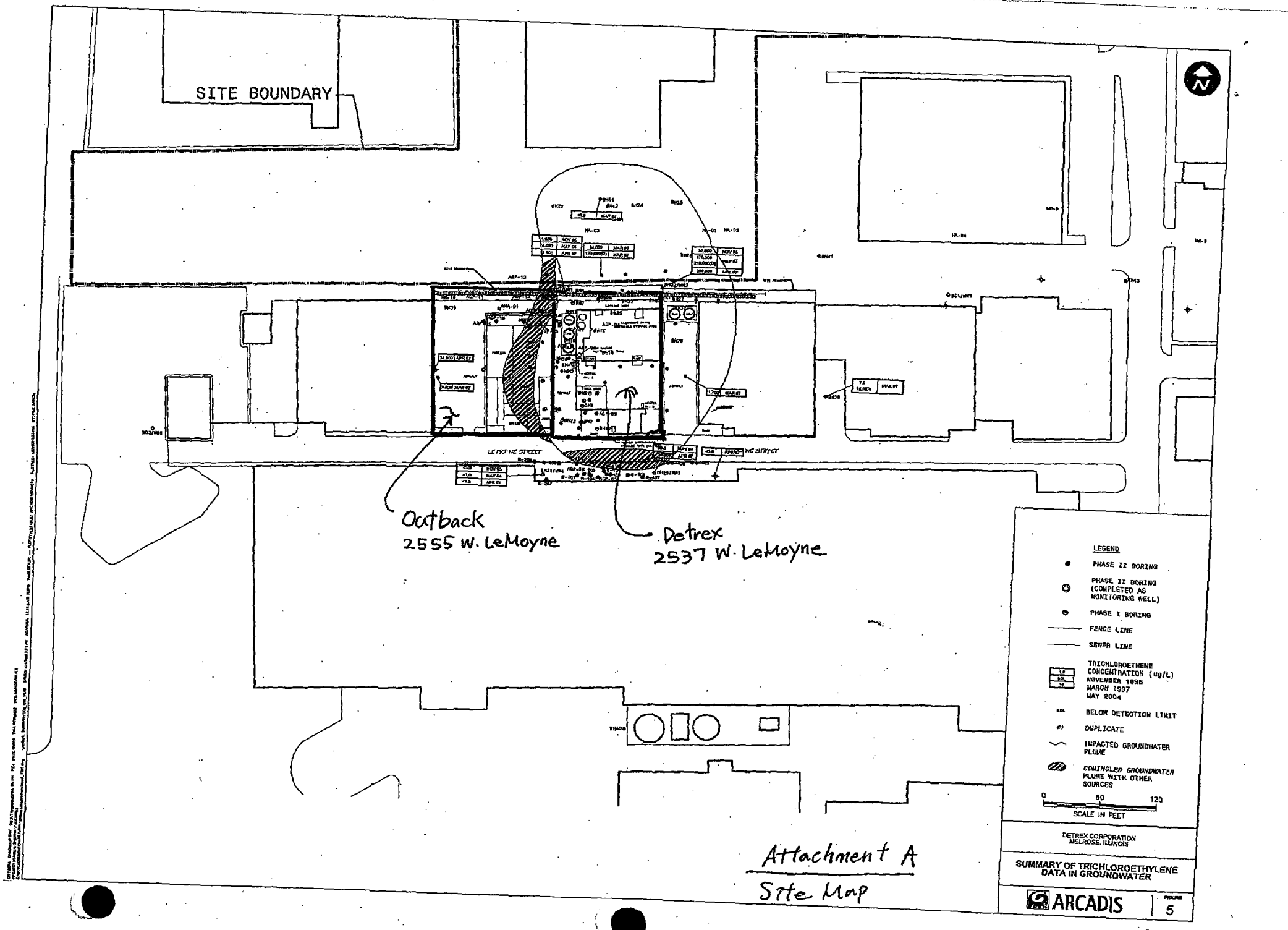
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/mls/090381s.doc
JCM AMB JBM

Attachments: A - Site Map
B – LPC592 Form
C – Electronic Reporting Form

cc: Betty Locey, Ph.D, DABT
Stephen Michael Vasas, P.G.



Attachment A

Site Map

Pink

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

Certified Mail
7004 2510 0001 8615 9258

January 6, 2010

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: September 9, 2009
Log No.: B-113R-CA-11
Permit CA
RCRA - Permit

RELEASABLE
MAR 01 2010
REVIEWER CT

Dear Mr. Craig:

This is in response to a September 8, 2009 submittal made on behalf of Detrex Corporation (Detrex) by Stephen M. Vasas, P.G. and Betty Locey, Ph D, DABT, both of ARCADIS regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R). On July 9, 2009, Illinois EPA approved, with conditions and modifications (Log No. B-113R-CA-8 and 9), the following four documents: (1) "Request for Meeting to Discuss Detrex Corporation Facility Located at 2537 Le Moyne Avenue in Melrose Park, Illinois", dated December 19, 2007; (2) "Phase III Summary of Environmental Conditions Report", dated May 5, 2008; (3) "Additional Information for the Detrex Corporation Facility", dated October 2, 2008; and (4) "Updated Water Well Survey Text, Table, and Figures", dated May 12, 2009.

Detrex and Illinois EPA held a telephone conference on August 21, 2009, followed by a September 15, 2009 meeting to discuss the conditions in the July 9, 2009 letter. The September 8, 2009 submittal provided an agenda and additional information to be discussed at the September 15, 2009 meeting.

Illinois EPA has completed its review of the additional information submitted on September 8, 2009, taking into account the August 21, 2009 and September 15, 2009 discussions. Based upon the results of these efforts, Illinois EPA hereby approves the September 8, 2009 submittal as a request to modify the approved RCRA corrective action program at the Detrex facility, subject to the following conditions and modifications:

1. This letter supersedes Illinois EPA's July 9, 2009 letter.

2. The four submittals approved by Illinois EPA's July 9, 2009 letter as identified above, are incorporated herein by reference.

3. Section 1 of the May 2008 report indicates that the facility's goals are to achieve: (1) Closure of the RCRA Permit; (2) a No Further Action (NFA) for the site; and (3) No Further Remediation (NFR) or Environmental Land Use Conditions (ELUCs) as appropriate for off-site properties. Illinois EPA has following comments:

   a. Use of an environmental land use control (ELUC) is one of the remedial options accepted by 35 Ill. Adm. Code 742: Tiered Approaches to Corrective Action Objectives (TACO) to eliminate an exposure pathway(s) by establishing restrictions on a property, which may include, but not limited to: industrial/commercial land use, an engineered barrier, access controls, groundwater use restrictions, a worker safety caution/plan, and/or use of site-specific remedial objectives.

   b. Any ELUC to be established for a property through Illinois EPA's corrective action program must be approved by Illinois EPA prior to being recorded with the appropriate government al office.

   c. Upon the completion of RCRA corrective action at the site and any portion of off-site properties, which the contamination was originated from the Detrex facility, Detrex will receive a No Further Action (NFA) letter regarding the RCRA corrective action for the four (4) former solid waste management units (SWMUs) required corrective action by the facility's RCRA Permit. This NFA determination is for the four SWMUs and any contamination discovered while undergoing RCRA corrective action; however it doesn't address any other potential contamination or environmental contamination that may exist within the property.

   d. Upon completion of RCRA corrective action at an off-site property, of which the contamination was originated from Detrex facility, Illinois EPA will issue a letter for the subject off-site property to indicate that the specific area of the property and the contamination associated with release from Detrex was remediated in accordance with Section 742 (TACO). However, note that this letter will not be a comprehensive No Further Remediation (NFR) letter for the property, as it only addresses a specific contamination and its affected area.

   e. As for the "Closure of Permit", the facility must meet all the requirements of Section II.H of its RCRA Permit.

4. It appears as though Detrex has adequately characterized the soil contamination at this site.

5. Based on the site-specific conditions and IEPA's further evaluation of the data presented in the subject report, Illinois EPA has determined that the following site specific Soil Saturation Limits (C_{sat}) for Trichloroethene (TCE), Tetrachloroethene (PCE), and 1,1,1-trichloroethane (1,1,1-TCA) are approved for the Detrex project:

   Trichloroethene (TCE) = 1767 mg/kg (surface soil; above 1-m bgs)
   2550 mg/kg (subsurface soil; below 1-m bgs)

   Tetrachloroethene (PCE) = 425 mg/kg (surface soil)
   436 mg/kg (subsurface soil)

   1,1,1-trichloroethane (1,1,1-TCA) = 1570 mg/kg (surface soil)*
   2240 mg/kg (subsurface soil)*
   **Default soil property values for silt are used*

   In addition, if the facility decides to utilize a site specific remedial objectives above for the affected off-site properties, the following conditions must be met:

   a. The property owner must agree to all the relevant requirements in according to TACO regarding the development and utilization of site-specific data and evaluation, including placing an Environmental Land Use Control (ELUC) on his/her property;

   b. It must be verified at each area that the use of site specific data obtained from Detrex property is appropriate; and

   c. If (a) or (b) above cannot be satisfied, then site-specific soil data must be obtained from the area specific location if any further site-specific evaluation is warranted.

6. If the facility disagrees with the C_{sat} values in Condition 5 above, the facility may choose to conduct additional evaluation. However, unless new additional field data, collected from appropriate sampling locations and depth pre-approved by Illinois EPA, is provided to Illinois EPA to modify the site-specific values, the following site-specific values for f_{oc}, the facility must utilize following values for the f_{oc}:

   f_{oc} (surface soil) = 0.0086

   f_{oc} (subsurface soil) = 0.013

   As indicated in Condition 5 above, the facility must meet Conditions 5 (a) and (b) in order to use the above f_{oc} values for any of the off-site properties.

7. At this time, Illinois EPA has determined that the soil attenuation capacity requirements of 35 Ill. Adm. Code 742.215 have been met. However, this determination may need to be re-evaluated if any new data indicates otherwise.

8. The concentration of 1,1,1-TCA detected at the facility meets the site-specific C_{sat} requirement. However, 1,1,1-TCA is still a consistent of concern for this facility and the surrounding properties. Any new analytical data to be collected must include this compound.

9. The facility's request to exclude the groundwater pathway in accordance with 35 Ill. Adm. Code 742.925 cannot be approved at this time. In accordance with Section 742.305 and 320, until the soils associated with releases from the Detrex facility exceeding the site-specific C_{sat} values for TCE and PCE are remediated to below the C_{sat}, none of exposure pathways can be eliminated.

10. The investigation data and the evaluation of the soil and groundwater contamination in the on- and off-site properties included in the subject Phase III Report and the additional information submitted in October 2008 identified some highly contaminated areas (for TCE only) at the facility and off-site properties. Figures 5 thru 7 in Attachment 1 of the October 2008 submittal show the potential distribution of TCE in soil at three different subsurface elevations (the typical ground-surface elevation at Detrex facility is approximately 632.5'): 630', 620' and 610'. These figures show the facility's interpolation of the data collected to date and may not represent the accurate/actual field condition. However, the locations of the high concentrations of TCE shown in the figures are likely sources of the soil and groundwater contamination in the area.

    Based on the data provided in the subject submittals, the following areas of soil contamination associated/potentially associated with former releases and operation at the Detrex facility are identified below (Attachment D to this letter is a site map showing the locations of these areas):

    a. Soil contamination in the northern portion of the Detrex facility extending to the surrounding off-site areas (Area A);

    b. Soil contamination in the Loading Dock Area (Area B), which extends out west to the Outback property;

    c. Soil contamination in the vicinity of Outback Building, just west of Detrex property (Area C). Please note that this contamination may have originated from the Loading Dock Area (Area B) at Detrex;

d. Soil contamination between Detrex Facility and Handy Button Facility along the LeMoyne Avenue (Area D);

e. Soil contamination in the Handy Button Property along LeMoyne Avenue (Area E); and

f. Area just East of Detrex Building in LaMantia Property (associated with Area B).

It has been shown from investigations conducted to date that there are potentially co-mingled groundwater and soil contaminations in the areas surrounding the Detrex property. However, at this time, the extent and nature of the co-mingled impact have not been defined and approved by Illinois EPA.

11. As agreed between Detrex and Illinois EPA during the September 15, 2009 meeting, a corrective measure (CM) plan to address/remediate the areas identified in Condition 10 above was submitted by Detrex on December 15, 2009.

12. Illinois EPA has proposed regulations with the Illinois Pollution Control Board (IPCB) regarding soil and groundwater remediation objectives for the indoor inhalation exposure routes. As such, this exposure route must be evaluated in all areas where contamination exists as a result of Detrex's operations. One possible way to address this exposure route is to install appropriate building control technologies within nay buildings located over these areas in addition to requiring that all new buildings constructed in these areas have an appropriate building control technology.

13. The following comments are made regarding the Proposed Remediation Objectives for Detrex site:

a. Industrial Commercial Land Use: All remedial objectives are based on the industrial or commercial land use. This restriction must be included in an environmental land use control (ELUC) for the facility and the appropriate surrounding properties.

b. Inhalation/ingestion (outdoor) exposure routes: It was proposed that these exposure routes be eliminated due to the fact that all affected areas are currently covered either by concrete or asphalt. As these are proposed to be an "engineered barrier" to the contaminated soil beneath, the requirements of 742.1000 must be met. In addition, an appropriate ELUC will also have to be established.

c. Soil Component of Groundwater Ingestion Exposure route: This exposure route cannot be eliminated in accordance with 35 Ill. Adm. Code Section 742.320 until all the relevant requirements of that section are met. Once the requirements are met,

then the use of the City of Melrose Pak Ordinance #321 as an institutional control to eliminate groundwater ingestion exposure route may be proposed in accordance with 35 Ill. Adm. Code 742 Subpart J.

d. Potential Indoor Inhalation Exposure Route: This exposure route will be of concern with the concentrations of contaminants in the soil and groundwater found at this facility. In the May 20008 Phase III summary of Environmental Conditions report, the facility conducted a preliminary assessment comparing the results of the soil sampling with the proposed Tier 1 ROs for the indoor inhalation exposure route with TACO. The preliminary evaluation indicated that the levels of contaminants remain in the vicinity of the facility and surrounding properties exceeded the draft ROs for the industrial/commercial land use. See Condition 12 above for more requirements associated with this exposure route.

14. The facility proposes to establish engineered barriers to eliminate the pathway for the ingestion and inhalation exposure routes. As stated in Condition 11 above, it appears that the facility intends to utilize the existing building and the paved area at the site as the engineered barrier. It must be noted that in order to utilized the existing structures as engineered barrier, all the pavement and the structures must be thoroughly inspected for any cracks or defects by a licensed structural engineer in the state of Illinois. Furthermore, the engineered barrier must be properly maintained in a future.

15. If the facility determines that wells should be removed and abandoned due to a lack of integrity, or intentional/unintentional abandonment on neighboring properties, then the facility must propose such action to Illinois EPA for review and approval.

16. It was demonstrated that the soil contamination in the northeastern portion of LaMantia property and the southeastern portion of U.S. Postal Service is unlikely to be associated with the soil contamination identified in the Detrex facility. However, the groundwater contamination in the vicinity of this area maybe associated to the contamination from Detrex.

17. The Illinois EPA cannot concur with the facility interpretation of the horizontal extent of groundwater contamination, as depicted on Figure 4 of the Additional Information dated October 2, 2008. The facility must define the extent of groundwater contamination with actual data points where contaminants of concern (COCs) are not exceeding 35 Ill. Adm. Code, Part 620, Class II Groundwater Quality Standards (GQSs), instead of modeling or estimating the extent of the plume.

18. The following additional sampling locations are required to better define the extent of groundwater contamination:

a. A minimum of three (3) groundwater samples are required to determine the actual extent of current groundwater contamination north of SWMU 3. Groundwater samples must be collected north of the railway at the following locations: (1) northwest of MW-1; (2) near BH-44; and (3) northeast of MW-2.

b. A current sample southeast of SWMU 3, collected at or near BH-38.

c. If current conditions indicate the groundwater levels exceed Class II GQSs at any of the locations required by Conditions 18.a and 18.b above, more investigation locations may be necessary to determine the extent of contamination.

d. The samples required by Conditions 18.a and 18.b above must be obtained before the facility can further pursue excluding the groundwater pathway. The groundwater sampling locations may be collected from temporary piezometers; however, once the extent of groundwater has been defined, permanent monitoring wells may be required.

e. The facility must submit a revised sampling and analysis work plan as well as the CM plan, required by Condition 11 above, for Illinois EPA review and approval.

19. The Illinois EPA concurs that there are likely off-site sources of contamination that are not attributable to Detrex, and the groundwater contaminant plumes cannot be differentiated based on available data. Therefore, groundwater contamination has been delineated for all COCs at the following locations:

a. Groundwater has been defined to the extent practicable to the south with monitoring wells MW-03, MW-04, and MW-07.

b. Monitoring well MW-8 defines the extent of groundwater contamination to the east.

c. Monitoring well MW-10 is adequate to define the extent of contamination to the west.

20. The Illinois EPA considers the vertical extent of groundwater contamination defined to the extent practicable. This decision is based on: (1) the hydrogeologic properties of the Silt and Clay Unit; (2) the boring logs included within Appendix G, which indicate the unit becomes stiff and dry with depths of approximately 17 feet bgs and deeper; and (3) the uppermost aquifer is up to 48 feet thick within the investigation area.

21. The facility must maintain monitoring wells MW-1 through MW-10 to allow for collection of groundwater samples from the uppermost aquifer. The facility must implement a routine groundwater monitoring program, and report all monitoring and analytical data in accordance with the schedule listed below:

a.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following
Second Quarter	July 15
Fourth Quarter	January 15

b. The Illinois EPA concurs with the proposed site-specific COCs: benzene; chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; and vinyl chloride. All groundwater samples must be analyzed and compared to the approved Class II GQSs. An isoconcentration map must be created based on the results of the groundwater analysis.

c. The facility must determine the groundwater surface elevations at each well at the time groundwater is sampled in accordance with Condition 21.a. A potentiometric groundwater surface map must be created based on the groundwater elevations collected.

d. The facility must submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by this letter for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the facility must submit one (1) original and (excluding the groundwater monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is included as Attachment B.

e. Information required by Conditions 21.a through 21.d must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this letter, in accordance with the schedule found in Condition 21.a above. Additional guidance regarding the submittal of the information in an electronic format can be found at www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

f. The facility must report the information required by Conditions 21.a through 21.e in accordance with the schedule listed in Condition 22.a above, to the address listed below:

Stephen F. Nightingale, P.E.
Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276

22. Groundwater monitoring must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

23. If free product is encountered during sampling or remediation activities, corrective action must be proposed, for Illinois EPA review and approval, for the removal of free product and contaminated groundwater.

24. Once the vertical and horizontal extent of contamination have been defined, as reviewed and approved by the Illinois EPA, the facility must establish a Groundwater Management Zone in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website; http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/establishing-groundwater-management-zone.html.

25. Based on an average of slug test values provided on Table 5 in Volume 1 of the subject submittal dated May 6, 2008, the average hydraulic conductivity value of 5.29E-07 cm/sec must be used when applicable.

26. The groundwater requirements of the May 22, 2007 Illinois EPA letter (Log No. B-113-CA-6 & 7) have been satisfied.

27. The facility has collected additional data from Outback Sales property, located at 2555 West Le Moyne Avenue, just west of the Detrex property. Detrex has submitted a report entitled "Evaluation of Data Collected on The Outback Property, Melrose Park, Illinois" dated July 22, 2009 to Illinois EPA to document and summarizes this investigation. Illinois EPA will respond to this report at a later date.

28. In case of any future soil-vapor investigation for this project, a workplan must be submitted to Illinois EPA for review and approval. In general, when collecting soil gas samples, at a minimum, the followings should be followed during sample collection:

    a. Use rigid-wall tubing made of nylon or Teflon (or other equivalent material);

    b. Use gas-tight, insert containers to hold the sample;

    c. Purge three volumes before obtaining each discrete soil gas sample;

    d. Use a tracer of isopropyl alcohol or other equivalent leak compound;

    e. Limit the flow rate to 200 ml/min; and

    f. Soil gas sample shall be collected at a depth of 5 feet below ground surface.

29. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of three complete sets) must be submitted to Illinois EPA.

30. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

31. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

32. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

33. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

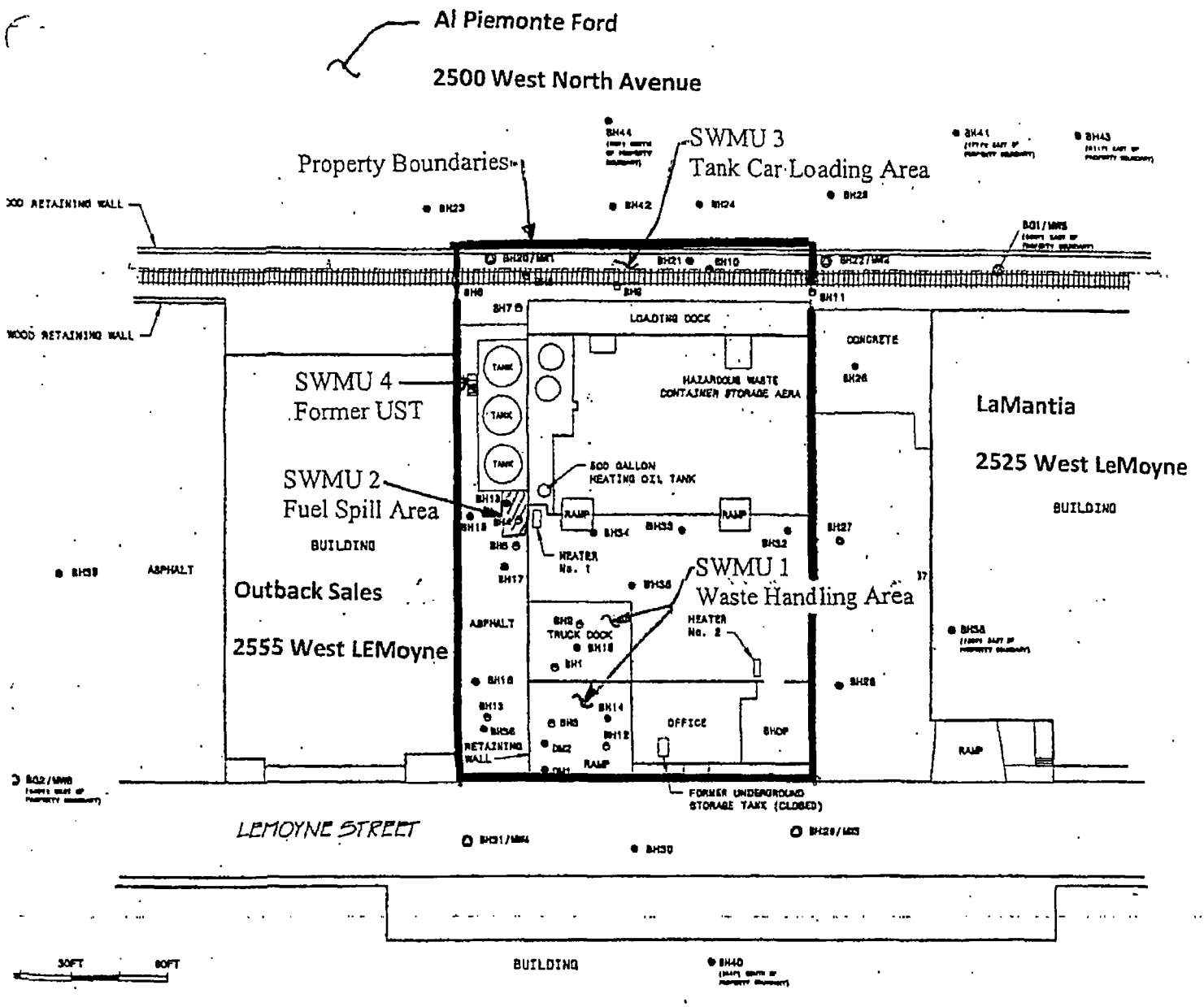
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/mls/090301s.doc
JCH AMB TNH
Attachment: A -- Site Map
B -- RCRA Facility Groundwater, Leachate and Gas Reporting Form (LPC-952)
C -- Electronic Reporting Form
D -- Soil TCE Contamination Distribution Map at 620'

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph.D., DABT, ARCADIS

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman



Handy Button

1740/1750 North 25th Avenue

Detrex Corp. Facility

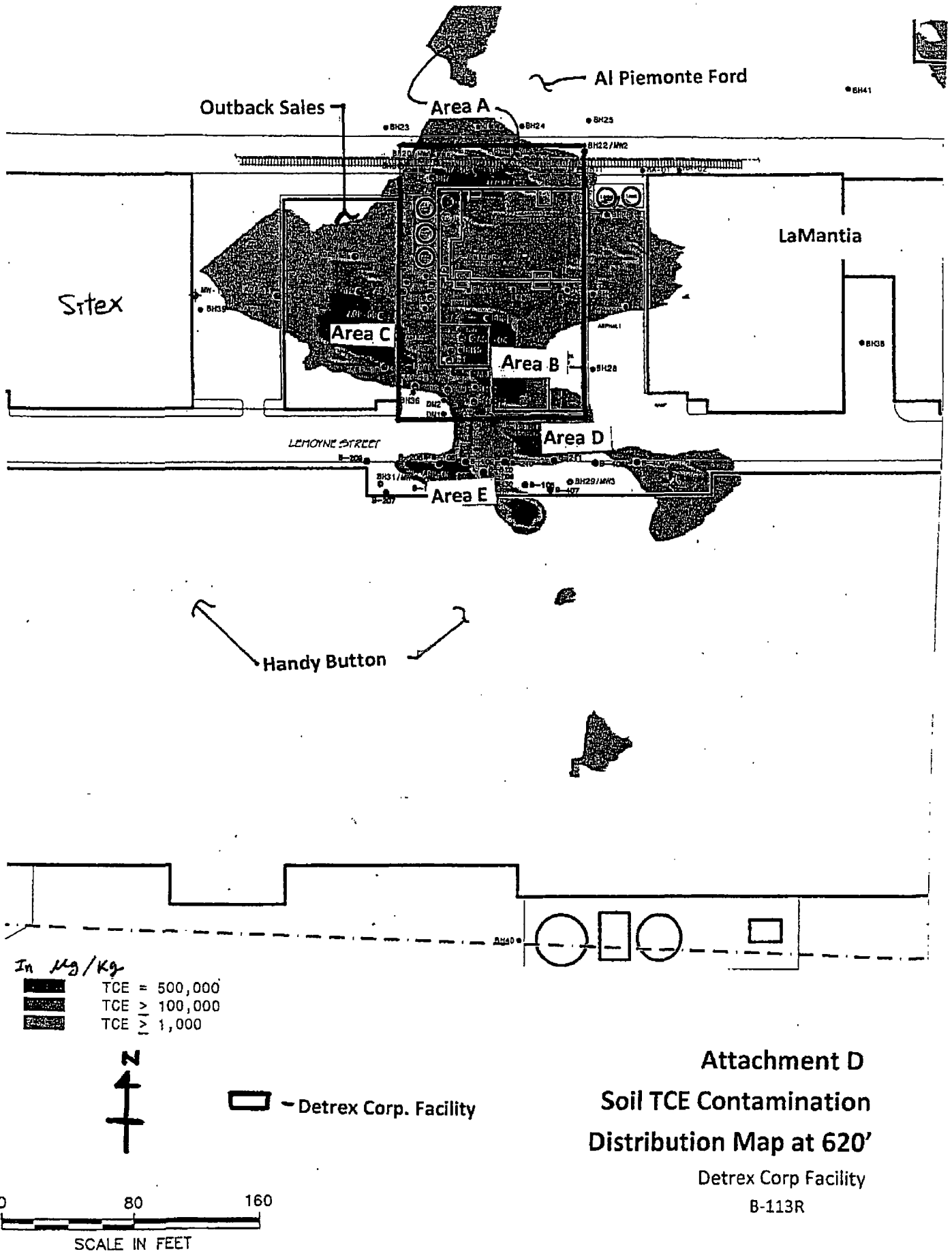
2537 West LeMoyne

Attachment A

Site Layout Map

Detrex Corp Facility

B-113R



Attachment D

Soil TCE Contamination Distribution Map at 620'

Detrex Corp Facility

B-113R

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

October 4, 2010

Certified Mail
7008 1830 0001 4712 3212

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: December 1, 2009; June 24, 2010
Log No.: B-113R-CA-12
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to the two (2) documents submitted to the Illinois EPA on behalf of Detrex Corporation (Detrex) by ARCADIS listed below. The subject documents were submitted to: (1) propose monitoring well locations for the groundwater monitoring program to further delineate the extent of groundwater impacts to the north, east, and west of the property; and (2) request to abandon compromised and/or covered wells:

Submittal No. 1 – A document entitled, "Additional Off-Site Investigation Work Plan", dated November 19, 2009, and received by the Illinois EPA December 1, 2009.

Submittal No. 2 – A document entitled, "Revisions to Section 3 of the Additional Off-Site Investigation Work Plan, dated November 19, 2009", and received by the Illinois EPA June 24, 2010.

The subject submittals were reviewed as a request to modify the RCRA corrective action program, in regards to groundwater, at the Detrex facility and are hereby approved with the following conditions and modifications:

1. The Illinois EPA can approve the proposed locations, as identified on Figure 2 of the June 21, 2010 submittal, for up to seven (7) new monitoring wells. In addition, the Illinois EPA can approve the abandonment of monitoring wells MW-3, MW-4, MW-6, and MW-7, if they can be located.

2. Construction of each monitor well/piezometer must be in accordance with the diagram contained in Attachment 1 of this letter, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois

EPA boring logs as provided in Attachment 2 of this letter unless otherwise approved by the Illinois EPA. A monitoring well completion form is provided as Attachment 3 of this letter.

3. The facility will be required to submit boring logs, construction diagrams and datasheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the facility will be required to submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All pertinent information should be submitted to the appropriate State agencies. Attachment 4 of this letter provides well plugging and abandonment procedures.

   Illinois Environmental Protection Agency
   Bureau of Land -- #33
   Permit Section
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

4. The facility has satisfied Conditions 18.a, 18.b, and 18.e of the Illinois EPA letter dated January 6, 2010 (Log No. B-113R-CA-11).

5. The samples collected at the locations approved in Condition 1 above are intended to demonstrate that the extent of groundwater contamination has been defined. Therefore, based on the results of the groundwater samples collected at the new and existing monitoring wells, the facility must verify that the vertical and horizontal extent of contamination have been defined. If the contamination has been defined, the facility must:

   a. Propose a GMZ in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website; http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/establishing-groundwater-management-zone.html; or

   b. Submit a proposal to further pursue excluding the groundwater pathway, in accordance with a 35 Ill. Adm. Code, Part 742.

6. If current conditions indicate the groundwater levels exceed a 35 Ill. Adm. Code, Part 620, Class II Groundwater Quality Standards (GQSs) at any of the new and/or existing monitoring wells, installation of additional monitoring wells may be necessary to determine the extent of contamination. Based on the groundwater results obtained, any proposal required by Condition 5 above, must be submitted within ninety (90) days of the date of this letter.

7. All corrective action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

8. Except as modified herein, RCRA corrective action activities at the facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

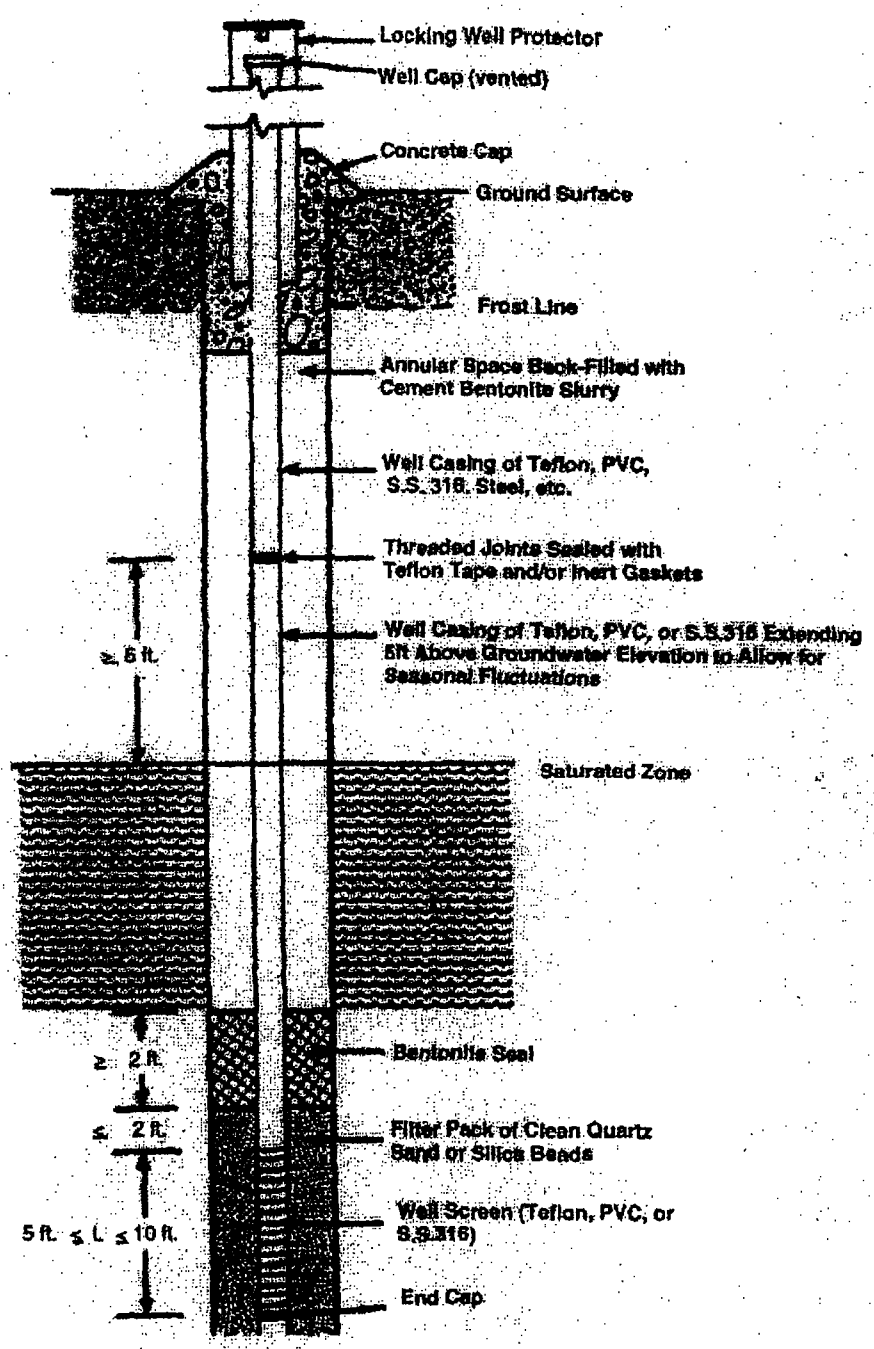
Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:AMB:bjh\101924s.doc
AMB TBH JVM

Attachment 1: Monitoring Well Diagram
Attachment 2: Field Boring Log
Attachment 3: Well Completion Report
Attachment 4: Provides the well plugging and abandonment procedures

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph. D., DABT, ARCADIS

Monitoring Well Diagram



Illinois Environmental Protection Agency

Field Boring Log

Page ____ of ____

Site ID No. _____ Federal ID No. _____

Site Name: _____

Quadrangle: _____ Sec. _____ T. _____ R. _____

UTM (or State Plane) Coord. N. (X) _____ E. (Y) _____

Latitude: ____ ____ ____ Longitude: ____ ____ ____

Boring Location: _____

Drilling Equipment: _____

County: _____

Boring No. _____ Monitoring Well No. _____

Surface Elevation: _____ Completion Depth: _____

Auger Depth: _____ Rotary Depth: _____

Date: Start: _____ Finish: _____

Elev.	Description of Material	Graphic Log	Depth In Feet	SAMPLES: Sample No.	Sample Type	Sample Recovery (X)	Penetrometer	N Values (Blow Counts)	OVA or HNU Reading	Personnel: G - D - H - H - / REMARKS

Field Boring Log (revised 02/02/04

Illinois Environmental Protection Agency **Well Completion Report**

Site Number: _____ County: _____

Site Name: _____ Well #: _____

State Plane Coordinate: X _____ Y _____ (or) Latitude: ___ ___ ___ Longitude: ___ ___ ___ Borehole #: _____

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: _____ Driller: _____

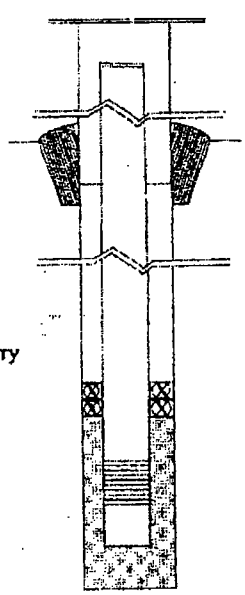
Consulting Firm: _____ Geologist: _____

Drilling Method: _____ Drilling Fluid (Type): _____

Logged By: _____ Date Started: _____ Date Finished: _____

Report Form Completed By: _____ Date: _____

ANNULAR SPACE DETAILS



Type of Surface Seal: _____

Type of Annular Sealant: _____

Installation Method: _____

Setting Time: _____

Type of Bentonite Seal - - Granular, Pellet, Slurry (Choose One)

Installation Method: _____

Setting Time: _____

Type of Sand Pack: _____

Grain Size: _____ (Sieve Size)

Installation Method: _____

Type of Backfill Material: _____ (if applicable)

Installation Method: _____

Elevations (MSL)*	Depths (BGS)	(.01ft.)
_____	_____	Top of Protective Casing
_____	_____	Top of Riser Pipe
_____	_____	Ground Surface
_____	_____	Top of Annular Sealant
_____	_____	Static Water Level (After Completion)
_____	_____	Top of Seal
_____	_____	Top of Sand Pack
_____	_____	Top of Screen
_____	_____	Bottom of Screen
_____	_____	Bottom of Well
_____	_____	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASURMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1st slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size **	

**Hand-Slotted Well Screens are Unacceptable

ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

	Well Construction		Plugging Procedure
I. Unconsolidated Sediment Wells	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construciton is unknown:	1. Follow procedures in I-A.
II. Bedrock Wells	II-A	...All bedrock monitor wells:	1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.

Pink

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

June 15, 2010

Certified Mail
7008 1830 0001 4713 2894

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: December 16, 2009
Log No.: B-113R-CA-13
Permit CA
RCRA - Permit

RELEASABLE
JUL 09 2010
REVIEWER MD

Dear Mr. Craig:

This is in response to a document entitled Corrective Measure Plan – Phase I, dated December 15, 2009, submitted to Illinois EPA on behalf of Detrex Corporation (Detrex) by ARCADIS regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

A Phase I corrective measures plan (CMP) was submitted in according with the facility's RCRA Permit and Illinois EPA's letter dated July 9, 2009 (log No. B-113R-CA-8) to address the soil and groundwater contamination in the vicinity of the facility. In the subject CMP, the facility proposed to conduct pilot testing using two types of remedial techniques: High-Vacuum Vapor Extraction System and Oxidant Injection System (i.e., Oxidant Diffusion System). The facility's proposed well locations for the two systems are shown in the attached site map.

The subject CMP was reviewed as a request to modify the RCRA corrective action program at the Detrex facility is hereby approved with following conditions and modifications:

1. As proposed in the facility's CMP, all necessary permits must be obtained prior to the construction and operation of the proposed high-vacuum vapor extraction system and oxidant diffusion system. Once the facility obtains appropriate permit(s) for installation of the proposed one (1) vapor extraction and two (2) oxidant injection wells, the facility must notify Illinois EPA in writing two-week prior to installation of the remedial system.

2. The facility must submit the following additional information to Illinois EPA for review and approval regarding the proposed remedial systems prior to commencing of the field activity for the pilot tests:

   a. Description of the soil sampling to be conducted prior to and after the pilot testing. The sampling description must identify the depths and intervals of the sampling, analytical parameters. It also must describe how the sampling will be conducted after the pilot tests are completed.

   b. Detailed description and of various components of the two systems, including well cross sectional diagram of each well. All components/equipments of the injection system must also be identified and described.

   c. Identify all the field parameters to be monitored throughout the pilot testing process for each remedial system. Describe how and when each data will be collected.

   d. Initial plan for the injection process, which includes but not limited to, application-durations and concentration of the oxidants.

   e. Describe any routine maintenance that needs to be provided.

   f. An example of a field log that would be kept during the pilot testing.

3. The facility must submit the Inventory Information prior to beginning of injection. The Inventory Information identifies the type of Class V well and the nature of injection activity. Following review of this information, the well owner may be required to provide additional information to demonstrate operation of the well will not result in contamination of a underground source of drinking water. In rare cases, a Class V well owner may be required to obtain a true permit prior to beginning operation. The Class V Injection Well Inventory Form and Instruction Sheet can be found at Illinois EPA's web site at: www.epa.state.il.us.

4. Once the proposed pilot tests are completed, a report summarizing the field pilot tests must be submitted to Illinois EPA for review and approval. Such report should include the following:

   a. Background information associated with the project.

b. Scaled drawing showing the as-built pilot scale systems.

c. Detailed descriptions of the various component of the systems.

d. Documentation of any soil and groundwater removed and transported during the construction and operation of the pilot tests for proper disposal.

e. Color photographs of the field activities conducted.

f. Summary of the all the field data collected and any necessary site/chemical specific data for the pilot tests, which should include, but not limited to, the parameters listed in Items (g) through (j) of this condition.

g. Summary of the pre- and post- pilot test soil samplings and analysis and water level measurements in vertical extraction wells.

h. Discussion of the effectiveness of the pilot study systems based upon the information such as decline in soil concentrations and vapor.

i. Records of routine maintenance during pilot tests. An inspection log must be maintained to document the results of each inspection. The information which must be documented in the log should include, but not limited to, the following:

1) Time and date of inspection;

2) Weather conditions during the inspection;

3) Temperature of the soil and ambient air;

4) Name and title of the inspector;

5) A list of all inspection points;

6) Inspection of each point inspected;

7) Check of gauges, temperature, pressure readings, and other instrumental data as applies to system equipment (e.g., individual extraction wells, inlet to the blower, air/water separator, vacuum blower inlet, heat exchanger, blower discharge, etc.) in order to verify that the system is working properly; and

8) Condition of the equipment, noting any defects and/or repair provided.

j. For the proposed high-vacuum vapor extraction system , the following information/data are essential (however not limited to) to designing the system:

1) Amount of time unit was in operation each day;

2) Extracted air flows at each of the vacuum extraction wells and combined totals;

3) Data collected to ensure vacuum is present throughout the system;

4) Extracted vapor concentrations at the individual well heads as well as for the whole system;

5) VOC extraction rates for each of the individual well as the whole system;

6) Total mass recovered for individual wellheads as well as for the whole system;

7) The results of any monitoring conducted for biological activity (CO_2 and O_2);

8) Documentarian of maximum radius of influence developed in the extraction wells; and

9) Monitoring of the temperature of injected and extracted air.

k. For the proposed Chemical Oxidation System, the following information/data are essential (however not exclusive to) to designing the system:

1) Contaminant mass;

2) Natural Organic Matter in the soil;

3) Chemical Oxygen Demand;

4) pH of Soil and/or Groundwater;

5) Hydraulic Conductivity;

6) Soil Classification;

7) Porosity of soil;

8) Groundwater Gradient;

9) Confirmation of oxidant injection concentrations, volume, and flow rate;

10) Measurement of oxidant concentration in groundwater or soil gas sample; and

11) Measurement of oxidant persistence.

l. A description of the procedures which will be used to demonstrate that remediation of the area is complete must be provided.

m. The information required in this condition must be supported by scaled drawings, tables, graphical presentation, calculations, laboratory reports, etc. as necessary. Any referenced materials to support the information should be included in the report.

5. Illinois EPA has determined that a review of the modeling of the soil component of groundwater within the subject submittal is premature, and the Fate and Transport Modeling included in Section 3 of the subject submittal was not reviewed at this time. The decision was based on the fact that: (1) continued C_{sat} exceedances for the COCs exist on-site; and (2) the facility has not completed further delineation of the extent of the groundwater contamination.

6. The facility must continue groundwater monitoring in accordance with previous Illinois EPA letters.

7. Groundwater monitoring must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

8. If free product is encountered during sampling or remediation activities, corrective action must be proposed, for Illinois EPA review and approval, for the removal of free product and contaminated groundwater.

9. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of three complete sets) must be submitted to Illinois EPA.

10. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

11. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

12. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

13. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

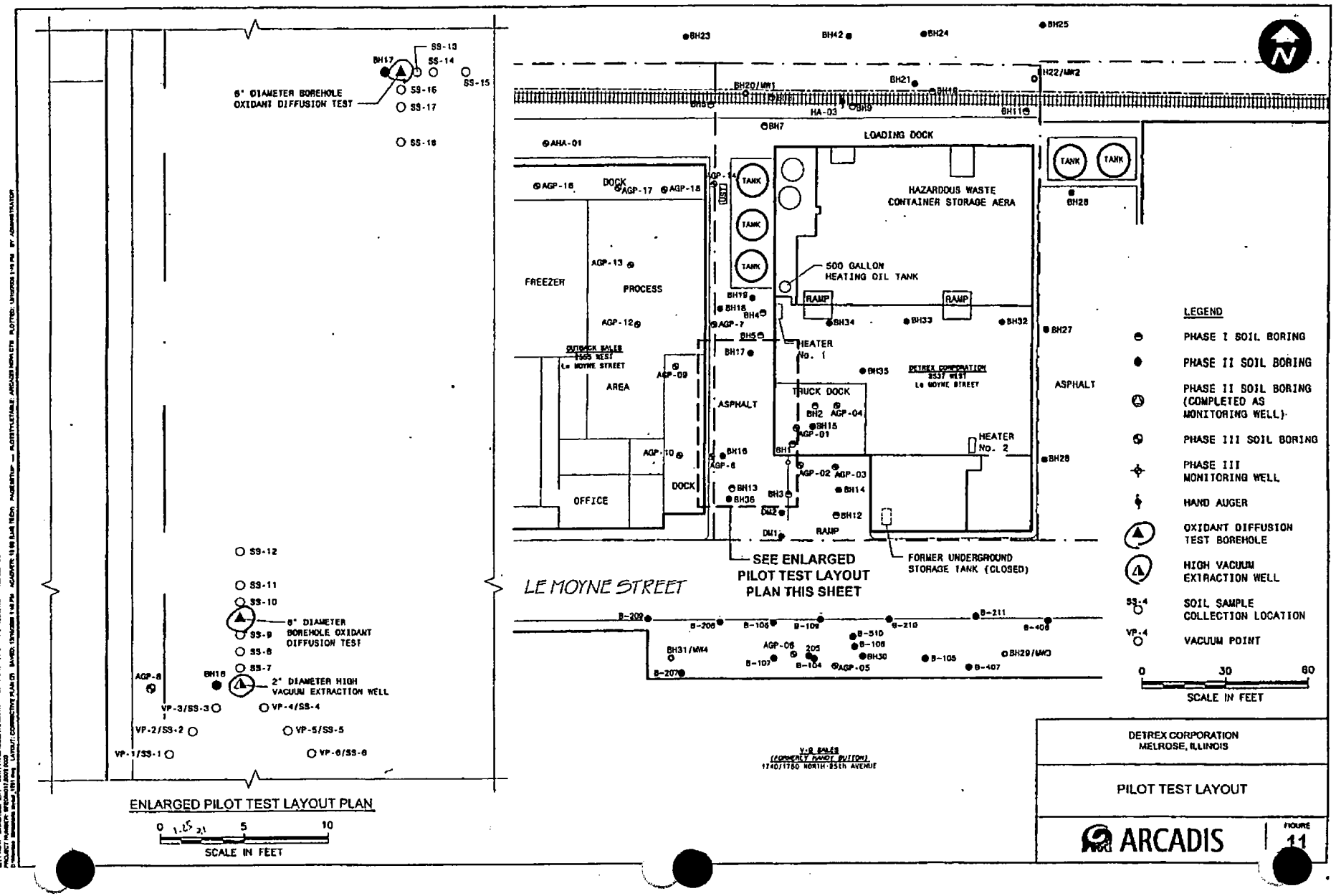
Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/102041s.doc
Attachment: Facility Site Map

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph. D., DABT, ARCADIS

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman

Attachment: Site Map
031186000 3 ... Cook Co.
ILD 074424938
RCRA Log No: B-113R



Pink

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

July 6, 2010

Certified Mail
7008 1830 0001 47134 3075

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: February 16, 2010; March 16, 2010
Log No.: B-113R-CA-14 and15
Permit CA
RCRA - Permit

RELEASABLE
JUL 09 2010
REVIEWER MD

Dear Mr. Craig:

This is in response to the following two submittals: (1) Revised Tier 2 Groundwater Demonstration in Response to Illinois EPA December 21, 2009 Letter (Log No. B-113R-CA-10), dated February 12, 2010; and (2) Response to Illinois EPA December 21, 2009 Letter (Log No. B-113R-CA-10, dated March 15, 2010. These two documents were submitted to Illinois EPA on behalf of Detrex Corporation (Detrex) by ARCADIS to address certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Detrex's February 12, 2010 document included the revised Tier 2 groundwater evaluation for the site, which was submitted in accordance with Condition 9 of Illinois EPA's December 21, 2010 letter (Log No. B-113R-CA-10).

The facility's March 15, 2010 submittal included the following three documents to address contamination at the Outback Sales facility at 2555 West Le Moyne Street, Melrose Park, Illinois, located west of Detrex facility:

1. A draft ELUC for Outback Sales property, as required in Conditions 2 through 6 of the IEPA's 12/21/09 letter;

2. The Vapor Mitigation Plan for the Outback Sales Building as required in Condition 6 of the IEPA's 12/21/09 letter; and

3. The Engineered Barrier Work Plan for Outback Sales Property, as required in Condition 6 of the IEPA's 12/21/09 letter.

The subject submittals were reviewed as a request to modify the RCRA corrective action program at the Detrex facility and are hereby approved with following conditions and modifications:

1. Illinois EPA concurs with the revised Tier 2 demonstration, and can approve the proposed Tier 2 Groundwater Remediation Objectives (GROs) as listed below. Groundwater monitoring at well MW-10 is no longer required.

1,1-dichloroethene	0.057 mg/L
Cis-1,2-dichloroethene	30.0 mg/L
Trichloroethene	34.0 mg/L
Vinyl chloride	0.81 mg/L

2. The facility must submit certification that plugging and abandonment of groundwater monitoring well MW-10 has been carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned.

   Illinois Environmental Protection Agency
   Bureau of Land #33
   Permit Section
   1021 North Grand Avenue East
   Post Office Box 19276
   Springfield, Illinois 62794-9276

3. Except for modified herein, the facility must continue groundwater monitoring in accordance with previous Illinois EPA letters.

4. The proposed Environmental Land Use Control (ELUC) for the Outback Sales Property located at 2555 West Le Moyne Street in Melrose Park, Illinois in Cook County (PIN No. 15-04-204-015-0000) is hereby approved subject to the following conditions and modifications:

   a. Section Three" of the proposed ELUC shall be modified as follows (note: __ must correspond to the appropriate Exhibit B item):

      Section Three. The Property Owner nearby agrees for himself/herself, and his/her heirs, grantees, successors, assigns, transferees and any other owner, occupant,

lessee, possessor or user of the Property or holder of any portion thereof or interest therein, that:

(1) the Property shall remain in industrial or commercial use as long as this ELUC remains in effect;

(2) an indoor-vapor mitigation system approved by IEPA shall be installed, operated, and properly maintained to eliminate the indoor inhalation exposure route at the existing building as shown in Exhibit B- __;

(3) groundwater under the property shall not be used as a potable water supply or for any other use;

(4) any new structure or addition to the existing building which is designed for human occupation within this Property, an indoor vapor mitigation system that is equivalent to the system installed as required in this ELUC for the existing building must be installed, operated, and maintained in the future;

(5) The entire floor of the existing building shall be maintained in the future as an engineered barrier ("Building Floor as Engineered Barrier" as shown in Exhibit B-1) to prevent direct exposures to the contaminated soil and groundwater in the vicinity of the Property;

(6) the paved areas outside of the building as shown in Exhibit B- __ ("Outdoor Engineered Barrier") must be maintained in the future as an engineered barrier to prevent direct exposures to the contaminated soil and groundwater in the vicinity of the Property;

(7) all the engineered barriers (as shown in Exhibit B-__) shall be maintained as long as this control remains in effect. Access to the soils beneath the engineered barrier shall be restricted so that humans will not come in direct contact with them;

(8) If the engineered barrier must be breached for drilling, excavation or construction, the site owner or the site owner's designee must notify construction workers of the presence of the contamination in advance of the intrusive activity. A site safety plan shall be developed and implemented to address possible worker exposure to the soils beneath the engineered barrier and to implement protective measures consistent with OSHA regulations;

(9) If the engineered barrier is breached, the owner shall cause it to be restored to its original, functional condition after the work is complete;

(10) Any soil removed from beneath the engineered barrier must be managed as a waste in accordance with 35 Ill. Adm. Code, Subtitle G: Waste Disposal.

b. In "Section Five", the Illinois EPA's 10-digit LPC number for the facility must be inserted in the third line;

c. All the attachments, including all tables, included in the proposed ELUC must have the Parcel ID Number shown;

d. The purpose of the cover page for "Exhibit B" is to identify and list all the necessary elements attached to the ELUC to complete all the requirements for establishing an ELUC. Thus, each requirement identified in Exhibit B (A) through (E) must identify the elements (i.e., attached figure or table) to fulfill the requirements. The proposed ELUC contained "Exhibit B" with descriptions of necessary elements required for this ELUC (A through E) with three figures (B-1 through B-3) and seven tables (B-1 through B-7). These ten figures and tables were not referenced in Exhibit B (A) through (E) in any fashion. Therefore, "Exhibit B" portion of the of the proposed ELUC shall be modified as follows (NOTE: Illinois EPA's comments are *italicized*) :

Exhibit B

B-1 Scaled map of the Property, which include following information:
-Property Boundary to which the ELUC applies;
-Outdoor and Indoor Engineered barrier boundaries; and
-Horizontal extent of soil contamination.

B-2 Scaled map of the Property showing the sampling locations exceeding the Tier 1 ingestion and inhalation exposure soil remediation objectives for Industrial/Commercial property in accordance with 35 Ill. Adm. Code 742 (TACO).

B-3 Apparent Groundwater Elevation and flow Directions (as of November 19-20, 2009). Note that groundwater ingestion exposure route was eliminated in accordance with 35 Ill. Adm. Code 742 Subpart C, provided that:

<List proposed language in (i) through (iv) of the Exhibit B (E) (a) of the proposed ELUC here>

B-4 Summary of All Soil Data on Outback Property, Melrose Park, Illinois

B-5 Summary of All Soil Data on Outback Property Compared to Tier 1 Commercial/Industrial Remedial Objectives, Melrose Park, Illinois

B-6 Summary of All Soil Data on Outback Property Compared to Tier 1 Construction Worker Remedial Objectives, Melrose Park, Illinois

B-7 Summary of All Soil Data on Outback Property Compared to Tier 1 Soil Component of Class II Groundwater Ingestion Remedial Objectives, Melrose Park, Illinois

B-8 Summary of Groundwater Data on Outback Property, Melrose Park, Illinois

B-9 Summary of Groundwater Data on Outback Property Compared to Tier 1 Class II Groundwater Remedial Objectives, Melrose Park, Illinois

e. Attached table in Exhibit B "Table B-3: Summary of All Soil Data on Outback Property Compared to Tier 1 Residential Remedial Objectives, Melrose Park, Illinois" included in the proposed ELUC is not necessary to be attached to the ELUC as: (1) this ELUC places restriction on the property to be industrial/commercial use only; and (2) Summary of all soil data is also included in the proposed ELUC.

5. In addition, the following changes must be made to the proposed ELUC to meet the modifications required in Condition 4 above and 35 Ill. Adm. Code 742 Subpart J:

a. As modifications required in Exhibit B above, each attachment must:(1) be labeled in accordance with the required modification above (i.e., Figure B-1 to Exhibit B-1 and Table B-1 to Exhibit B-4); or (2) include a title sheet for each attachment (i.e., Exhibit B-1);

b. For Figure B-2 of the proposed ELUC (which should be Exhibit B-2), the legend box for the sample ID and results located in the mid-left hand side of the figure shall be relocated so that the property boundary is fully shown. Furthermore, the Property boundary for the subject site must be clearly shown. Modify the selection of property border line to clearly differentiate this Property from neighboring property;

c. For Figure B-3 of the proposed ELUC (which should be Exhibit B-2), the texts "SWMU #2" and "SWMU #4" shall be removed or relocated from the figure showing the Outback property; and

d. The final ELUC must include a scaled site map showing the horizontal and vertical extent of COCs above applicable GROs for groundwater. Figure B-3 of the proposed ELUC should be revised to include the highest concentration of contamination detected at MW-10 for the COCs, reported as mg/L. In addition, the ELUC only applies to the Outback Property; therefore, the facility must revise Figure B-3 to clearly depict the Outback Property boundary and distinguish it from the Detrex Property boundary.

e. The final ELUC filed with the Office of the Recorder or Registrar of Titles for Cook County must include the name and address of the appropriate person the ELUC is prepared by and returned to;

f. The final ELUC filed with the Office of the Recorder or Registrar of Titles for Cook County must include a dated and notarized signature of the property owner; and

g. This letter must be attached to the final ELUC.

6. Regarding Vapor Mitigation Plan for the Outback Sales building, workplan cannot be approved at this time. It has been determined that an active venting system, rather than passive system, must be installed as a VMS at this property due to the existing soil and potential groundwater contamination in the vicinity of the site. Therefore, a revised to workplan to install an active (such as electrical powered venting fan) VMS must be submitted to Illinois EPA. In addition to the detailed description of a proposed "active" VMS, the facility must provide: (1) a diagram and/or a cross section of the proposed system including a description of each component/part to be installed; and (2) a revised cost estimate and schedule. These information required in this condition must be submitted to Illinois EPA within 45 days of the date of this letter for review and approval.

7. Regarding "Engineered Barrier Workplan", an independent licensed professional engineer shall inspect the integrity of the proposed engineered barriers, which include the existing asphalt pavement outside of the building and the concrete floor of the existing building as shown in *Attachment*. These engineered barriers shall be inspected for cracks which penetrate through the concrete/asphalt surface and for all construction to ensure the integrity of the pavement is sufficient to be established as an engineered barrier in accordance with 35 Ill. Adm. Code 742.1105. The integrity inspection and any repair, if needed, must be carried out in accordance with standards and recommendations of

professional/technical entities such as the American Concrete Institute, the Portland Cement Association the American Society for Testing and Materials, the American Society of Civil Engineers, etc. which relate to the ability of concrete and asphalt structures to prevent and/or minimize as appropriate exposure to the contaminants of concern present beneath the engineered barriers.

8. The results of the required inspection and repair, if needed, as required in Condition 7 above must be submitted to Illinois EPA in a form of a report ad be certified in accordance with 35 Ill. Adm. Code 702.126 by the engineer conducted the inspection and the owner/operator. The report must include:

   a. A detailed description of the procedures used in conducting the inspection/evaluation, including a reference to the standards and/or technical recommendations used;

   b. A detailed description of the results of the inspection;

   c. Scaled drawings showing the locations of all cracks and construction joins observed during the investigation;

   d. Conclusions reached regarding any cracks or construction joins observed during the inspection. This must included any identified cracks or defects that need repair;

   e. Descriptions of any repairs provided for the defects found in the engineered barrier;

   f. Justification for the conclusions reached; and

   g. Photographs to support the conclusion reached. If any repair is provided, before and after photographs of the cracks/defects must be documented.

9. Within 30days of the date of completion of the installation of the vapor mitigation system at Outback property and approval of the report required in Condition 8 above, the ELUC approved herein must be fully executed, notarized and recorded in the chain of title for the subject property in the Office of the Recorder or Registrar of Titles for Cook County. The approved ELUC will not become effective until officially recorded in the chain of custody for the subject property.

10. Within 30 days after filing the approved ELUC in accordance with Condition 6 above, a certified true copy of the recorded ELUC, along with certification for the Office of the

Recorder or Registrar of Titles for Cook County that the ELUC was properly filed, must be submitted to Illinois EPA. Once the Illinois EPA receives this information and a final certification of closure it will be able to issue a final closure certification letter for this project.

11. Failure to comply with the limitations or requirements of an ELUC may result in voidance of an Illinois EPA no further action determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.

12. The limitations or requirements of the ELUC apply in perpetuity or until:

    a. The Illinois EPA issues a new no further action determination approving modification or removal of the limitation/requirement; and

    b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.

13. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new no further action determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.

    a. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 IAC 742.

    b. Any final approval by Illinois EPA of a request to release or modify an ELUC must be filed with the chain of title for the subject facility.

14. Groundwater monitoring must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

15. If free product is encountered during sampling or remediation activities, corrective action must be proposed, for Illinois EPA review and approval, for the removal of free product and contaminated groundwater.

16. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of three complete sets) must be submitted to Illinois EPA.

17. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

18. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

19. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH:bjh\101924s.doc
JKM AMB TBM

Attachment: Facility Site Map

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph. D., DABT, ARCADIS

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman

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and not the scanning or filming processes.

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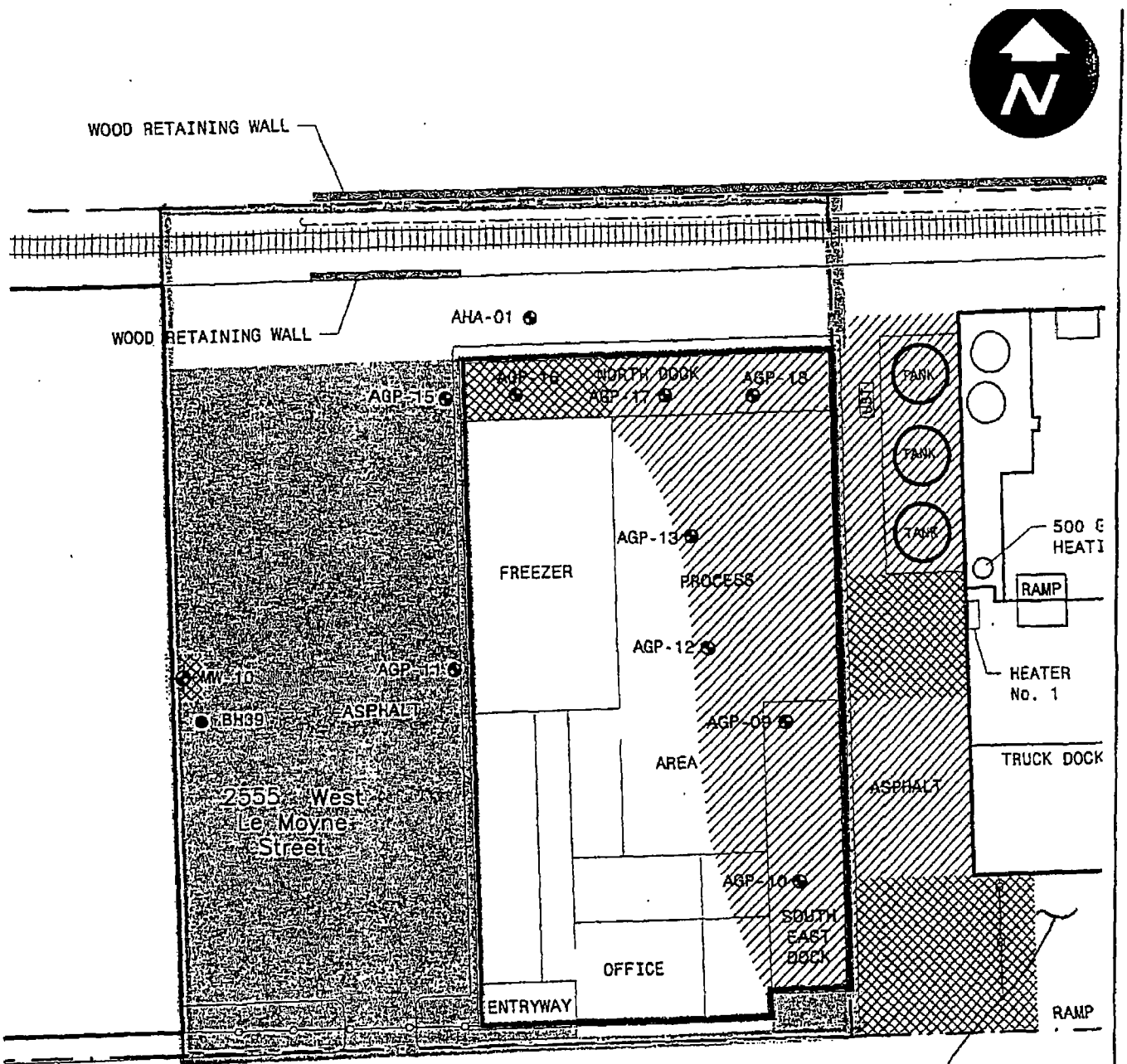

LEGEND

BUILDING FLOOR AS ENGINEERED BARRIER FOR THE SOIL INGESTION, OUTDOOR AIR INHALATION AND VAPOR INTRUSION PATHWAYS. VAPOR MITIGATION SYSTEM TO BE INSTALLED (LOCATIONS AND SPECIFICATIONS TO BE PROVIDED AFTER INSTALLATION)

OUTDOOR ENGINEERED BARRIER (CONCRETE OR ASPHALT) FOR THE SOIL INGESTION AND OUTDOOR AIR INHALATION PATHWAYS

SOIL IMPACTED AREA

SOIL SOURCE AREA

OUTBACK SITE PROPERTY BOUNDARY AREA

NOTES:

PARCEL ID NUMBER IS 15-04-204-015-000.

0 30 60

SCALE IN FEET

MELROSE PARK, ILLINOIS

Site Map (West of Detrex Corporation)

Outback Facility

2555 West LeMoyne Street

Melrose Park, Illinois

CITY-NOVI DIV/GROUP: DB: PIC: PM: TM: TR: PROJECT NUMBER: G:\ENVCAD\Novi\ACT\SFE04017_Detrex_Melrose-IL\site layout_1201.dwg LAYOUT: 2555_SOILSOURCEAREAS (3) SAVED: 3/11/2010 11:07 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS NOVI.CTB PLOTTED: 3/11/2010 12:08 PM BY: YARBROUGH, TOBI

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

March 9, 2011

CERTIFIED MAIL
7009 3410 0002 3807 6321

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: July 8, 2010
Log No.: B-113R-CA-16
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to a document entitled, "Corrective Measure Plan–Phase I; Addendum I-Response to Illinois Environmental Protection Agency Comments", dated July 7, 2010, submitted to Illinois EPA on behalf of Detrex Corporation (Detrex) by ARCADIS regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R). Detrex has conducted a substantial amount of investigative efforts to date as part of the corrective action program at this facility and has begun developing a corrective measures plan to address the contamination present at the facility.

A Phase I Corrective Measures Plan (CMP) was submitted in accordance with the facility's RCRA Permit and was approved by Illinois EPA with conditions and modifications on June 15, 2010 (Log No. B-113R-CA-13). In the letter to Detrex, Illinois EPA required the facility to submit additional information regarding the proposed remediation pilot testing. Detrex has proposed in the subject submittal to conduct pilot testing of two remedial techniques: High-Vacuum Vapor Extraction System and Oxidant Injection System (i.e., Oxidant Diffusion System).

The subject addendum to the CMP was reviewed as a request to modify the RCRA corrective action program at the Detrex facility is hereby approved with following conditions and modifications:

1. The facility has met the requirements of Condition 2 of the Illinois EPA's June 15, 2010 letter.

2. The facility has notified the Illinois EPA, Bureau of Land, Permit Section that Detrex has been issued a Joint Construction and Lifetime Operating Permit (Application No. 1009044; I.D. No. 031186AHX; Issued Date: December 16, 2010) by Illinois EPA, Bureau of Air, Permit Section for constructing and operating a High Vacuum Extraction System (HVES) on site.

3. The facility must commence the field activities to install the proposed remedial systems for pilot testing by June 1, 2011. As proposed in the subject submittal, the facility must submit a notification to the Illinois EPA, Bureau of Land, Permit Section, two weeks in advance of the beginning of the filed activity. The facility also must submit a proposed schedule for the proposed field activities and pilot testing prior to beginning of the installation activity.

4. Regarding installation and operation of the pilot testing system at the facility, Detrex must meet all the requirements of: (1) this letter; (2) Illinois EPA's June 15, 2010 letter (Log No. B-113R-CA-13); (3) the facility's RCRA Permit; and (4) the HVES construction and operating permit mentioned in Condition 2 above.

5. Within forty-five (45) days of receiving of soil analytical data for the post-pilot test sampling from a laboratory or completing any necessary field measurements, a report summarizing the pilot test results must be submitted to Illinois EPA for review and approval. As included in Condition 4 of Illinois EPA's June 15, 2010 letter, such report should include the following:

   a. Background information associated with the project.

   b. Scaled drawings showing the as-built pilot scale systems.

   c. A detailed description of the various components of the systems.

   d. Documentation of any soil and groundwater removed and transported during the construction and operation of the pilot tests for proper disposal.

   e. Color photographs of the field activities conducted.

   f. A summary of the all the field data collected and any necessary site/chemical specific data for the pilot tests, which should include, but not limited to, the parameters listed in Items (g) through (j) of this condition.

g. A summary of the pre- and post- pilot test soil samplings and analysis and water level measurements in vertical extraction wells.

h. A discussion of the effectiveness of the pilot study systems based upon the information such as decline in soil concentrations and vapor.

i. Records of routine maintenance conducted during the pilot tests. An inspection log must be maintained to document the results of each inspection. The information which must be documented in the log should include, but not limited to, the following:

1) Time and date of inspection;

2) Weather conditions during the inspection;

3) Temperature of the soil and ambient air;

4) Name and title of the inspector;

5) A list of all inspection points;

6) Inspection of each point inspected;

7) Check of gauges, temperature, pressure readings, and other instrumental data as applies to system equipment (e.g., individual extraction wells, inlet to the blower, air/water separator, vacuum blower inlet, heat exchanger, blower discharge, etc.) in order to verify that the system is working properly; and

8) Condition of the equipment, noting any defects and/or repair provided.

j. For the proposed high-vacuum vapor extraction system, the following pilot test information/data are essential (however not limited to) to designing the full-scale system:

1) Amount of time unit was in operation each day;

2) Extracted air flows at each of the vacuum extraction wells and combined totals;

3) Data collected to ensure vacuum is present throughout the system;

4) Extracted vapor concentrations at the individual well heads as well as for the whole system;

5) VOC extraction rates for each of the individual well as the whole system;

6) Total mass recovered for individual wellheads as well as for the whole system;

7) The results of any monitoring conducted for biological activity (CO_2 and O_2);

8) Documentation of the maximum radius of influence developed in the extraction wells; and

9) Monitoring of the temperature of injected and extracted air.

k. For the proposed Chemical Oxidation System, the following pilot test information/data are essential (however not exclusive to) to designing the full-scale system:

1) Contaminant mass;

2) Natural Organic Matter in the soil;

3) Chemical Oxygen Demand;

4) pH of Soil and/or Groundwater;

5) Hydraulic Conductivity;

6) Soil Classification;

7) Porosity of soil;

8) Groundwater Gradient;

9) Confirmation of oxidant injection concentrations, volume, and flow rate;

10) Measurement of oxidant concentration in groundwater or soil gas sample; and

11) Measurement of oxidant persistence.

l. A description of the procedures which will be used to demonstrate that remediation of the area is complete

m. The information required in this condition must be supported by scaled drawings, tables, graphical presentation, calculations, laboratory reports, etc. as necessary. Any referenced materials to support the information should be included in the report.

n. Recommendations regarding the next steps which should be taken to address the contamination present at the facility using one or two or the remedial technologies evaluated.

6. Once the pilot scale test report has been approved by Illinois EPA, the next step in the corrective measures process at this facility will be designed of a full-scale remediation system to address the contamination at the facility.

7. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

8. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH:bjh\113331s.doc
JCM

Attachment: Site Layout Map

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph. D., DABT, ARCADIS
Mark Klemmer, P.E, ARCADIS
Jackie Saling, P.E., ARCADIS

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 • (217) 782-2829
James R. Thompson Center, 100 West Randolph, Suite 11-300, Chicago, IL 60601 • (312) 814-6026

PAT QUINN, GOVERNOR

217/524-3300

July 29, 2011

CERTIFIED MAIL
7009 2820 0001 7485 1699

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

RECEIVED
AUG 02 REC'D
DETREX CORPORATION

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: May 24, 2011
Log No.: B-113R-CA-19
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to a document dated May 18, 2011,submitted to Illinois EPA by Dr. Betty Locey of ARCADIS on behalf of Detrex Corporation (Detrex) regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Illinois EPA approved a Phase I corrective measures plan (CMP) for the facility to conduct pilot testing of two remedial techniques: High-Vacuum Vapor Extraction System and Oxidant Injection System (i.e., Oxidant Diffusion System) on March 9, 2011 (Log No. B-113R-CA-16). Dr. Locey's May 18, 2011 letter was submitted to request modifications to Condition 5 of the Illinois EPA's March 9, 2011 letter regarding pilot testing parameters. The subject submittal also contained a proposed schedule for the field activities and associated reporting for the pilot testing at the site.

The subject submittal was reviewed by Illinois EPA as a request to modify the RCRA corrective action program at the facility and is hereby approved with following conditions and modifications:

1. The requested modifications to the field parameters to be collected for the pilot testing of the two remediation techniques are acceptable to Illinois EPA, provided that:

   a. The facility ensures that sufficient field data is collected during the pilot testing to eventually design a full-scale system if the system is found appropriate for the site as

a next step to completing the corrective measures at the facility. Such determination must be made by an independent Illinois licensed professional engineer or geologist;

b. Any modifications made to the approved plan including the modifications described in Condition 1.b above must be documented and reported to Illinois EPA in the post-pilot testing report required in Condition 5 of the Illinois EPA's March 9, 2011 letter; and

c. If any significant modifications to the approved plan for the pilot testing are to be made, the facility must submit a request to modify the approved CMP to Illinois EPA for review and approval.

2. The facility included a proposed schedule for the pilot test and reporting in the subject submittal. Although the facility has notified Illinois EPA of some changes to the proposed schedule at this time, the facility should submit the post-pilot test report required in Condition 1.c above to Illinois EPA by December 29, 2011 as proposed in the subject submittal.

3. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This action shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/mls/111731s.doc
TNH JCH AMB TBM

cc: Stephen Vasas, P.G., ARCADIS
Betty Locey, Ph. D., DABT, ARCADIS

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

RECEIVED
JAN 3 REC'D
DETREX CORPORATION

January 24, 2012

CERTIFIED MAIL
7009 3410 0002 3749 5260

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: October 18, 2011
Log No.: B-113R-CA-20
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to an October 14, 2011 submittal by Dr. Betty Locey of ARCADIS on behalf of Detrex Corporation (Detrex) regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's Renewed RCRA Permit, issued on October 9, 2003 (Log No. B-113R). Detrex has conducted a RCRA Facility Investigation at this facility and is begging to implement a corrective measures (CM) program to address the contamination present at the facility.

Illinois EPA originally approved a Phase I corrective measures plan (CMP) for the facility to conduct pilot testing of two remedial techniques: High-Vacuum Vapor Extraction (HVE) System and Oxidant Injection System (i.e., Oxidant Diffusion System) on March 9, 2011 (Log No. B-113R-CA-16). Furthermore, a modification request to the approved CMP for pilot testing was approved on July 29, 2011 (B-113R-CA-19).

The subject submittal contained information regarding pilot testing efforts completed between June 2011 and October 2011. In addition, the submittal proposed the following five modifications to the afore-mentioned approved Phase I CMP for the facility along with the explanations for each modification:

1. The original location of the pilot test in the southern portion of the facility was moved approximately seven feet north due to the field conditions;

2. The HVE well and vacuum monitoring points were installed to a greater depth than

originally proposed;

3. The oxidant infusion open boreholes were converted to wells;

4. The pilot tests were terminated prior to the proposed schedule due to ineffectiveness of the system for the site; and

5. An extension to the submittal date of a pilot test report, required in Condition 4 of Illinois EPA's March 9, 2011 letter was requested.

The subject submittal also indicated the discovery of the dense non-aqueous phase liquid (DNAPL) in the pilot testing area during the pilot testing.

The subject submittal was reviewed by Illinois EPA as a request to modify the RCRA corrective action program at the facility and is hereby approved with following conditions and modifications:

1. This letter approves the facility's five modifications made to the approved Phase I CMP, 1 through 5 listed above, and acknowledges discovery of DNAPL in the pilot test area.

2. As discussed between Detrex and Illinois EPA, the facility must submit a comprehensive pilot testing report, required in Condition 4 of the Illinois EPA's March 9, 2011 letter by March 15, 2012. This report must include, but not limited to: (1) all the information/data included in the subject submittal; (2) information required to be included in the report in the afore-mentioned Illinois EPA's March 9, 2011 letter; and (3) any additional data obtained from the post-pilot testing activities, such as information regarding discovery and analysis of DNAPL. The comprehensive report also must include: (1) an evaluation of each remedial system tested during the pilot testing; (2) conclusions, which can be reached based upon the results of the pilot tests; and (3) a discussion of the next step in completing the CM at the facility for Illinois EPA's review and approval.

3. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This letter shall constitute Illinois EPA's final decision on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this

decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH:0311860003-RCRA- CA020.docx
JGN TNH AMB

cc: Stephen Vasas, P.G., ARCADIS (electronic copy only)
Betty Locey, Ph. D., DABT, ARCADIS (electronic copy only)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

July 3, 2012

CERTIFIED MAIL
7009 3410 0002 3749 6205

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

RECEIVED
JUL 10 REC'D
DETREX CORPORATION

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: March 16, 2012
Log No.: B-113R-CA-21
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to a document, entitled "Corrective Measures Plan-Phase I Summary Report", dated March 15, 2012, submitted by Dr. Betty Locey of ARCADIS on behalf of Detrex Corporation (Detrex) regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Illinois EPA approved a Phase I corrective measures plan (CMP) for the facility to conduct pilot testing of two remedial techniques: High-Vacuum Vapor Extraction System and Oxidant Injection System (i.e., Oxidant Diffusion System) on March 9, 2011. Subsequently, modifications to the approved workplan were approved on July 29, 2011 (B-113R-CA-19) and January 24, 2012 (Log No. B-113R-CA-20). A site map is provided to this letter as an attachment.

The subject Phase I CM report summarized aforementioned pilot tests conducted for the site. In addition to the report, to help evaluate the corrective action at the facility, you sent a brief corrective action status update to Illinois EPA via electronic mail (e-mail) on June 14, 2012, per Illinois EPA's request. The subject Phase I CM report was reviewed by Illinois EPA as a request to modify the RCRA corrective action program at the facility and is hereby approved with following conditions and modifications:

1. The pilot tests of the High Vacuum Extraction (HVE) System and the Oxidant Diffusion System appear to have been conducted in the general accordance with the approved plans.

2. According to the subject report, as a result of the pilot testing of the two remedial systems, the following conclusions were reached:

   a. Due to the unanticipated field conditions at the site with silt lenses and presence of dense non-aqueous phase liquid (DNAPL) in the silt lenses, oxidant demand was high at the oxidant well that inhibited the diffusion of oxidant away from the well.

   b. For HVE system, the silt lenses and the presence of DNAPL did not affect the pilot test and was successful in removing an estimated amount of up to 125-pound per month of contaminate mass. However, due to the inconsistent site geology with tight geological formation, non-radial and inconsistent vacuum propagation is expected. Thus, the well spacing for the HVE network would have to be no more than 10 feet between extraction wells with labor intensive maintenance will be required for the system to be operable.

   In the subject report, the following five remedial options were provided as potential final corrective measure s for the site: (1) high Vacuum extraction; (2) In-Situ Soil Mixing with an Oxidant; (3) In-Situ heating; (4) Excavation; and (5) In-Situ Chemical Oxidation with Fenton's Reagent. It was indicated in the subject report that an addendum would be provided to Illinois EPA with a chosen remediation option for the site. However, your June 14, 2012 electronic mail correspondence indicated that three separate options are currently being considered for the site.

3. The facility must submit a Phase II corrective measures plan (CMP) with a final remedial design to be implemented at the site to Illinois EPA for review and approval by September 15, 2012. The Phase II corrective measures plan above shall be developed in general accordance with Attachment D.3 of the facility's RCRA permit. In addition to the requirements in the permit, the following information must also be included:

   a. A scaled site map showing the facility and the neighboring properties and their property boundaries. (each property must be clearly identified);

   b. A scaled site map with the areas of soil contamination above the remedial objectives ;

   c. A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);

   d. A scaled figure(s), which includes on-site and off-site properties showing: (1) the areas where Detrex intends to remediate; and (2) the contaminated areas found during the investigation and remediation activities where Detrex does not intend

to remediate. An explanation to Item (2) based on the actual data collected to-date must be accompanied for each area surrounding the Detrex facility.

e. An estimate of the extent and the volume of contamination present in soil above applicable remedial objectives for the project;

f. Detailed descriptions and technical background and specification information for chosen remedial method(s), which should include pros and cons of utilizing the remedial method(s);

g. Time schedule and cost estimate for the proposed remedial activity and reporting;

h. Goals and objectives of the proposed remedial efforts;

i. Criteria for evaluation of the outcome of the remedial efforts;

j. detailed technical information applicable to this project regarding all selected method(s)/option(s); and

k. descriptions of how the proposed option(s) would be effective in the site specific conditions encountered during the pilot testing (such as the tight clay geology and the presence of DNAPL, for example).

4. As documented in the subject report, dense non-aquifer phase liquid (DNAPL) was discovered during the pilot testing at the following borings in the southwestern portion of the facility: VP-3, VP-5, HVE-1, and SS-11. Future remediation workplan must also include a plan to further investigate the extent and nature of DNAPL in the vicinity of the site must be addressed. Other sampling location areas with VOCs exceeding the established soil saturation limits (C_{sat}) for the contaminates of concern (COCs) for the site must be investigated for presence of DLAPLs.

5. As it was indicated in Conditions 8 and 9 of Illinois EPA's July 9, 2009 letter to Detrex (Log No. B-113-CA-8 and 9) and Condition 3 above, the facility must clearly identifyS the area of contamination found to date which are associated/potentially associate with former releases and operation in the vicinity of the Detrex facility and in adjacent properties. Six general areas of contamination were identified in the Illinois EPA's July 9, 2009 letter. However, as the new soil sampling data has been collected, the facility must update and identify the area of contamination for further investigation and/or remediation for both soil and groundwater in the area. If further soil investigation is conducted as mentioned in your June 14, 2012 e-mail, the updated sampling results shall be included in the evaluation. This is an essential step of the corrective action project at the facility to move forward in completing the RCRA corrective action program at the facility and to be able to accomplish the goals described in Mr. Craig's June 14, 2012

electronic mail regarding the potential for the future uses of the Detrex and adjacent properties.

6. As required by Illinois EPA's July 6, 2010 letter regarding the Former Outback Facility, located adjacent west to the Detrex facility, a vapor mitigation system (VMS) and an engineered barrier must be established to remediate the area, as well as establishing an environmental land use control (ELUC) for the property, as previously required on July 6, 2010 letter. As indicated in Mr. Craig's electronic mail that he Detrex is in a process for developing a revised plan to remediate the site using a VMS and use of engineered barrier. A revised plan to conduct such remedial activities must be submitted to Illinois EPA by September 15, 2012.

7. The VMS to be installed at the Former Outback Facility required in Condition 6 above also must meet the following conditions:

   a. A suction pit is installed that is at least two cubic feet and extends at least six inches below of the slab;

   b. An in-line fan must be capable of achieving a static of: (1) at least 20.25" water column (WC) at the suction point; and (2) measurable vacuum at the furthest edges of the area served by the suction pit under the worst case conditions (all exhaust fans and heating systems running; during cold weather) as determined by a differential pressure reading of at least -0.003" wc below the slab;

   c. The exhaust from the VMS must not be released within ten feet of any doors or window; and

   d. A report documenting installation of the VMS must be submitted to Illinois EPA. This report maybe combined with other corrective measure activities, such as required establishment of engineered barriers at the site.

8. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This letter shall constitute Illinois EPA's final decision on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

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Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

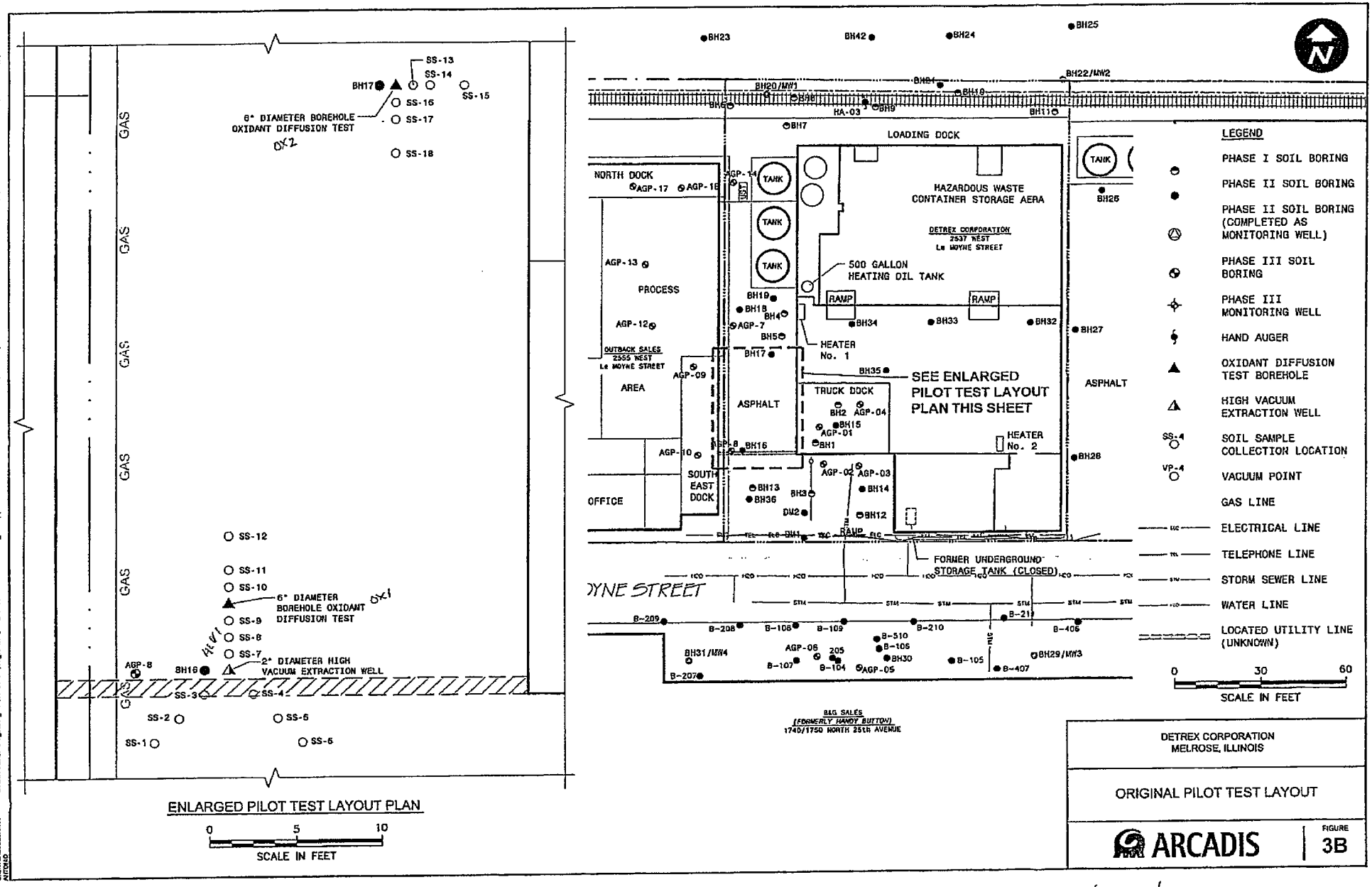
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

0311860003-RCRA-B113R-CA21.docx
TNH JKH AMB BM

Attachment: Facility Site Map

cc: Stephen Vasas, P.G., ARCADIS (electronic copy only)
Betty Locey, Ph. D., DABT, ARCADIS (electronic copy only)



Attachment
Facility Site Map
Detrex Corp.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

July 3, 2012

CERTIFIED MAIL
7009 3410 0002 3749 6205

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

RECEIVED
JUL 10 REC'D
DETREX CORPORATION

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: March 16, 2012
Log No.: B-113R-CA-21
Permit CA
RCRA - Permit

Dear Mr. Craig:

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2. According to the subject report, as a result of the pilot testing of the two remedial systems, the following conclusions were reached:

   a. Due to the unanticipated field conditions at the site with silt lenses and presence of dense non-aqueous phase liquid (DNAPL) in the silt lenses, oxidant demand was high at the oxidant well that inhibited the diffusion of oxidant away from the well.

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h. Goals and objectives of the proposed remedial efforts;

i. Criteria for evaluation of the outcome of the remedial efforts;

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k. descriptions of how the proposed option(s) would be effective in the site specific conditions encountered during the pilot testing (such as the tight clay geology and the presence of DNAPL, for example).

4. As documented in the subject report, dense non-aquifer phase liquid (DNAPL) was discovered during the pilot testing at the following borings in the southwestern portion of the facility: VP-3, VP-5, HVE-1, and SS-11. Future remediation workplan must also include a plan to further investigate the extent and nature of DNAPL in the vicinity of the site must be addressed. Other sampling location areas with VOCs exceeding the established soil saturation limits (C_{sat}) for the contaminates of concern (COCs) for the site must be investigated for presence of DLAPLs.

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   a. A suction pit is installed that is at least two cubic feet and extends at least six inches below of the slab;

   b. An in-line fan must be capable of achieving a static of: (1) at least 20.25" water column (WC) at the suction point; and (2) measurable vacuum at the furthest edges of the area served by the suction pit under the worst case conditions (all exhaust fans and heating systems running; during cold weather) as determined by a differential pressure reading of at least -0.003" wc below the slab;

   c. The exhaust from the VMS must not be released within ten feet of any doors or window; and

   d. A report documenting installation of the VMS must be submitted to Illinois EPA. This report maybe combined with other corrective measure activities, such as required establishment of engineered barriers at the site.

8. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This letter shall constitute Illinois EPA's final decision on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

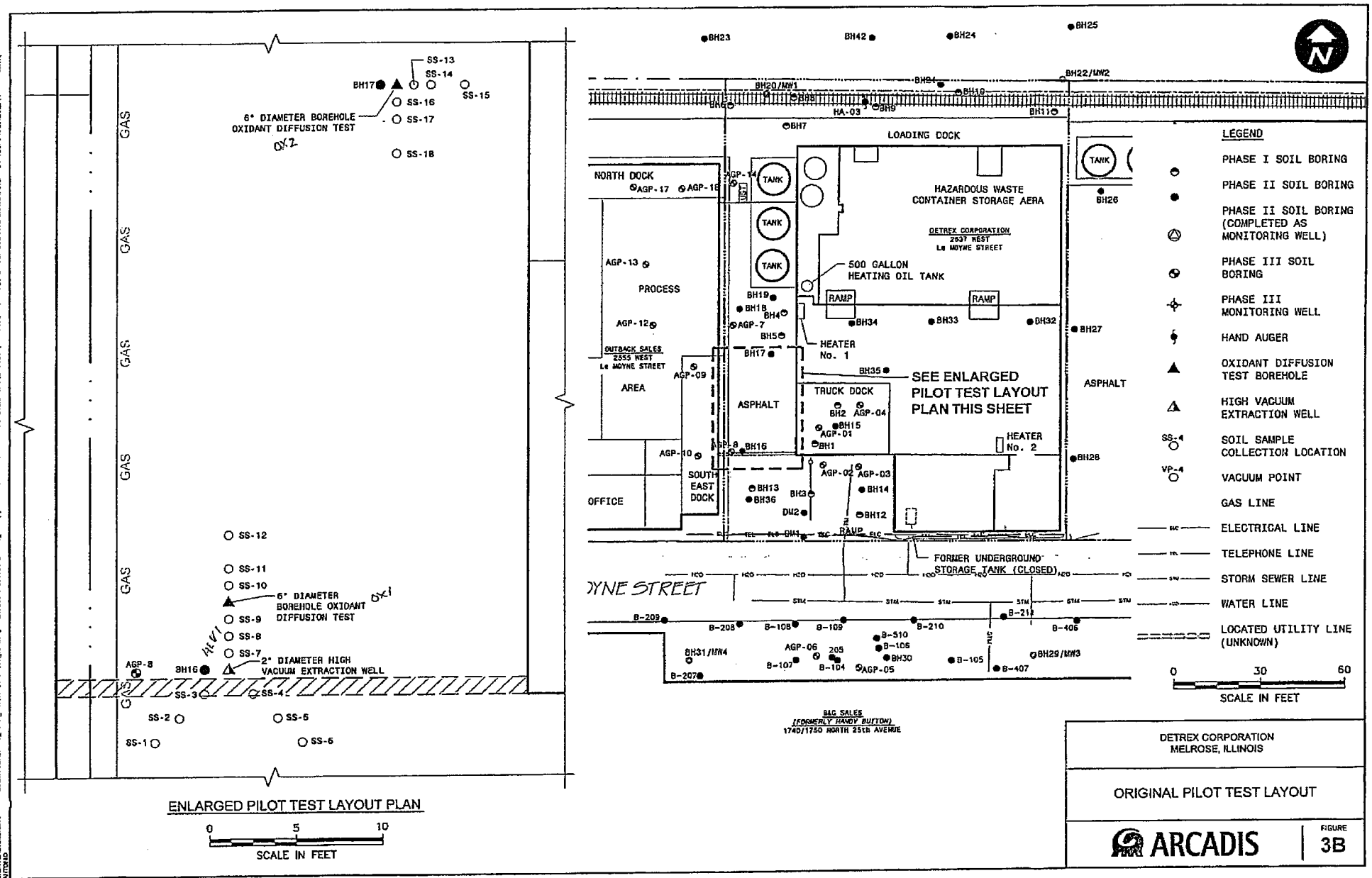
Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

0311860003-RCRA-B113R-CA21.docx
TNH JCH AMB TBM

Attachment: Facility Site Map

cc: Stephen Vasas, P.G., ARCADIS (electronic copy only)
Betty Locey, Ph. D., DABT, ARCADIS (electronic copy only)



Attachment
Facility Site Map
Detrex Corp.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

September 17, 2012

CERTIFIED MAIL
7009 3410 0002 3749 6571

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: August 3, 2012
Log No.: B-113R-CA-23
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to a document entitled, Vapor Mitigation Plan for Outback sales Building, Revision 1, dated August 1, 2012, submitted to Illinois EPA on behalf of Detrex Corporation (Detrex) by ARCADIS regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R). The subject submittal contains plan to install a vapor mitigation system (VMS) at Outback Sales at 2555 West Le Moyne Street in Melrose Park, Illinois, located adjacent to west of Detrex facility. The subject submittal was submitted to fulfill the requirement of Condition 6 of Illinois EPA's July 6, 2010 letter (Log No. B-113R-CA-14 and 15), which required Derex to submit a revised work plan for installation of an active sub-slab VMS at Outback building.

The subject workplan to install vapor mitigation system at the Outback sales property was reviewed as a request to modify the RCRA corrective action program at the Detrex facility is hereby approved with following conditions and modifications:

1. As proposed in the subject submittal, all necessary permits must be obtained and a safety workplan must be in place prior to the construction and operation of the proposed VMS at Outback property. In addition, access to the property to complete the installation and other related activities must be obtained by an appropporiate property owner or operator.

2. Conditions 7 and 8 of Illinois EPA's July 6, 2010 letter to Detrex (Log No. B-113R-CA-14 and 15) must be met regarding inspection and repair of the proposed engineered

barriers. An engineered barrier inspection and repair report that includes, but not limited to, below must be included in the corrective measures (CM) report required in Condition 3 below:

a. A detailed description of the results of the inspection;

b. Scaled drawings showing the locations of all cracks and construction joins observed during the investigation;

c. Conclusions reached regarding any cracks or construction joins observed during the inspection. This must included any identified cracks or defects that need repair;

d. Descriptions of any repairs provided for the defects found in the engineered barrier;

e. Justification for the conclusions reached;

f. Photographs to support the conclusion reached. If any repair is provided, before and after photographs of the cracks/defects must be documented; and

g. The results of the required inspection and repair, if needed, as required in Condition 7 above must be submitted to Illinois EPA in a form of a report ad be certified in accordance with 35 Ill. Adm. Code 702.126 by the engineer conducted the inspection and the owner/operator.

3. Once the VMS installation and related work described win the subject workplan and inspection and repair of the engineered barriers are complete, then in accordance with Condition 8 of the afore-mentioned July 6, 2010 letter, Detrex must submit a Corrective Measures (CM) Report to document the required activities to Illinois EPA for review and approval.

4. An environment land use control (ELUC) for Outback property must be established in accordance with 35 Ill. Adm. Code 742.1100. The specific requirements and modifications to the previously proposed draft ELUC, which was approved in Conditions 4 and 5 of the afore-mentioned Illinois EPA's July 6, 2010 letter. However, the facility is must submit a revised draft ELUC for Outback property, along with the CM Report required in Condition 3 above for Illinois EPA's review and approval. *Please note that this condition supersedes Condition 9 of Illinois EPA's July 6, 2010 letter.*

5. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring,

decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

6. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

7. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

This letter shall constitute Illinois EPA's final decision on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone

from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

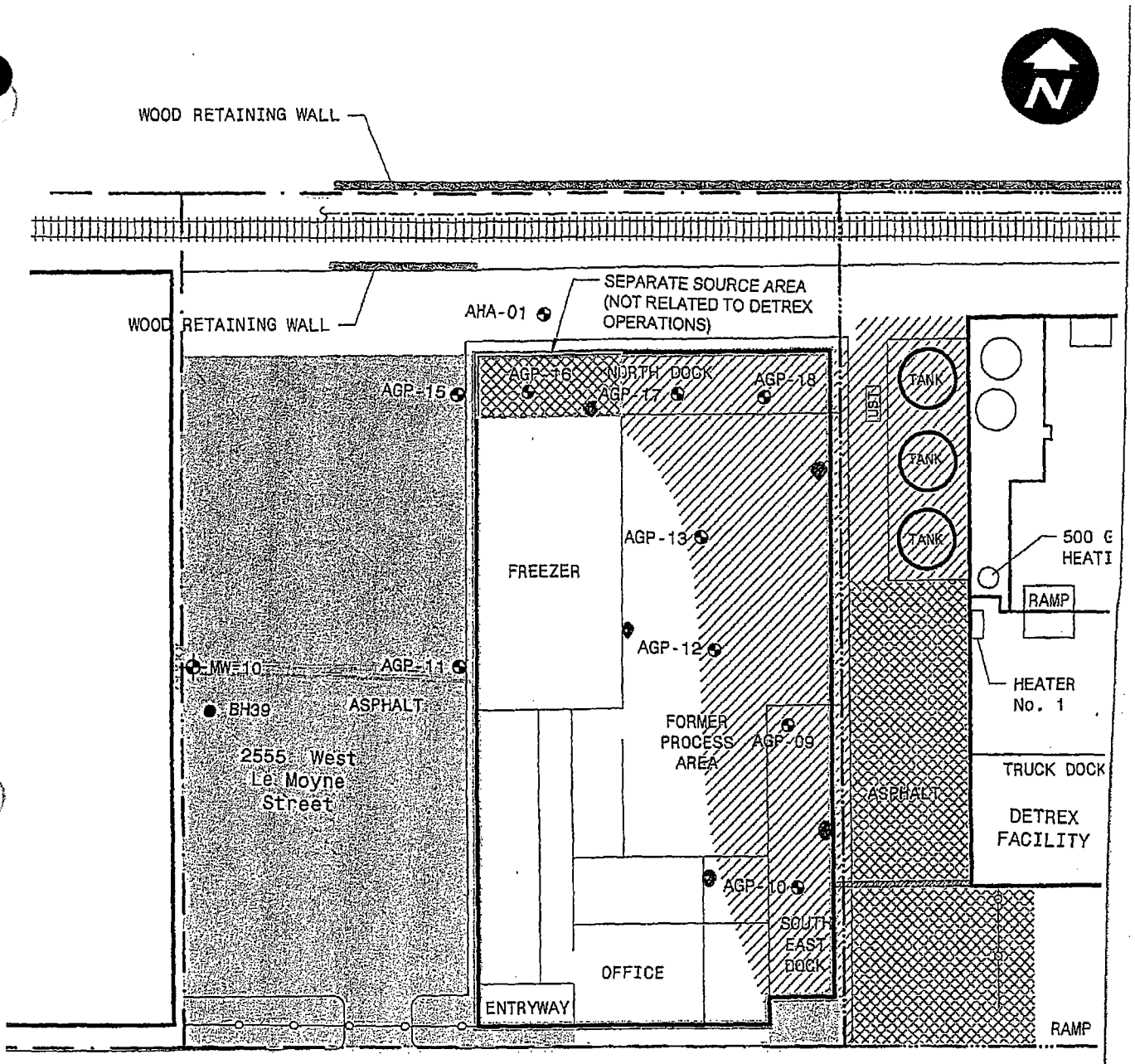
Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/0311860003-RCRA-R-CA23.docx
JKM

Attachment: Outback Site Layout Map with Engineered Barrier and VMS Pit Locations

cc: Stephen Vasas, P.G., ARCADIS (electronic copy only)
Betty Locey, Ph. D., DABT, ARCADIS (electronic copy only)

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman



LEGEND

BUILDING FLOOR AS ENGINEERED BARRIER FOR THE SOIL INGESTION, OUTDOOR AIR INHALATION AND VAPOR INTRUSION PATHWAYS. VAPOR MITIGATION SYSTEM TO BE INSTALLED (LOCATIONS AND SPECIFICATIONS TO BE PROVIDED AFTER INSTALLATION)

OUTDOOR ENGINEERED BARRIER (CONCRETE OR ASPHALT) FOR THE SOIL INGESTION AND OUTDOOR AIR INHALATION PATHWAYS

SOIL IMPACTED AREA

SOIL SOURCE AREA

OUTBACK SITE PROPERTY BOUNDARY AREA

NOTES:

PARCEL ID NUMBER IS 15-04-204-015-000.

● - Approximate Location of Vapor Extraction Pit

0 30 60

SCALE IN FEET

Attachment

Outback Sales Facility Layout

B-113R-CA-23

Detrex Corporation

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

November 26, 2012

CERTIFIED MAIL
7009 3410 0002 3749 6984

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: August 31, 2012; September 24, 2012
Log No.: B-113R-CA-24
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to the following two documents submitted to Illinois EPA: (1) your August 29, 2012 letter; and (2) an RFI workplan supplement, dated September 21, 2012, submitted by Mr. James E. Huff, P.E. of Huff & Huff, Incorporated, on behalf of Detrex Corporation (Detrex). These submittals were documents to Illinois EPA to address certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Soil and groundwater investigation of the facility and the surrounding off-site areas have been performed at the site since 1993 and to present date. Soil and groundwater contaminated with chlorinated constituents were identified in the vicinity of the facility and the adjacent properties. After extensive soil and groundwater phased investigations, a Phase I corrective measure plan (CMP) was approved to conduct a filed pilot testing of High-Vacuum Vapor Extraction System and Oxidant Injection System (i.e., Oxidant Diffusion System). However, it was concluded in a Phase I CM report that the two remedial systems evaluated, Vapor Extraction System and Oxidant Injection System, would not be appropporiate to be implemented on a full-scale basis. This CM report also included alternative potential remedial systems to be implemented on-site.

After discussions between Detrex and Illinois EPA, Illinois EPA issued an approval letter on July 3, 2012 (Log No. B-113R-CA-21), which required Detrex to submit a Phase II CM Plan with a final remedial design by September 15, 2012. Your August 29, 2012 letter included a new method of remediation and a consultant for the project were selected since submitting the afore-mentioned Phase I CM report. Therefore, you have requested an extension to the submittal of the Phase II CM workplan. According to your August 2012 letter, micro-scale Emulsified Zero

Valent Iron (EZVI) will be utilized in remediating the site, and additional data collection at the site will be conducted using Membrane Interface Probe (MIP) to help design the EZVI remedial system.

Subsequently, Mr. James Huff, P.E. of Huff & Huff, Inc. submitted a supplemental data collection workplan to Illinois EPA on September 21, 2012 on behalf of Detrex, which proposed additional data collection using a MIP. The qualitative data of the chlorinated constituents at the site collected by MIP sampling will be utilized to design the EZVI remedial system for the site. Additional soil analytical data is also proposed to be collected.

The subject submittals were reviewed by Illinois EPA as a request to modify the RCRA corrective action program at the facility and is hereby approved with following conditions and modifications:

1. Detrex must submit a Phase II CMP with a final remedial design to be implemented at the above-referenced site to Illinois EPA for review and approval by February 1, 2013.

2. The Phase II CMP required in Condition 1 above shall be developed in general accordance with Attachment D.3 of the facility's RCRA permit. In addition to the requirements in the permit, the following information must also be included:

    a. a detailed report of the additional field investigation activities approved herein and a summary of additional analytical data;

    b. an evaluation of the current conditions of the site based on the previous and newly obtained data;

    c. A scaled site map showing the facility and the neighboring properties and their property boundaries (each property must be clearly identified);

    d. A scaled site map with the areas of soil contamination above the remedial objectives;

    e. A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);

    f. A scaled figure(s), which includes on-site and off-site properties showing: (1) the areas where Detrex intends to remediate; and (2) the contaminated areas found during the investigation and remediation activities where Detrex does not intend to remediate. An explanation to Item (2) based on the actual data collected to-date must be accompanied for each area surrounding the Detrex facility.

    g. An estimate of the extent and the volume of contamination present in soil above applicable remedial objectives for the project;

h. Detailed descriptions and technical background and specification information for chosen remedial method(s), which should include pros and cons of utilizing the remedial method(s);

i. Time schedule and cost estimate for the proposed remedial activity and reporting;

j. Goals and objectives of the proposed remedial efforts;

k. Criteria for evaluation of the outcome of the remedial efforts;

l. detailed technical information applicable to this project regarding all selected method(s)/option(s); and

m. descriptions of how the proposed option(s) would be effective in the site specific conditions encountered during the pilot testing (such as the tight clay geology and the presence of DNAPL, for example).

3. Regarding the proposed supplemental data collection described in the subject September 21, 2012 submittal, the facility must meet the following:

a. An additional sampling using Membrane Interface Probe (MIP) shall be conducted at/near BH16; and

b. It was proposed that two soil samples from at a minimum of ten proposed boring locations will be collected for analysis. Soil samples must be collected, at a minimum of three locations where the proposed MIP borings where C_{sat} exceedances and/or high concentrations of chlorinated constituents were observed from the previous investigation; and

c. All soil samples collected for laboratory analysis must be analyzed for the following constituents of concern as proposed: tetrachloroethene (PCE), trichloroethylen (TCE), 1,1,1-trichloroethane, cis-1,2-dichlorethylene (cis-DCE), and vinyl chloride.

4. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of three complete sets) must be submitted to Illinois EPA.

5. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard

communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

6. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

7. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

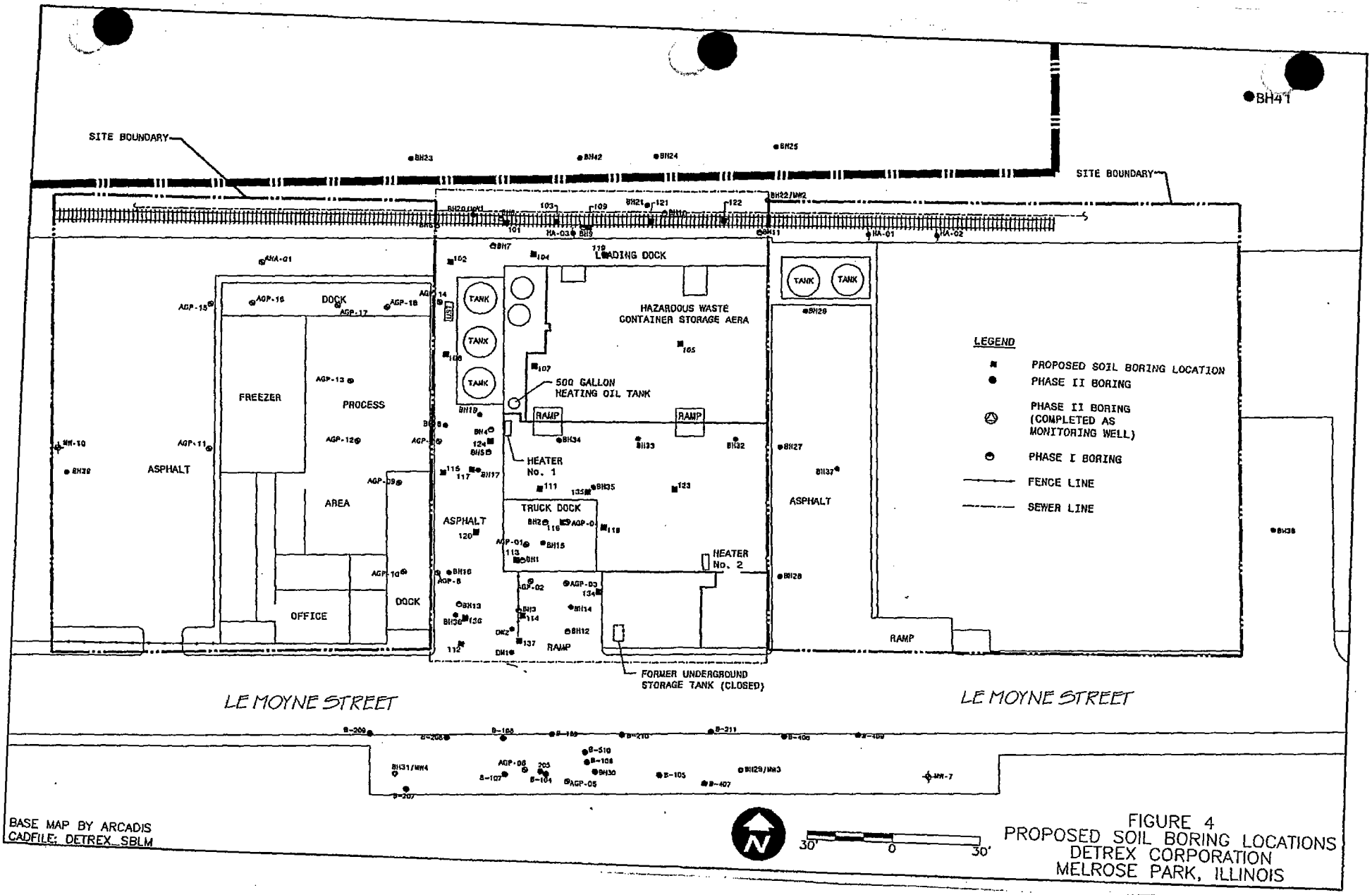
Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/ 0311860003-RCRA-B113R-CA24.docx
TNH JLK

Attachment: Facility Site Map

cc: James Huff, P.E., Huff & Huff, Incorporated

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman



BASE MAP BY ARCADIS
CADFILE: DETREX_SBLM

FIGURE 4
PROPOSED SOIL BORING LOCATIONS
DETREX CORPORATION
MELROSE PARK, ILLINOIS

Attachment
Site Map
Detrex Corp
B-113R-CA-24

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, DIRECTOR

217/524-3300

January 29, 2013

CERTIFIED MAIL
7009 3410 0002 3749 7448

Mr. David Craig
Detrex Corporation
24901 Northwestern Highway, Suite 410
Southfield, Michigan 48075

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: August 31, 2012; September 24, 2012
Log No.: B-113R-CA-24(2)
Permit CA
RCRA - Permit

Dear Mr. Craig:

Please find the attached original copy of Illinois EPA's November 26, 2012 letter (Log No. B-113R-CA-24) regarding RCRA corrective action activities at the above-referenced facility. This November 26, 2012 letter did not reflect the recent change to Detrex's mailing address. Thus, this letter is being sent to you at the current mailing address with the original copy the November 26, 2012 letter attached.

It must be noted that the required Phase II Corrective Measures Plan (CMP) for the facility should be submitted to Illinois EPA by no later than February 15, 2013, instead of February 1, 2013 as required in Condition 1 of the November 26, 2012 letter.

Should you have any questions regarding this letter, please contact Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman

SFN:TNH/ 0311860003-RCRA-B113R-CA24M1-Approval.docx
TNH JKM

Attachment: Illinois EPA's November 26, 2012 Letter

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/524-3300

November 26, 2012

CERTIFIED MAIL
7009 3410 0002 3749 6984

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: August 31, 2012; September 24, 2012
Log No.: B-113R-CA-24
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to the following two documents submitted to Illinois EPA: (1) your August 29, 2012 letter; and (2) an RFI workplan supplement, dated September 21, 2012, submitted by Mr. James E. Huff, P.E. of Huff & Huff, Incorporated, on behalf of Detrex Corporation (Detrex). These submittals were documents to Illinois EPA to address certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

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After discussions between Detrex and Illinois EPA, Illinois EPA issued an approval letter on July 3, 2012 (Log No. B-113R-CA-21), which required Detrex to submit a Phase II CM Plan with a final remedial design by September 15, 2012. Your August 29, 2012 letter included a new method of remediation and a consultant for the project were selected since submitting the afore-mentioned Phase I CM report. Therefore, you have requested an extension to the submittal of the Phase II CM workplan. According to your August 2012 letter, micro-scale Emulsified Zero

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The subject submittals were reviewed by Illinois EPA as a request to modify the RCRA corrective action program at the facility and is hereby approved with following conditions and modifications:

1. Detrex must submit a Phase II CMP with a final remedial design to be implemented at the above-referenced site to Illinois EPA for review and approval by February 1, 2013.

2. The Phase II CMP required in Condition 1 above shall be developed in general accordance with Attachment D.3 of the facility's RCRA permit. In addition to the requirements in the permit, the following information must also be included:

    a. a detailed report of the additional field investigation activities approved herein and a summary of additional analytical data;

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    e. A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);

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4. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of three complete sets) must be submitted to Illinois EPA.

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communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

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Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/ 0311860003-RCRA-B113R-CA24.docx
TNH SFN
Attachment: Facility Site Map

cc: James Huff, P.E., Huff & Huff, Incorporated

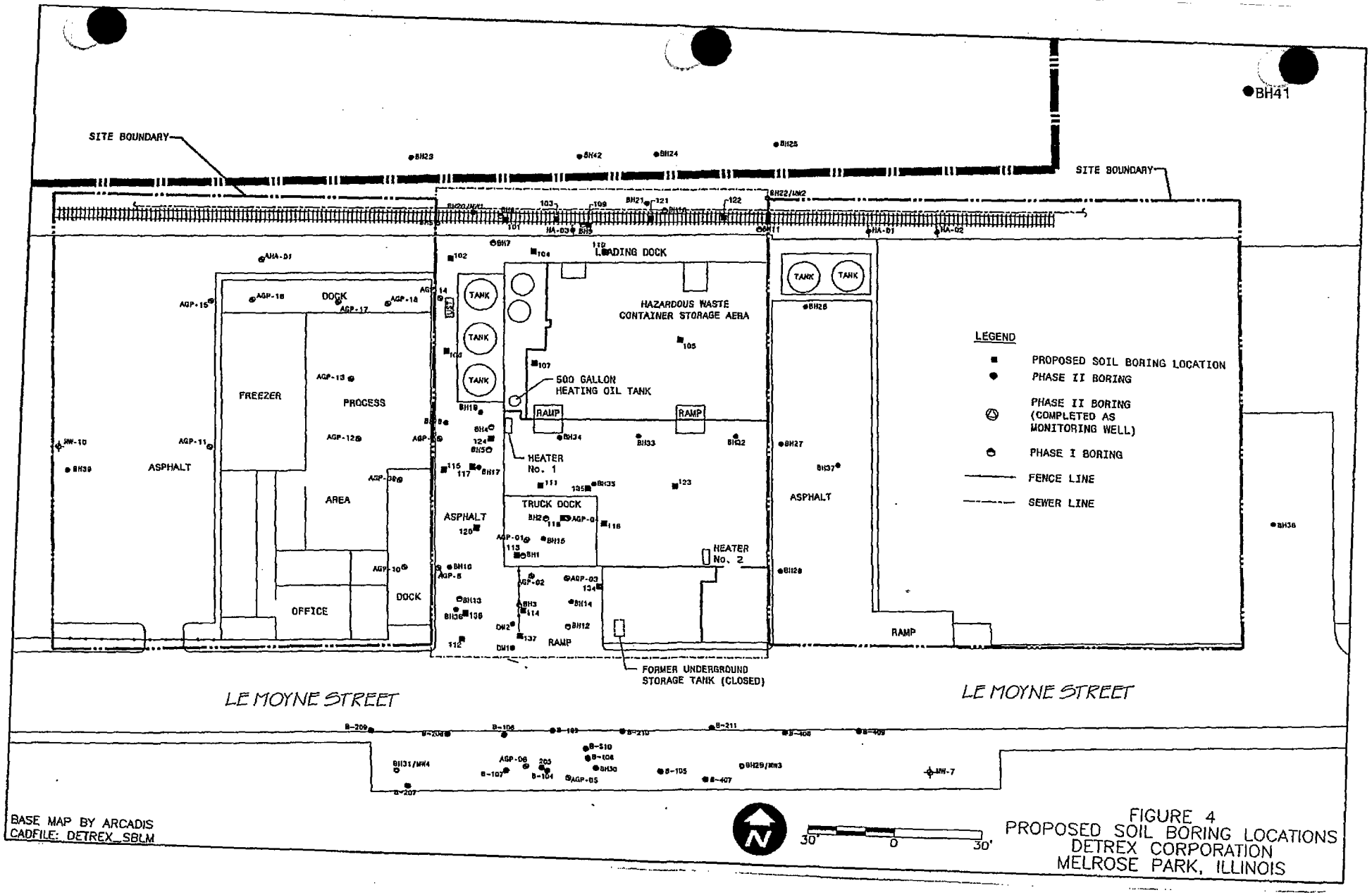


FIGURE 4
PROPOSED SOIL BORING LOCATIONS
DETREX CORPORATION
MELROSE PARK, ILLINOIS

Attachment
Site Map
Detrex Corp
B-113R-CA-24

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

217/524-3300

June 19, 2013

CERTIFIED MAIL
7012 0470 0001 2997 3611

Mr. David Craig
Detrex Corporation
24901 Northwestern Highway, Suite 410
Southfield, Michigan 48075

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: April 13, 2011; July 16, 2011
Log No.: B-113R-CA-18 and CA-22
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to two (2) documents submitted to the Illinois EPA regarding the groundwater corrective action requirements for the above referenced facility. The subject submittals were prepared and submitted on your behalf by ARCADIS. The submittals were reviewed as modification requests to the corrective action program of the facility's RCRA Renewal Permit issued October 9, 2003 (Log No. B-113R), and are listed below:

Submittal No. 1 – (Log No. B-113R-CA-18) A document entitled, "Site Investigation Completion Report", dated March 28, 2011, and received by the Illinois EPA on April 13, 2011. The March 28, 2011 submittal provides: a report on the installation of six (6) new monitoring wells; abandonment of one (1) well; a proposal for a Groundwater Management Zone (GMZ); and a proposal to exclude the groundwater ingestion pathway.

Submittal No. 2 – (Log No. B-113R-CA-22) A document entitled, "Semi-Annual Groundwater Monitoring Report, Second Quarter 2012", dated July 13, 2011, and received by the Illinois EPA on July 16, 2011. The July 13, 2011 submittal requests to remove benzene from the constituents of concern (COCs) on the groundwater monitoring list. The reports were submitted to address certain aspects of the RCRA Renewal Permit.

Soil and groundwater investigation of the facility and the surrounding off-site areas have been performed at the site since 1993 and to present date. Soil and groundwater contaminated with chlorinated constituents were identified in the vicinity of the facility and the adjacent properties. Specific to groundwater, the facility has conducted monitoring and investigation to determine the extent of contamination.

The subject submittals were reviewed by the Illinois EPA as requests to modify the groundwater portions of the RCRA corrective action program at the facility and are hereby approved with following conditions and modifications:

1. Due to the abandonment and removal of monitoring wells MW-3, MW-4, MW-6, and MW-7, they are no longer a part of the groundwater monitoring program.

2. The monitoring wells MW-11 through MW-16 have been added to the monitoring program.

3. The Illinois EPA concurs that the extent of groundwater contamination has been delineated and approves the establishment of a GMZ with the following conditions and modifications:

   a. The GMZ will be defined by wells: MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16.

   b. For any GMZ well located off-site, the facility must obtain documentation that the subject property owner acknowledges the well is designated as a GMZ well and is being used to define the effective boundary for the extent of corrective action for groundwater. Documentation must be submitted to the Illinois EPA within 120 days of the date of this letter.

   c. Groundwater monitoring at wells MW-5, MW-8, and MW-9 will not be required at this time. At this time, the wells must be maintained in accordance with 35 Ill. Adm. Code Part 920 regulations for possible sample collection if deemed necessary.

   d. The Illinois EPA requires an evaluation of a GMZ be completed a minimum of every five (5) years from the date it is established. The guidance entitled, "Re-evaluation of Groundwater Management Zones at RCRA Facilities (April 6, 2002)", must be utilized and can be found at http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/reevaluation-of-groundwater-management-zone.html.

   e. Based on the establishment of the GMZ, the program is now considered a groundwater corrective action monitoring program, rather than an interim groundwater monitoring program.

4. Benzene has been removed from the list of COCs for groundwater. Sampling for this parameter will no longer be required as of the date of this letter.

5. The request to exclude the groundwater pathway in accordance with 35 Ill. Adm. Code 742.925 cannot be approved, at this time. The Illinois EPA has identified areas where Csat limits are exceeded. The facility must meet the requirements of 35 Ill. Adm. Code 742.320 before exclusion of the groundwater pathway can be considered.

6. A completed RCRA Corrective Action Certification form must accompany all submittals made to the Illinois EPA regarding RCRA corrective action activities.

7. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:AMB/0311860003-RCRA-B113RCA18-B113RCA22-Approval.docx
AMB JKM

Bcc: Bureau File
Des Plaines Region
Terri Myers
Jim Moore
Takako Halteman
Amy Boley

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

217/524-3300

June 24, 2013

CERTIFIED MAIL
7012 0470 0001 2997 4700

Mr. David Craig
Detrex Corporation
24901 Northwestern Highway, Suite 410
Southfield, Michigan 48075

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: February 15, 2013
Log No.: B-113R-CA-25
RCRA Permits File
Permits CA

Dear Mr. Craig:

This is in response to a document, entitled "Phase II Corrective Measures Plan, Final Design Report and Construction Work Plan", dated February 14, 2013, submitted by Mr. James E. Huff, P.E. of Huff & Huff Incorporated on behalf of Detrex Corporation (Detrex) regarding certain aspects of the RCRA corrective action program required in the above-referenced facility's RCRA Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

The subject Phase II Corrective Measures Plan (referred to as CMP hereafter) contained: (1) the results of the membrane interface probe (MIP) investigation, which was used to detect volatile contaminants at various depths; (2) the results of additional soil sampling and analysis to better characterize the contamination; (3) a proposed additional soil and groundwater sampling effort prior to conducting the proposed remedial activities to further delineate the contamination on site; and (4) a proposed remedial strategy includes an in-situ soil mixing of the emulsified zero-valent iron with vegetable oil for the on-site soil affected by chlorinated contaminants (in both saturated and unsaturated zones). The proposed soil mixing is proposed only in the zones where the site-specific soil saturation limits (C_{sat}) of chlorinated contaminants of concern were exceeded.

Illinois EPA reviewed the subject CMP as a request to modify the RCRA corrective action program at the facility. In general, the Illinois EPA feels the remedial concepts set forth in the CMP are viable. However, the subject CMP cannot be approved at this time for the following reasons:

1. It is premature for Illinois EPA to approve the actual extent of the area of soil remediation prior to reviewing the results of the additional soil sampling/analysis effort

discussed in the CMP. Thus, the proposed areas and depths of the remediation proposed in Figures 2-12 and 3-1 and Table 2-4 cannot be approved at time. The proposed treatment area and extent must be re-evaluated after the additional sampling results are obtained and evaluated.

2. During the proposed remedial activities, Detrex must develop a plan to install a temporary fencing and a warning system to ensure that no personnel enter the remediation zone without the appropriate OSHA training and also to keep any trespassers off the site during off-hours. Such fencing and warning system must be present until such time that Detrex completes the remediation activities and establishes a proper engineered barrier.

3. It must be made clear that for any area outside of the Detrex's property boundaries, Tier 1 remediation objectives in 35 Ill. Adm. Code 742 (TACO) must be met to consider the remediation is complete. If levels exceeding Tier 1 ROs are found for any COCs for any exposure route, Detrex must address the contamination by first assessing the characteristics and extent of the contamination in adjoining properties and then properly addressing the contaminations.

4. In the subject CMP, the site-specific C_{sat} values approved for the site are referred to as "remediation objectives". The use of the phrase "remediation objectives" of the proposed soil treatment levels is not completely correct and causes confusion. The phrase "soil remediation goals" (SRG) should be used for the site-specific soil saturation limits that are used as the soil treatment goals while "remediation objectives" should be used when referring to Tier 1 or Tier 2 remediation objectives, if applicable.

5. The use of the site specific C_{sat} values as the soil remediation goals for the site is based on the fact that the following restrictions/conditions are met through establishing an environmental land use control (ELUC) for the property:

   a. This property will remain as industrial/commercial use only;

   b. Ingestion exposure route to groundwater is eliminated through restricting the use of groundwater in any fashion, in addition to the local ordinance prohibiting the installation of a well along with a MOU between the Village of Melrose Park and Illinois EPA;

   c. Ingestion exposure route will be eliminated via an engineered barrier (i.e., appropporiate pavement and its maintenance of the entire site);

   d. Outdoor inhalation exposure route will be eliminated with an engineered barrier as mentioned in Item c above;

e. Indoor Inhalation exposure route will be eliminated with a institutional control to require a vapor mitigation system to be installed for any types of building built on site;

f. Construction worker inhalation and ingestion exposure route will be eliminated by requiring a worker safety plan for any construction activities to be conducted at the site; and

g. Land use restrictions in Items a thorough f above must be established through an Environmental Land Use Control (ELUC) for the entire property.

It also must be noted that these restrictions are applicable to the Detrex property only. Thus, the remedial objectives that must be met outside of the property boundaries are TACO Tier 1 residential objectives. If any other off-site remedial objectives were to be considered, such as industrial/commercial ROs and/or Tier 2 objectives, Detrex must obtain a written statement indicating the property owner's intention to establish an ELUC to place appropporiate land use restrictions on the property.

6. Detrex must prepare a scaled map that clearly indicates the area of soil and groundwater contamination above the TACO Tier 1 Industrial/Commercial ingestion and inhalation remediation objectives based on the previous investigations. Detrex must submit this information along with a proposed ELUC; it must be noted that this information is required to be included in the ELUC. Please note that the groundwater ingestion remedial objective are not discussed here as Detrex has proposed to establish a Groundwater Management Zone (GMZ) at and around the Detrex site.

7. The soil at the facility which contains contaminants above C_{sat} (and thus must be remediated via an in-situ mixing process using emulsified zero-valent iron and vegetable oil) is mainly located several feet below the ground surface. As such, it is necessary to remove the "overburden" soils located above this contaminated soil so that the contaminated can be mixed with the treatment reagents. The subject CMP proposed utilization of "Staging Piles" in accordance with 40 CFR264.557 for the "overburden" soil.

In accordance with 35 Ill. Adm. Code 724.654, Detrex must do one of the following to utilize a "Staging Pile" in corrective action activities under RCRA: (1) a Class II RCRA Permit modification must be submitted to Illinois EPA to modify the corrective action section of the permit; or (2) Detrex must submit a RCRA Remedial Action Plan Permit (RAPP) to Illinois EPA for the use of the Staging Piles in the corrective action activities. However, the stockpiling of overburden soil does not meet the definition of "staging piles", provided that the soil is stock-piled within the Area of Contamination (AOC). For the Purpose of this project, the AOC is defined as the remediation area within the site. Thus, the CMP should be revised to take out any reference to Staging Piles and incorporate the use of stockpiles as discussed in Items 8 through 10 below.

8. Some of the removed "overburden soil" may contain contaminants which exceed site-specific C_{sat} concentrations. These soils must be stockpiled in a separate area from the overburden soil which contains contaminants below site-specific C_{sat} concentrations.

   a. The stockpile, which contains the soil with COCs above C_{sat} levels, can only be located in an area which has yet to be treated. All of the soil in this pile must be placed be placed back in the excavation it came from and treated.

   b. The stockpile, which does not contains any of the soil with COCs above C_{sat} levels, must be located within the Area of Contamination. The soil in the stockpile must be placed back in the excavation it came from, to the maximum extent practicable. Any excess soil may be taken to a remote area of the facility and stockpiled prior to being used in establishing the final grades for the facility. It must be noted that the entire facility must eventually be covered by an engineered barrier.

   c. All soil stockpiled during the remediation work carried out in a given cell/area must either be placed back into the excavation it came from to be transferred to the remote stockpile mentioned in Item 8 (a) above before moving on to remediation cell/area.

9. Berms must be in place to prevent any run-off from flowing into the stock pile soils and to ensure that no runoff flows from the stockpiles.

10. Prior to soil being excavated and placed in a given area, a liner system must be constructed in the area where the soil is stock piled. The liner system must be constructed as follows:

   a. A layer of 6 mil HDPE liner;

   b. At least 6" of aggregate material;

   c. Filter fabric capable of protecting the HDPE liner; and

   d. 60 mil HDPE liner (this liner should extend over the berms discussed in Condition 10 above).

   This system will: (1) ensure the stockpiles soil does not adversely impact the soil it is placed on: (2) provides a simple system for a collecting any run-off from the stockpiles; and (3) provide a straight forward boundary for determining what soil came from a given excavation. It must be noted that the components of the liner system can be re-used again and again during the project until they are no longer viable.

11. The proposed depths of the treatment zone in Table 2-4 appear to be too shallow. As the contaminated soil contains listed hazardous wastes, Detrex must take a conservative

approach when defining the treatment zone. For example, at the rail road spur on the north end of the property, the proposed remediation depths for Cells A4, A5, and A6, are 7'-9.5' bgs, 6'-9.5'bgs and 6'-9.5'bgs, respectively. The historical soil investigation indicated that high concentrations of TCE above C_{sat} were observed in shallow samples (above 6' bgs) at BH-09. Furthermore, a soil sample at 6'-8' bgs exceeded TCE C_{sat} levels (no sample was collected for analysis between 0-6') at SB-121. No other soil sample was collected at SB-121 until 12'-14' bgs, which detected COCs at low concentrations. However, the MIP result at MIP-121 shows elevated PID, FID and XSD detection levels between 10'-12' bgs . Thus, in this area, soil remediation should start at near the existing ground surface level and continue down to 12' bgs, where the soil sample confirmation exits.

Each soil remediation depth at each cell/area must be re-evaluated and included in the revised CMP. Each remediation depth for a cell (or group of cells) must be accompanied by acceptable explanation/validation in a tabular format.

12. Regarding the confirmation soil sampling proposed after the soil treatment is completed, Detrex must re-evaluate and revise the plan as necessary after the additional proposed soil sampling/analysis effort is complete. The re-evaluated/revised plan must be included in the revised CMP and submitted to Illinois EPA for review and approval. The amendments will take effect on July 15, 2013.

13. Any soil disposed off-site must be managed as hazardous waste.

As indicated above, Illinois EPA cannot approve the subject CMP, in part, because additional soil investigation efforts are necessary to fully characterize the site. Without this additional information, crucial elements of a corrective action measures plan cannot be finalized. Thus, prior to developing a revised CMP, which addresses the issues discussed above, Detrex must carry out the additional investigation effort described in the CMP subject to the following conditions and modifications:

1. From the data available thus far, it does not appear as though the horizontal extent of the COCs above the C_{sat} levels has been delineated in all directions. As indicated in the CMP, the delineation of the horizontal and vertical extent of the C_{sat} exceedance and/or dense non-aqueous phase liquid (DNAPL) requires additional investigation. The 3-D model presented in the CMP is a preliminary design model; however, it needs to be revised taking into account the additional data. The contamination above C_{sat} and/or DNAPL may extend south of SB-112; east of SB-105, north of SB-109 and SB-121, and west of SB-108 and SB-115. Additional sampling must be conducted to define the extent of C_{sat} exceedances in these areas.

2. In addition to Condition 1 above, the proposed additional soil sampling must include, at a minimum but not limited to, the following:

a. Additional soil sampling must also include the following additional borings: (1) one location approximately 15' to 20' north of proposed SB-206 boring location; (2) one location, approximately15' to 20' south of SB-206, and (3) two locations in the driveway of LaMantia property, located adjacently east of Detrex site. It was proposed in the subject CMP that Detrex would address the off-site property in a separate workplan. However, with the recent discovery of the DNAPL in several sampling locations and extremely high concentrations of chlorinated contaminants near the former hazardous waste management area, this additional investigation in the LaMantia property must be conducted. It is essential to define the degree of potential contamination in the immediate area to the east of Detrex as part of the RCRA Corrective Action program for this facility.

b. The final amendments to 35 Ill. Adm. Code 742 (TACO) regulations adding the Indoor Inhalation exposure route to the risk evaluation in TACO (Illinois Pollution Control Board (IPCB) Docket Number R11-9) was adopted by the IPCB on May 16, 2013. The amendments will take effect on July 15, 2013. Thus, Detrex must collect soil-gas samples from the western portion of the LaMantia property as a preliminary assessment in the area; the collection, analysis, and evaluation of the results associated with these samples should be conducted in accordance with the amendments to the TACO regulations.

c. Appropriately selected soil samples also must be analyzed for the COCs using the Toxicity Characteristic Leaching Procedure (TCLP) to ensure that any COCs remaining at the site do not exceed the hazardous toxicity levels established in 35 Ill. Adm. Code 742.124.

Given the above, Illinois EPA has determined that Detrex must:

- Conduct the supplemental investigation as proposed in the subject submittal, as modified above, to develop a revised CMP to satisfy the requirements in this letter;
- Submit a revised CMP to Illinois EPA by October 1, 2013; and
- Conduct RCRA corrective action activities in accordance with: (1) 35 Ill. Adm. Code 620, 725, and 742; and (2) Illinois EPA letters regarding such activities.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with

them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH: 0311860003-RCRA-B113R-CA25-Denial.docx
TNH AMB JCH

cc: James Huff, P.E., Huff& Huff, Incorporated (electronic copy only)

bcc: Bureau File
Des Plaines Region
Jim Moore
Terri Blake Myers
Amy Boley
Takako Halteman

K-3B
Correspondence to IEPA

K-3B
Correspondence to IEPA

Detrex letter Date	Description of Submittal
03.04.1993	Cover letter for Phase I RFIWP.
04.15.1993	Phase I RFIWP checklist (cover letter only).
08.06.1993	Letter clarifying conditions related to IEPA letter of 06.17.1993 and meeting of 07.23.1993.
10.27.1993	Quarterly progress report (#2) Phase I RFI Investigation.
12.10.1993	Letter confirming procedural change in implementation of the Phase I RFIWP.
01.28.1994	Quarterly progress report (#3) Phase I RFI Investigation.
02.11.1994	Confirmation of 30 day extension to submission of Phase I RFI report.
03.17.1994	Cover letter for Phase I RFI report.
03.22.1994	Certification statements for Phase I RFI report.
08.10.1994	Letter confirming extension to submission of Phase II RFIWP .
08.31.1994	Response to IEPA letter of 06.15.1994 regarding Phase II RFI investigation.
07.25.1995	Request for 90 day extension to completing the Phase II RFI investigation.
12.05.1995	Progress report from ESE on the Phase II investigation. Installation of 6 MWs and 23 soil borings.
01.06.1997	Scope of work for the Phase II Stage II RFIWP.
12.08.2003	Letter to Ms. Joyce Munie responding to B-113-CA-3 &4 requesting an extension to the submission of documents related to a hearing.
03.11.2004	Letter to Mr. Jim Moore from Mr. Stan Miles providing information to help IEPA prepare for a meeting with Detrex.
01.26.2006	Letter to Ms. Takako Halteman requesting a 60-day extension to draft responses to letter from IEPA dated 12.27.2005 (B-113-CA-5).
05.26.2006	Submission of Phase III RFIWP.
09.05.2006	Email message from IEPA to Detrex providing comments on the State 2 Phase III RFIWP.
01.23.2007	Arcadis response letter addressing IEPA's comments to the Phase III RFIWP.
12.19.2007	Letter report from Arcadis requesting a meeting with IEPA to discuss new data and approaches to closure.
10.02.2008	Letter report from Arcadis providing additional information to IEPA related to the Phase III Summary Report of May 2008.
05.12.2009	Updated water well survey table, text and figure.
08.17.2009	Letter from Arcadis to IEPA providing a list of topics to discuss during a proposed 09.15.2009 conference call.
09.08.2009	Letter report from Arcadis to IEPA requesting a meeting to further discuss IEPA 07.09.2009 letter (B-113-CA-8&9).
11.13.2009	IEPA Monitoring Well Designations memo
02.04.2010	Letter from Arcadis to IEPA requesting an eight day extension to submission of the Tier II GW evaluation for Outback Sales Property.
02.12.2010	Revised Tier II GW demonstration in response to comment 9 of IEPA letter of 12.21.2009.
03.15.2010	Response to IEPA letter of 12.21.2009.
07.26.2010	A letter from Detrex Corporation notifying IEPA of the bankruptcy of Outback Sales, located adjacent and west of Detrex facility.
10.14.2011	Letter from Arcadis to IEPA requesting a modification to the Corrective Measures Plan dated 12.15.2009.
12.29.2011	Letter from Arcadis requesting an extension to the submission of the Pilot Test Report from the operation of the Vapor extraction system.
06.14.12	Email message to Takako Halteman providing an update on corrective actions and correspondence with neighboring property owners.
08.29.2012	Letter from Detrex requesting extension to submission of the Phase II Corrective Measures Plan due to Detrex opening up the project to allow other consulting firms to provide bids.
11.20.2012	Letter from Huff and Huff notifying IEPA that they have replaced Arcadis as the consultant working on this site and to inform IEPA that MIP technology would be used to aid in the site delineation.

K-3B
Correspondence to IEPA

Detrex letter Date	Description of Submittal
06.30.13	submission of a Part B Permit Application. Submission of a letter denoting the sale of the property and all liabilities to Trex Properties, LLC

DETREX CORPORATION

P.O. Box 5111, Southfield, MI 48086-5111

FAX: (313) 358-5803

TELEPHONE: (313) 358-5800

March 22, 1994

Mr. William T. Sinnott
Illinois Environmental Protection Agency
Division of Land Pollution Control #33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

RE: Detrex Corporation
Melrose Park, Illinois
IEPA No. 0311860003
USEPA No. ILD 074 424 938

Dear Mr. Sinnott:

Enclosed are the certifications mentioned in Mr. Ed Roberts of Conestoga-Rovers & Associates letter of March 17, 1994. These certifications are by the owner/operator, analytical laboratory and independent registered professional engineer.

If there are any questions, please do not hesitate to contact me.

Sincerely,

William M. Moore, Jr.
Corporate Manager
Environmental Compliance

cc: Ed. Roberts, CRA
facility

Laboratory Certification Statement
Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Log No. B-113

Upon completion of Phase I of the RFI this statement is to be completed by both a responsible officer of the owner or operator (as defined in 35 IAC 702.126) and (2) a responsible officer (as defined in 35 IAC 702.126) of the laboratory which conducted the chemical analyses required as part of Phase I of the RFI. The original of this statement shall accompany the original certification statement for the overall Phase I activities and the RFI Phase I Report.

The applicable sample, handling, preservation, preparation and analysis conducted as part of the Phase I of the RFI at the facility described in this document has been conducted in accordance with the specifications in the approved Workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine imprisonment for knowing violations.

ILD 074424938
USEPA ID Number

Detrex Corporation, Melrose Park, IL
Facility Name

Signature of Owner/Operator Date

Ferd J. Chmielnicki, Corporate Secretary
Name and Title of Owner/Operator Representative

Recra Environmental, Inc.
Name of Laboratory

3/16/94
Signature of Laboratory Responsible Officer Date

Robert K. Wyeth, Laboratory Director
Name and Title of Laboratory Responsible Officer

Mailing Address of Laboratory:
10 Hazelwood Drive
Suite 106
Amherst, NY 14228

5222 (3)

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

August 10, 1994

Reference No. 5222

FAXED Aug 10/94

Mr. William T. Sinnott II
Illinois Environmental Protection Agency
Division of Land Pollution Control #33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Mr. Sinnott:

Re: Detrex Corporation Facility
Melrose Park Illinois
IEPA No. 0311860003
USEPA No. ILD 074424938

This letter serves to confirm our telephone conversation today. Conestoga-Rovers & Associates (CRA) on behalf of Detrex Corporation (Detrex), requested that Illinois Environmental Protection Agency (IEPA) grant Detrex until August 31, 1994 to submit the Phase II Work Plan for the above reference facility. IEPA granted the extension until August 31, 1994.

Detrex is currently in the process of obtaining legal access agreements for adjacent properties to its facility. These are required to determine the horizontal and vertical extent of contamination. Upon receipt of signed access agreements, Detrex will notify IEPA that access has been obtained. Conversely, should an adjacent property owner refuse to sign an access agreement to allow soil borings to be completed on its property, Detrex will contact IEPA and ask for its assistance in obtaining the necessary access.

As also discussed during our telephone conversation today, the concentration units listed for the levels of concern, under Condition 7 of IEPA's June 15, 1994 letter to Detrex, should be mg/kg instead of µg/kg.

August 10, 1994

Reference No. 5222

Should you have any questions, do not hesitate to call Mr. Bill Moore of Detrex Corporation at (313) 358-5800 or the undersigned at your convenience.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P. Eng.
ER/cf/6

Encl.

c.c. Bill Moore, Detrex Corporation

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

August 31, 1994

Reference No. 5222

Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62794-9276

Dear Mr. Clay:

Re: Phase II RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
IEPA No. 0311860003
USEPA No. ILD074424938

This letter serves to provides you with written responses to your letter, dated June 15, 1994, addressed to Detrex Corporation, and also presents a RCRA Facility Investigation (RFI) Phase II Work Plan for the above referenced facility. Based on an August 10, 1994 telephone conversation between Mr. Ed Roberts of Conestoga-Rovers & Associates (CRA) and Mr. Bill Sinnott, of Illinois Environmental Protection Agency (IEPA), the IEPA granted Detrex Corporation a two week extension, until August 31, 1994, to submit the RFI Phase II Work Plan.

The remainder of this letter provides specific written responses to each of IEPA's conditions, as presented in the June 15, 1994 letter.

Condition 1

It appears that there has been a release to the environment from the 1) Waste Handling Area, 2) Fuel Spill Area, 3) Tank Car Unloading Area and 4) Potential Underground Tank Area. As such, the facility needs to develop a work plan for a Phase II Investigation. The goal of the Phase II Work Plan should be to determine the extent of soil contamination at each SWMU.

Response

A RFI Phase II Work Plan has been prepared and four copies are enclosed for IEPA review. The RFI Phase II Work Plan has been designed to determine, in conjunction with the RFI Phase I data, the extent of soil contamination at the facility and also to perform a groundwater investigation at the facility.

Condition 2

Attachment E of the Part B permit issued to the subject facility outlines the procedures that should be followed when developing a Phase II Work Plan. The Phase II investigation should be sufficient to determine the horizontal and vertical extent of soil which contains contaminants above the concentrations identified in Condition 7 below.

Response

The RFI Phase II Work Plan has been prepared in accordance with Attachment E of the Part B permit and is sufficient to determine the horizontal and vertical extent of soil which contains contaminants above concentrations identified in Condition 7. It is to be noted, as discussed below in response to Condition 7, the concentration units listed for the levels of concern, under Condition 7, should be mg/kg instead of µg/kg.

Condition 3

In the Agency's September 10, 1993, Condition 5.a informs the facility that Volatile Organic Compounds must be analyzed for by Method 8240 of SW-846. It appears as though this condition was not followed. As such, the Phase II Work Plan must provide analysis of all compounds listed in Method 8240 of SW-846.

Response

As discussed in Sections 5.2 and 5.3 of the RFI Phase II Work Plan, all samples collected for volatile organic compound analysis will be analyzed for all compounds listed in Method 8240 of SW-846.

Condition 4

Page 6 of the Phase I report states "The fuel oil tank located beneath the office area was abandoned in place in accordance with an approved closure plan. The closure plan was originally approved by the State Fire Marshall on July 19, 1986. Closure was completed in April 1991." This unit had not been identified previously as a SWMU by Detrex Corporation. With this new information in mind, it appears as though the facility should complete an SWMU Assessment Report in accordance with the Part B RCRA permit. This report should include, among other things, either (1) results of the analyses conducted on soil from around the former tank location or (2) a plan for collecting and analyzing soil samples from around the former tank location.

Response

The draft RCRA Part B permit, dated September 25, 1991, proposed by IEPA, listed the underground fuel oil tank at the facility as a SWMU (see Section III.B.4 of draft permit). Detrex Corporation provided written responses, dated November 18, 1994 to IEPA on the draft permit and subsequently provided additional information, on March 27, 1992, to the IEPA concerning closure of the above referenced tank. The final Hazardous Waste Management Permit, effective date November 4, 1992, acknowledged in the Response to Comments, that the tank was closed in accordance with the closure plan approved by the Office of the State Fire Marshall, and that this SWMU will be eliminated from the final permit (see Agency Response to Comment 2 in Final Hazardous Waste Management Permit).

Section 2.2 of the RCRA Facility Investigation Phase I Work Plan, Detrex Corporation, Melrose Park, Illinois", (RFI Phase I Work Plan) dated March 1993 identified the underground fuel oil tank located beneath the office area as a former SWMU and discussed that the SWMU was closed in accordance with an approved closure plan (as agreed to by the Agency in the final Hazardous Waste Management Permit).

Condition 5

The report uses the proposed corrective action levels set forth in the proposed 40 CFR 264, Subpart S regulations in the July 27, 1990 Federal Register in

determining whether a Phase II investigation is necessary. These proposed regulations have never been finalized, and thus it is inappropriate to use them in making this determination. The State of Illinois provided USEPA with substantial comments indicating that, for a variety of reasons, these values were much too high. It is apparent that USEPA must have realized that the proposed corrective action levels were inappropriate, as almost four years has passed and it has yet to finalize these corrective action levels. It must also be noted that the proposed action levels referenced by Detrex did not take into account the impacts such residual soil contamination would have on any underlying groundwater.

Response

Condition 5 is acknowledged, however, it should be noted that based on discussions with the "RCRA Hotline", the USEPA is currently planning on finalizing the proposed 40 CFR 264, Subpart S, Appendix A - Criteria for Action Levels, on October 25, 1994. If and when the proposed regulations are finalized it will be appropriate to consider the final corrective action levels when determining corrective action is necessary and the appropriate corrective action levels.

Condition 6

Insufficient information was provided regarding the acceptable levels of polynuclear aromatic hydrocarbons which could be left in the soil. Of special concern is the following:

a. The references in Table E.2 are not detailed enough for the Agency to obtain copies of the information being referenced;

b. The values for urban soils range several orders of magnitude in some cases. As such, it is inappropriate to use such wide ranges in evaluating the PNA labels detected in the soil at this facility. Any comparison to "typical" values should be made to site-specific background values obtained from collecting and analyzing a minimum of ten samples from areas on-site not affected by the operations of the facility.

Response

a. Table E.2, Appendix E of the RFI Phase I Report has been revised to provide a complete list of references. A copy of this appendix is included in Appendix F of the enclosed RFI Phase II Work Plan.

b. The RFI Phase II Work Plan has been designed to provide for the collection of background soil samples for PAH analyses. Due to the limited size of the facility (the building, loading/unloading dock and external tank farm occupy approximately 94 percent of the total property), background soil samples for PAH analyses will be collected off site, in the immediate vicinity of the facility (see Section 5.2.2 of RFI Phase II Work Plan).

Condition 7

Given the concerns expressed above, the Phase II investigation to be completed by Detrex should be sufficient to determine the horizontal and vertical extent of soil that contains contaminants in excess of the values set forth in the following table:

Constituent	*Level of Concern (µg/kg)*
PNAs	
Acenapthene	*42.0*
Anthracene	*210.0*
Benzo(a)anthracene	*0.013*
Benzo(a)pyrene	*0.023*
Benzo(b)fluoranthene	*0.018*
Benzo(k)fluoranthene	*0.017*
Chrysene	*0.15*
Dibenzo(a,h)anthracene	*0.03*
Fluoranthene	*28.0*
Fluorene	*28.0*
Indeno(1,2,3-c,d)pyrene	*0.043*
Naphthalene	*0.039*
Pyrene	*21.0*
Acenapthylene	*21.0*
Benzo(g,h,l)perylene	
Phenanthrene	

Halogenated Volatile Compounds (VOCs) (µg/kg)

1,1-Dichloroethane	*3.5*
1,2-Dichloroethane	*0.025*
1,1-Dichloroethene	*0.035*
cis-1,1-Dichloroethene	*0.2*
trans-1,2-Dichloroethene	*0.5*
Methylene Chloride	*0.025*
Tetrachloroethene	*0.025*
1,1,1-Trichloroethane	*1.0*
Trichlorethene	*0.025*

Response

As discussed and agreed to between Mr. Ed Roberts (CRA) and Mr. Bill Sinnott (IEPA) during a telephone call on August 10, 1994, the concentration units listed above for the levels of concern should be mg/kg instead of µg/kg. As such the RFI Phase II Work Plan has been designed to sufficiently determine the horizontal and vertical extent of soil contamination in excess of the values set forth in Condition 7, modified to reflect the correct concentration units.

Condition 8

The values set forth in Condition 7 are not the final cleanup objectives or target levels which will be used to determine if corrective action is necessary at any of the SWMUs at the subject facility. Such values will only be developed after the RFI is completed.

Response

Condition 8 is acknowledged.

Condition 9

Final soil cleanup objectives shall be established after the RFI is complete. These final objectives will determine the need for an extent of soil remediation (soil corrective action) at each SWMU.

a. *The Agency will provide the Permittee with guidance regarding the development of final cleanup objectives along with its approval of the final RFI report.*

b. *In general, the procedures to be used in developing the proposed cleanup objectives must:*

   1. *Consider the distance from the subject SWMUs to potential receptors;*

   2. *Consider incorporate the 35 III. Adm. Code 620 groundwater standards into the development of the objectives;*

   3. *Assess the potential threats the proposed objectives will have on human health and the environment;*

   4. *Contain, as necessary, a site-specific and a contaminant specific risk assessment which demonstrates that the proposed final soil cleanup objectives will not (1) allow the groundwater quality standards of 35 III. Adm. Code 620 to be exceeded or (2) pose a threat to human health or the environment.*

c. *The Permittee and the Agency shall meet prior to the time that the Permittee begins developing these objectives. The goal of this meeting will be to provide the Permittee with guidance regarding the procedure which should be followed in developing and proposing these final soil cleanup objectives.*

d. *The Agency will establish final cleanup objectives if none are proposed by the Permittee.*

e. *Final Agency action taken on the development of and establishment of these final objectives will be subject to the appeal provisions of Section 39(a) of the Illinois Environmental Protection Act.*

August 31, 1994 Reference No. 5222

Response

Condition 9 is acknowledged.

Condition 10

The fifth paragraph in Section 5.4 indicates that groundwater was encountered at depths between seven and thirteen feet below ground surface. As such, a groundwater investigation must be included in the Phase II Work Plan. The groundwater investigation portion of the Phase II Work Plan must be developed in accordance with Attachment E to the Detrex final RCRA permit.

Response

The RFI Phase II Work Plan has been designed to include a groundwater investigation developed in accordance with Attachment E of the Part B Permit.

Should you have any questions, do not hesitate to contact Mr. Bill Moore (Detrex Corporation) at 810-358-5800 or Mr. Ed Roberts at 519-884-0510.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P. Eng.
ER/mc/1

Encl.

c.c. Bill Moore, Detrex

Detrex CORPORATION
24901 NORTHWESTERN HWY • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 799-7192

December 8, 2003

Ms. Joyce Munie, P.E., Manager
ILEPA, Permit Section
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield IL 62794-9276
VIA: Certified Mail

RE: 0311860003 – Cooke County
Detrex Corporation / Melrose Park Facility
ILD 074 424 938
Log #s: B-113-CA-3; B-113-CA-4
RCRA Permit

Dear Ms. Munie:

Detrex Corporation is in receipt of your letter dated November 19, 2003 regarding the previous submissions to the FRI (Phase II Stage 2, TACO Tier I, II, & III) performed at our site in Melrose Park. We have reviewed the ILEPA's final decisions and would like to petition for a hearing with the Illinois Pollution Control Board to discuss the various comments noted in your letter. However, in order to properly prepare for that hearing we are requesting that the original 35-day period be extended to 90-days due to the longevity since these documents were originally submitted and the fact that we are now approaching years end.

I have discussed obtaining the extension with Mr. Jim Moore, Mr. Ahmad's supervisor. Under his direction this extension request is being submitted to your attention with an electronic copy sent directly to him.

Thank you in advance for your help and consideration in providing the necessary extension to the hearing before the Illinois Pollution Control Board. If you need any additional information in order to complete the request, please feel free to contact me at 248-358-5800, ext. 131.

Sincerely,

David Craig
Manager of Environmental and Safety Compliance

CC: File
S. Miles – DTRX
B. Locey – Arcadis
J. Moore – ILEPA (jim.moore@epa.sate.il.us)

CORPORATION
PO BOX 5111 • SOUTHFIELD MI 48086-5111 • (248) 358-5800 • FAX (248) 358-5803

March 11, 2004

Mr. Jim Moore
IEPA Manager, Corrective Action
RCRA Permits/Land Permits
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276
VIA: EMAIL & FACSIMILE

RE: March 16, 2004 meeting
RFI of Detrex Corporation
Melrose Park, IL

Dear Mr. Moore:

To help the ILEPA prepare for the upcoming meeting of March 16th Detrex Corporation would like to present the following synopsis of the previous investigations and an outline of items to be discussed:

1. DESCRIPTION AND HISTORY OF THE PROJECT

General History

The project to be discussed is Detrex Corporation, 2537 Lemoyne Ave., Melrose Park, Illinois, ILD 074 424 938. The facility opened in 1974 and has functioned as a solvent distributor distributing chlorinated hydrocarbons, trichloroethylene, 1,1,1-trichloroethane, perchloroethylene, and methylene chloride, and trichlorofloroethane, as a "Storage facility" for hazardous waste under the waste codes F001 and F002, and as a hazardous waste transporter.

Currently all solvent shipments are received via a concrete driveway at the loading dock located at the southeast corner of the facility, SWMU 1.
On the west side of the facility on a paved outdoor area south of the diked virgin product tank containment system a small overfill of fuel oil occurred from one of two 250 gallon above ground fuel oil tanks. This was remediated and the tanks removed, SWMU 2.
Behind the facility to the north is a rail siding. The Tank Car Unloading Area at Detrex Corporation was previously used to receive solvents via rail, SWMU 3. This rail siding was serviced by Indiana Harbor Rail Road, under an easement from the property owners on the North side of Lemoyne Ave. However, it has not been used since 1991.

An underground storage tank that was not used by the facility was found. The residue in the tank was tested and found to contain high levels of BTEX. The area was sampled and was designated, SWMU 4.
The facility is located in a section of the city that is zoned industrial and workers are likely to be the most highly exposed population on-site.

Geological Findings & Hydrogeological Data

Beneath the Facility are two stratigraphic units identified in descending order as the 1) Fill Unit, and 2) Glaciolacustrine Silt and Clay Unit.

The Fill Unit consists primarily of gravel with varying amounts of silt. The fill ranges in thickness from less than one foot to approximately five feet

The Glaciolacustrine Silt and Clay Unit (Glaciolacustrine Unit) consists primarily of fine-grained material (clay and silt) of lacustrine origin with occasional sand lenses (0.5 ft - 3 ft lenses of silty clay, sandy clay, and sand). This allows thin localized perched conditions to occur at very shallow depths in the gravelly material of the Fill Unit.

These sand lenses are isolated in nature and apparently differ with respect to groundwater transport capability. This suggests the sandy lenses within the Glaciolacustrine Unit do not exhibit vertical or lateral connection.

Based on information obtained from boring DM-2, the thickness of the Glaciolacustrine Unit was determined to be approximately 48 feet thick. The lithology and texture of the Glaciolacustrine Unit are consistent with the regional lacustrine deposits found in the Chicago Lake Plain physiographic province. Bedrock was encountered at 55 feet.

Groundwater flow rates beneath the Facility are considered low due to the inherent low hydraulic conductivity of the fine-grained deposits.

Given that the groundwater at the site occurs at a depth less than 10 feet and the hydraulic conductivity of the fine-grained soils has been determined to be less than the standard of 1.0E-04 cm/sec., as shown later in the section on soil permeability and slug tests, the Class II groundwater classification is the appropriate categorization for groundwater at the site.

Investigation history

The facility has been conducting a site investigation, starting with a phase 1, and proceeding to a phase 2 stage 1, a phase 2 stage 2, and an additional investigation to obtain site-specific information to use in a Tiered approach permitted under TACO. A TACO 2 report has been submitted summarizing much of this information. Corrected tables will be submitted.

Soil sampling included five 'on-site' areas and various off-site locations. The on-site areas are categorized as follows:

- North of the Building along the rail siding,
- West of the building, this includes the tank farm area and a former Fuel Oil storage tank that was an underground storage tank (UST).
- South of the building which included the dock area,
- East of the building that included the edge of the neighboring property - La Mantia Plastics, and
- Inside the facility that included the waste handling area.

Chemical analysis for VOCs and PAHs were performed on soil samples collected from over 49 borings with over 200 samples used to characterize the approximately 0.33 acre site. This has included the installation of six monitoring wells with samples being analyzed. Sampling data can be viewed in the previously submitted reports.

Sampling of soil on and off-site occurred on four separate occasions:

- In December of 1993, Detrex initiated the Phase I site investigation. Thirteen borings (BH1 – BH13) were installed and Thirty-Seven soil samples were taken for analysis of VOCs and/or PAHs. BH13 was installed to obtain geotechnical data regarding the vertical lithology of the site. The rail siding, tank farm and loading dock areas were the focus of the Phase I investigation.
- In September and October of 1995, a second round of sampling (Phase II –Stage 1) was conducted to further delineate the vertical and horizontal extent of contamination found on site during the Phase I. The following items were completed as part of this investigation:
  - Thirty-six borings (BH14-BH34A, BG1, & BG2) with one hundred thirty five soil samples collected for analysis of VOCs and/or PAHs.
  - Install and develop six permanent monitoring wells (MW1 – MW6).
- In February and March of 1997, the Phase II – Stage 2 was completed to gather information on conditions surrounding the site. Ten borings (BH35 – BH44) were installed and nineteen soil samples taken for analysis of VOCs and/or PAHs.
- In August of 1997, two additional borings were installed on-site to obtain data to gather geotechnical data of the soils (depth to bedrock. pH, Total Organic Carbon, porosity and permeability) at the site and to confirm the vertical delineation of BH13. Chemical analysis of soils at depth was performed to verify that the COC at the site had not migrated down to bedrock.

Data and Findings Summary

To gain a better understanding of conditions both on and off-site all of the data was arranged into the following categories for analysis.

- On-site surface soil conditions,
- On-site subsurface soil conditions,
- Off-site surface soil conditions, and
- Off-site subsurface soil conditions.

The data has been summarized, compared to screening criteria, and a Conceptual Site Model developed to analyze pathways for exposure. Further analysis to compare site-specific

conditions to risks was completed. When Tier 2 objectives were exceeded a more refined model was used to further evaluate potential risk.

A risk-based tiered approach has been pursued with a goal to protect human health and the environment while incorporating site-specific information to allow for the most cost – effective remediation action. Chemicals detected in either the soil or groundwater in concentrations that exceeded the Tier 1 screening criteria were identified as chemicals of potential concern (COPC). Acetone, carbon tetrachloride, 1-1-dichloroethene, cis-1,2-dichloroethene, methylene chloride, tetrachloroethylene, 1,1,1-trichlorethane, trichloroethylene, Benzo(a)pyrene, and dibenzo(ah)anthracene were identified as constituents of concern on-site soil. Cis-1,2-dichloroethene, tetrachloroethylene, and trichloroethylene were identified as constituents of concern for off-site soil. COPCs in groundwater include 1-1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, and methylene chloride. Certain chemicals mentioned have not been reported as managed by Detrex. A Tier 2 TACO Analysis was completed. The first step was a comparison of the maximum concentrations detected on- and off-site to the Tier 2 objectives. This reduced the number of chemicals of interest to carbon tetrachloride, tetrachloroethylene, 1,1,1-trichlorethane, trichloroethylene (on-and off-site), Benzo(a)pyrene, and dibenzo(ah)anthracene. A more refined evaluation of surface and subsurface chemical concentrations for areas that exceeded Tier 2 objectives was performed with development of media specific criteria based on a more refined analysis of site conditions. Tier 3 cleanup objectives were developed and COPCs were reduced to tetrachloroethylene and trichloroethylene on-site, and trichloroethylene off-site.

As part of Tier 1 screening required by a TACO guidance, residual contaminant concentrations were screened to default criteria of 6000 mg/kg for surface soil and 2000 mg/kg for subsurface soil for the soil attenuation capacity. A site-specific value for total organic content of the soil was developed with the average TOC being at 17,830 mg/kg, which was used to demonstrate compliance in those samples that exceeded the default criteria for soil attenuation. All samples were in compliance.

Csat calculations are being recalculated and will be resubmitted (equation S29 in Appendix C, Table A).

If conditions support it, the groundwater ingestion pathway may be eliminated. We are eliminating the groundwater ingestion pathway and the Tier 2 analysis supports this based on the following:

- The Village of Melrose Park, Cook County of Illinois, passed Ordinance NO. 321 prohibiting the use of groundwater as a potable water supply by the installation or use of potable water supply wells or by any other method, for the village of Melrose Park, County of Cook, State of Illinois, on the 24th day of November, 1997.
- On the 24th day of April, 2000 the Village of Melrose Park, Cook County, Illinois with Ordinance No. 509 established an ordinance authorizing and approving the adoption of a Memorandum of Understanding between the Village of Melrose Park and the Illinois Environmental Protection Agency in connection with establishing institutional controls

for the use of ground water as a potable water supply in the Village of Melrose Park, County of Cook, State of Illinois.

- Data collected at the site supports the conclusion that the mobility of water and solvents through the soil is likely to be slow and that there is a confining layer beneath the site that is expected to limit migration of water and contaminants. With the predominant fine-grained nature of the soils, the percent passing the #200 sieve tests are all in excess of 60% for the four samples analyzed. The confining layer and the fact that the hydraulic conductivity below the site is very low (average 7.23 cm/s), indicates a compacted region.
- Slug Testing Results
  In order to evaluate the hydraulic conductivity of the shallow groundwater unit, slug tests (or single-well response tests) were performed on monitoring wells MW-1, MW-2, MW-5, and MW-6. A potentiometric surface map of the shallow groundwater was not prepared due to the slow recharge rate.

  The data from the four slug tests were analyzed using Aqtesolve computer software. Time-drawdown data for the wells along with hydrogeologic and well construction information were input into the computer for analysis using the Bouwer-Rice Method. Analysis of the slug test data resulted in hydraulic conductivity values ranging from 1.04E-06 ft/min (2.05E-06 cm/sec) to 1.48E-06 ft/min (2.92E-08 cm/sec). The geometric mean of the four samples was determined to be 3.32E-06 ft/min (6.53E-08 cm/sec) which is within the expected range for the fine-grained lacusterine deposits present at the site.

- Permeability Testing Results
  The four samples were analyzed for hydraulic conductivity with a flexible wall permeameter in accordance with ASTM Method D 5084. Permeability test results for the two samples collected from the silty clay material in borings BH14 and BH31 were 6.60E-07 ft/min (1.30E-08 cm/sec) and 3.40E-05 ft/min (6.70E-07 cm/sec), respectively. Results for the two samples collected from the predominantly clay material in borings BH25 and BH29 were 9.64E-07 ft/min (1.90E-08 cm/sec) and 4.87E-07 ft/min (9.60 cm/sec), respectively. The geometric mean of the permeability test results was determined to be 1.80E-06 ft/min (3.55E-08 cm/sec) and shows good correlation to the geometric mean from the slug test results.
- The results from calculations using Equation R26, in Appendix C, Table C in Section 742.810 supports the issue that movement of COPCs in dissolved phase will be limited to less than twenty feet.
- A dramatic decrease in VOC concentrations occurs at depths greater than 14 ft bls
- Groundwater evaluated at the site is in the perched condition as shown in the Phase II stages 1 and 2 investigation and supported by information collected from the boring log for DM-2 as it related to the pattern of moisture content as it related to depth.

  Water levels allowed to equilibrate overnight, do not indicate a continuous water table, rather a shallow, discontinuous depth to groundwater across the site as shown by the variation in water levels recorded during the investigation.

Moisture content at depth was significantly lower than more shallow depths (50 to 53 feet, 9.2% was significantly lower than moisture content measured in the first 13 feet an average of 79.65 %)

Well Number	Depth to groundwater (FT)						depth to bottom of well (FT)	
	10/9/95	10/16/95	10/31/95	11/10/95	11/17/95	8/26/97	Nov-95	Aug-97
MW1	14.44	11.34	6.02	5.27		4.02	14.72	14.59
MW2	Dry	14.65	12.48	11.39		3.68	14.72	14.58
MW3	Dry	Dry	Dry	Dry		6.99	14.65	14.52
MW4	Dry	Dry	13.29	flooded	11.29		14.55	
MW5	7.09	4.83	4.00	3.74		3.44	14.61	17.74
MW6	4.23	4.31	3.21	flooded	2.43	5.04	14.65	9.25

NOTE: groundwater level measurements for monitoring wells MW1, MW2, and MW5 were determined on 11/10/95 due to flooding of MW4 & MW6. Groundwater level measurements for monitoring wells MW4 & MW6 were determined on 11/17/95

2. PURPOSE OF THE MEETING

To discuss comments received, data collected, risk based approach, soil attenuation, soil saturation, conceptual site model, pathways for industrial/commercial workers and for construction workers, barriers, and ELUC issues. We are hopeful your assistance will help us in decision making to move the project forward in a manner that will be positive for us.

3. ISSUES & CONCERNS

The following issues/concerns are being presented as points to be covered.

a. Examine the data looking at the data as surface soil, subsurface soil, and groundwater while considering industrial/commercial worker exposure, and construction worker exposure. Provide a Conceptual Site Model and pathway analysis.
b. Provide information on soil attenuation that shows all points meet site-specific criteria. Provide updated tables.
c. Calculations will be provided, when possible, to discuss any points of interest and will be provided to discuss the issue of soil saturation.
d. Discuss Class II groundwater classification and the elimination of groundwater as a pathway.
e. Discuss surface soil and subsurface soil issues.
f. Discuss the risk analysis approach site specific data and tables that will be updated.
g. Discuss surface points above Tier 2 and the possibility of using a barrier. Discuss possible areas for a barrier. This will include a discussion on the neighbors and the ELUC.
h. ELUC with required drawings to be discussed.

4. MEETING HOMEWORK
   The main preparation for the meeting is required to be completed by Detrex Corporation to provide materials to help you assist us.

5. AGENDA
   Proposed agenda has been stated above.

We do appreciate your granting us your valuable time and trust that this will be beneficial to both parties.

Sincerely,

Stan Miles

Environmental Science & Engineering, Inc.

December 5, 1995

Mr. William Sinnott
Corrective Action Unit
Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62794-9276

RE: Progress Report
RCRA RFI Phase II Investigation
Detrex Corp., Melrose Park, IL
ESE Project No. 559-5160

Dear Mr. Sinnott:

On behalf of Detrex Corporation, Environmental Science & Engineering, Inc. (ESE) has prepared this progress report for the above referenced project. This report presents a brief description of the investigation activities completed to date at the Melrose Park, Illinois facility.

On September 25, 1995, ESE mobilized to the site to initiate the Phase II investigation activities. From September 25 to October 3, 1995, a total of 23 soil borings were drilled and six (6) groundwater monitoring wells were installed. A total of 164 soil samples were collected from the borings and submitted for laboratory analysis for Volatile Organics (VOCs) and Polynuclear Aromatic Hydrocarbons (PAHs).

Twenty-one (21) soil borings and four (4) monitoring wells were completed at the site per the Phase II Workplan (see Figure 1 attached). The locations for the three soil borings performed inside the building (BH32 - BH34) were modified from the Workplan in order to minimize impacts to the sealed concrete floor of the Hazardous Waste Container Storage Area and reduce disruptions to site activities.

Two (2) soil borings and groundwater monitoring wells were completed off-site to assess background soil and groundwater conditions (see Figure 2). The background soil borings and monitoring wells were completed in a similar manner as the on-site borings and wells. The completion of the two background borings/wells represent a modification to the Phase II Workplan which specified the collection of 10 surface soil samples for PAH analysis. The justification for the modification was supported by the decision that "at depth" background soil samples would provide a better comparison for the "at depth" soil samples collected on-site. Additionally, the performance of the deeper background borings allowed the installation of groundwater monitoring wells within the borings so that background water quality could also be assessed.

5440 North Cumberland Avenue, Suite 111 Chicago, IL 60656 Phone (312) 693-6030 Fax (312) 693-6039

Each of the six monitoring wells were constructed of 2-inch I.D. stainless steel well material as specified in the Workplan. The wells were installed to a depth of approximately 15 feet below grade. The depth for completion of the monitoring wells was determined by allowing boring BH19 to remain open for approximately 4 days and observing the rise of groundwater within the open borehole. Field observations from boring BH19 suggested a static groundwater level of approximately nine feet below land surface.

Following installation, groundwater levels were measured in the monitoring wells. At the completion of the drilling activities on October 3, each of the six wells were determined to be dry. ESE returned to the site on October 9, 1995 and determined that the depth to groundwater in wells MW-1, BG-1 and BG-2 was 14.44, 7.09 and 4.23 feet, respectively. The remaining wells (MW-2, MW-3 and MW-4) were dry at that time.

On October 16, ESE returned to the site to assess the groundwater levels in the monitoring wells. Groundwater was measured in wells MW-1, MW-2, BG-1 and BG-2 at 11.34, 14.65, 4.83 and 4.31 feet below land surface (BLS), respectively. Wells MW-3 and MW-4, located south of the plant were found to be dry. Based on this data, ESE concluded that groundwater in background wells BG-1 and BG-2 had likely reached equilibrium, but since groundwater in the on-site wells MW-1 and MW-2 had not stabilized, groundwater samples were not collected.

On October 31, ESE again visited the site to assess groundwater levels in the monitoring wells. At that time, only well MW-3 was determined to be dry. Groundwater levels measured in wells MW-1, MW-2, MW-4, BG-1 and BG-2 were 6.02, 12.48, 13.29, 4.00 and 3.21 feet BLS, respectively. Additionally, slug tests were performed on wells MW-1 and MW-2 to assess hydraulic conductivity of the soils at the site.

On November 10, ESE returned to the site to assess groundwater levels and collect groundwater samples from those wells containing a sufficient volume of water to allow sampling. At that time, well locations MW-4 and BG-2 were flooded as a result of recent rains and could not be sampled. Also, well MW-3 was determined to be dry and was not sampled. Groundwater samples were collected from wells MW-1, MW-2 and BG-1 and submitted for VOC and PAH analysis. Groundwater levels measured in wells MW-1, MW-2 and BG-1 at the time of sampling was 5.27, 11.39 and 3.74 feet BLS, respectively.

On November 17, ESE visited the site with the purpose of collecting groundwater samples from the remaining wells. At that time, well MW-3 was dry and was not sampled. Groundwater samples were collected from wells MW-4 and BG-2 and submitted for VOC and PAH analysis. Groundwater levels measured in wells MW-4 and BG-2 at the time of sampling were 11.29 and 2.43 feet BLS, respectively.

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

March 4, 1993

Reference No. 5222

Ms. Amy Dragovisch
Illinois Environmental Protection Agency
Division of Land Pollution Control #24
Planning and Reporting Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois
U.S.A. 62794-9276

Dear Ms. Dragovisch:

Re: Detrex Corporation, Melrose Park Illinois
IEPA No. 0311860003
USEPA No. ILD 074424938

In accordance with the requirements of the Hazardous Waste Management RCRA Part B Permit for the above referenced facility, please find enclosed three (3) copies of the report entitled "RCRA Phase I Investigation Work Plan".

The report has been prepared by Conestoga-Rovers & Associates on behalf of Detrex Corporation.

Should you have any questions, do not hesitate to call Mr. Bill Moore (Detrex Corporation 313-358-5800) or the undersigned at your convenience.

Yours truly

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P.Eng.
ER/cf

Encl.

c.c. Bill Moore, Detrex Corporation
Issa Shamiyeh, Detrex Corporation
Ralph H. Markert, Detrex Corporation
Bruce Monteith, CRA

Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo. Ontario. Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

April 15, 1993

Reference No. 5222

Mr. Jim Moore
Illinois Environmental Protection Agency
Division of Land Pollution Control #24
Planning and Reporting Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois
U.S.A. 62794-9276

Dear Mr. Moore:

Re: RCRA Facility Investigation Phase I Work Plan
Detrex Corporation, Melrose Park Illinois

Pursuant to your request, Conestoga-Rovers & Associates has completed the attached checklist to assist your department in reviewing the above referenced Work Plan.

We apologize for the delay in forwarding this to you. If their are any questions, do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

for Ed Roberts, P.Eng.
ER/cf

Encl.

c.c. Bill Moore, Detrex Corporation

Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

August 6, 1993

Reference No. 5222

Mr. Jim Moore
Illinois Environmental Protection Agency
Division of Land Pollution Control #24
Planning and Reporting Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

RECEIVED
AUG 16
Detrex Corporation

Dear Mr. Moore:

Re: RCRA Facility Investigation Phase I Work Plan
Detrex Corporation, Melrose Park RFI Program

This letter serves to provide the Illinois Environmental Protection Agency (IEPA) with clarification of conditions (see IEPA approval letter dated June 17, 1993) discussed at our meeting on July 23, 1993.

Condition 1 - (last paragraph)

It was agreed that the purpose of the RFI is to document the absence or presence of hazardous waste or hazardous constituents in the groundwater, surface water sediments, soils and air from the SWMUs, however, the focus of the Phase I Work Plan is on soil. It is suggested that the first sentence on the top of Page 2 be revised as follows:

"The purpose of the activities described in the Phase I Work Plan is to 'document the absence or presence of hazardous waste or hazardous constituents in the soils' from the SWMUs listed above."

Condition 2 - (first paragraph)

It was discussed that the laboratory will not provide certification to sample collection as this would be conducted by CRA representatives. It is suggested that the fourth sentence in the first paragraph be revised as follows:

"This certification by the laboratory must address the applicable sample preservation, handling, preparation and analytical requirements set forth in this letter."

Condition 2 - (Item e)

It was agreed the qualifications that will be provided for contractor personnel (e.g. laboratory, drillers) will consist of a qualifications package for the subcontractor and not necessarily the individual performing the work. It is suggested that Condition 2.e be revised as follows:

"e. A description of the qualifications of personnel performing and directing the RFI activities and general qualification information for contractors (e.g. laboratory, drillers)."

Condition 4

As discussed the only materials managed at the Detrex Corporation facility since operations commenced in 1974 have included the following:

Perchloroethylene;
1,1,1-Trichloroethane;
Trichloroethylene;
Methylene Chloride;
Freon 113; and
Heating/Fuel oils.

With regards to the solvents, Detrex sells product solvents to clientele and also accepts spent/used solvents (F001, F002) of the same types from clientele. The waste solvents would only be managed at the Waste Handling Area (SWMU No. 1). Product solvents were managed at the Waste Handling Area and the Tank Car Unloading Area (SWMU No. 1 and No. 3). The heating/fuel oils were only managed in the former above ground tank near the Fuel Oil Spill area (SWMU No. 2) and the closed underground fuel storage tank. Although the waste solvents are also dually classified as D-series wastes, this dual classification has only recently been utilized to ensure compliance should any of the waste solvents received contain any metals. Detrex does not accept wastes that are solely classified as D-series wastes. It is suggested that the last sentence of Condition 4 be deleted.

Condition 5

It was agreed that a minimum of two soil samples, based on field observations (e.g. stained soils), will be collected in the vicinity of the potential underground tank area. It is suggested that Condition 5.b be revised as follows:

"b. One surface soil location near the standpipe of the suspected underground storage tank (SWMU No. 4). If a storage tank is found to be present, at least two samples, locations to be selected based on field conditions observed (e.g. stained soils), will be collected from a test pit(s) excavated to determine the orientation and size of the tank. Soil samples collected from this location will be analyzed for VOCs using Method 8240 and for PAHs using Method 8310 (SW-846, Third Edition)."

It was also agreed to, that in order for Detrex to demonstrate the absence of hazardous waste or hazardous constituents in the soils at SWMU No. 3, the six additional locations specified by Condition 5.c, 5.d and 5.e would be required. However, these specific locations may not be required if the presence of contamination is determined, during completion of the proposed borehole locations as specified in the Phase I Work Plan. It is suggested that Condition 5.c, 5.d and 5.e be revised and combined into one condition as follows:

"c. If it is determined during completion of boreholes BH6-93 through BH11-93, that hazardous waste or constituents are not present in the soils at SWMU No. 3, the following additional borehole locations will be required to demonstrate the absence of hazardous waste or hazardous constituents in the soils at SWMU No. 3:

- three additional locations north of the railroad tracks at SWMU No. 3;
- two additional locations south of the railroad tracks at SWMU No. 3; and
- one additional location west of Sample BH7-93 and SWMU No. 3."

Condition 6

It was discussed that depth to groundwater in vicinity of the Site is approximately ten feet. It was agreed that an attempt will be made to advance one borehole to a depth of approximately fifty feet, dependent upon the capabilities of the drilling equipment to be used. It is suggested that the first sentence of Condition 6 be revised as follows:

"An attempt will be made to advance one soil boring to a depth of fifty feet, dependent upon capabilities of drilling equipment utilized, to obtain preliminary general information about the sub-surface, geology/hydrogeology at the facility."

Condition 8

It was agreed that Condition 8 would be deleted since the focus of the Phase I Work Plan is to determine the absence or presence of hazardous waste or hazardous constituents in the soil from the SWMUs and not to define the horizontal and vertical extent of contamination, if present.

Condition 10

It was discussed that only SWMU No. 1 had a concrete surface which historically could have been exposed to a release from the SWMU. SWMU No. 2 has a new concrete surface which was placed after removal of asphalt and soils in this area and SWMU No. 3 does not have a concrete/asphalt surface. It was agreed that since the focus of the Phase I Work Plan is to determine the absence or presence of hazardous waste or hazardous constituents in the soil from the SWMUs, that the cleaning of the concrete surface within SWMU No. 1 will not be required at this time. It was also discussed that sampling conducted in the area of SWMU No. 1 will consist of a least four sample locations based on the integrity of the base. It is suggested that Condition 10 be deleted and that Condition 5.a be revised as follows:

"a. One location adjacent to the catch basin at the loading dock (SWMU No. 1) and additional locations, dependent upon base conditions observed (e.g. joints, cracks, or other defects which would potentially allow hazardous waste or hazardous constituents to migrate through the base)."

Condition 20

Condition 20 should be deleted since Section V of the RCRA Part B Permit already specifies that "Detrex shall cover the manhole located in the driveway with a polypropylene cover before loading (unloading of special waste)."

The above clarifications are intended to reflect the discussions and agreements reached during our meeting on July 23, 1993. Should you have any questions or should the clarifications not accurately represent the discussions and agreements,

August 6, 1993 Reference No. 5222

please do not hesitate to contact Ed Roberts at 519-884-0510 or Bill Moore at 315-358-5800.

This letter also serves to fulfill the requirements of the first quarterly report specified by the June 17, 1993 letter from IEPA. Detrex received the June 17, 1993 letter from IEPA on June 22, 1993. Therefore, the first quarterly reporting period is June 22, 1993 to June 30, 1993. During this period, Detrex forwarded a copy of the approval letter to CRA for their review. No other activities were completed during this reporting period. The next quarterly progress report, for the period July 1, 1993 to September 30, 1993 will be submitted to IEPA by October 31, 1993 and will be organized in a format consistent with the requirements of Condition 14.

In order to ensure that the Phase I Work Plan investigation is conducted in a timely manner, CRA has commenced preparations for performing the work while waiting for your approval or comments on the above clarifications.

Yours truly

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P.Eng.
ER/csm/1

c.c. Bill Moore (Detrex)

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

October 27, 1993

Reference No. 5222

Mr. William T. Sinnott II
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL
U.S.A. 62794-9276

NOV 0 9
Corporation

Dear Mr. Sinnott:

Re: Quarterly Progress Report Number 2
Phase I RCRA Facility Investigation
Detrex Corporation, Melrose Park, Illinois

In accordance with Condition 15 of the Approval of the RCRA Facility Investigation (RFI) Phase I Work Plan, Detrex Corporation, Melrose Park, Illinois, please find enclosed as Table 1, a summary of the RFI activities at the above referenced site for the reporting period July 1, 1993 to September 30, 1993.

If you have any questions or comments, please do not hesitate to contact Mr. Bill Moore at (313) 358-5800 or the undersigned at (519) 884-0510.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P. Eng.
ER/cf/1

Encl.

c.c. Bill Moore, Detrex

TABLE 1

SUMMARY OF ACTIVITIES
PHASE I RFI QUARTERLY PROGRESS REPORT NUMBER 2
DETREX CORPORATION, MELROSE PARK, ILLINOIS

A. Estimate of Percentage of the Investigation Completed

- Since initiation of Phase I RFI, June 22, 1993, it is estimated that 10 percent of the investigation has been completed.

B. Summary of Activities Completed During the Reporting Period

- Detrex Corporation actively pursued an access agreement for Phase I RFI activities with the property owner. It is anticipated that the access agreement will be secured in the near future.

C. Changes in Phase I RFI Work Plan Activities

- No changes in Phase I RFI Work Plan activities during this reporting period.

D. Problems Encountered

- No problems were encountered in the performance of the work of this reporting period.

E. Action to Rectify Problems

- No problems were encountered in the performance of the work of this reporting period.

F. Planned Activities for Next Reporting Period

- Commence Phase I RFI field activities in accordance with the approved Work Plan upon securement of an access agreement with the property owner. A revised schedule is presented in Figure 1, attached. As shown on the schedule, it is anticipated that Phase I RFI field activities will be completed by December 15, 1993 in accordance with the IEPA approval letter dated September 10, 1993.

G. Additional Information Requested

- No requests for additional information were received during the reporting period.

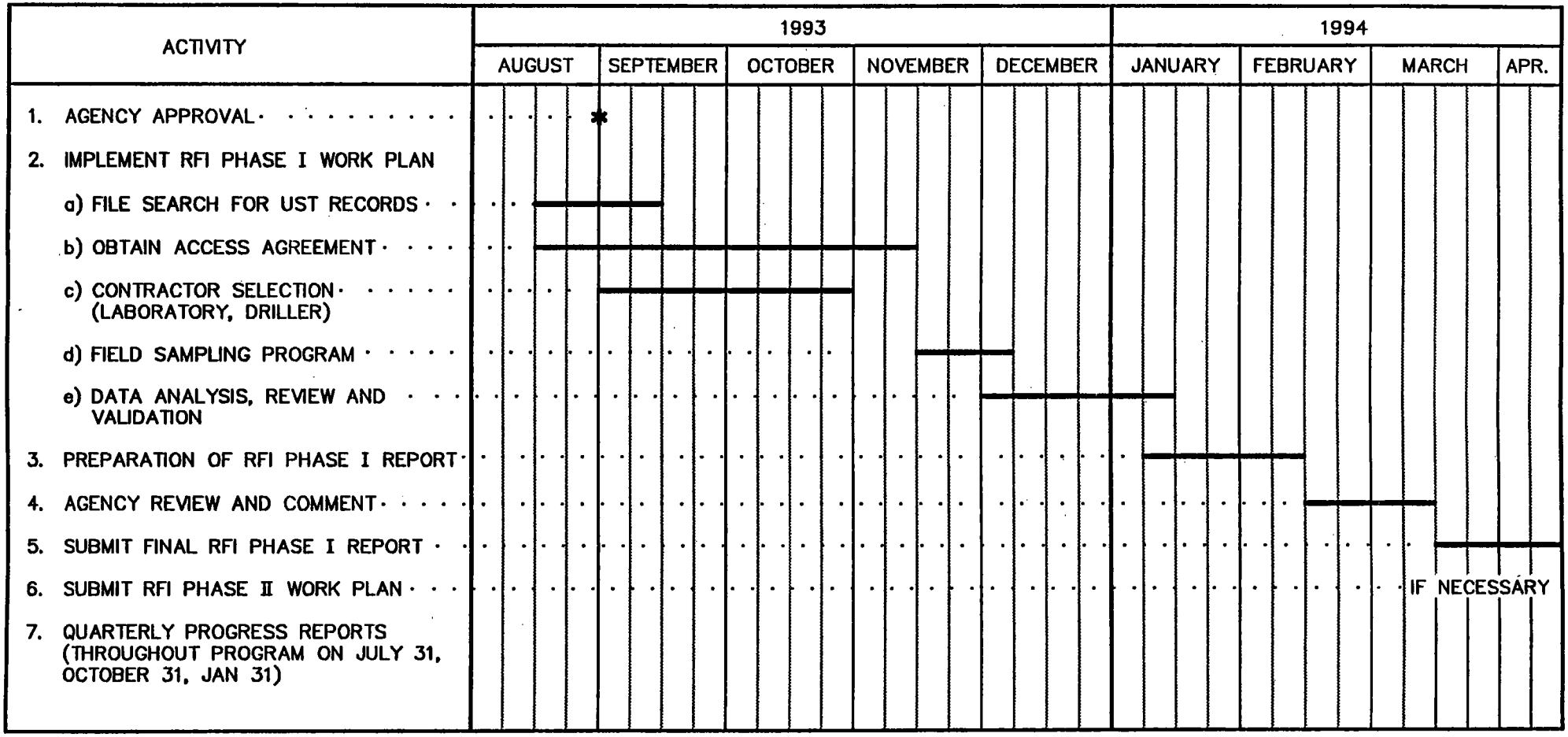


figure 1

REVISED PROJECT SCHEDULE
RFI PHASE I WORK PLAN
Detrex Corporation, Melrose Park, Il

CRA

5222 (L) OCT 27/93(W) REV.0 (S-02)

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

December 10, 1993

Reference No. 5222

Mr. William T. Sinnott II
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL
U.S.A. 62794-9276

Dear Mr. Sinnott:

Re: RCRA Facility Investigation
Detrex Corporation, Melrose Park, Illinois

This letter is provided to confirm our telephone conversation of December 9, 1993 regarding a change in procedure during implementation of the above referenced RCRA facility investigation.

As we discussed, Conestoga-Rovers & Associates commenced drilling on December 9, 1993. The initial drilling location was the single borehole advanced to a depth of 50 feet below ground surface. Based upon regional geology, it was anticipated that the water table would be encountered at a depth of approximately 8 to 10 feet below ground surface. In fact, water was not encountered during drilling the 50-foot borehole with the exception of a small moist seam at a depth of approximately 35 feet.

It was agreed during our telephone conversation that the investigative boreholes to be installed for collecting soil samples would be advanced to a depth of 10 feet or to a depth where two consecutive split-spoon samples do not indicate potential chemical presence (i.e. two consecutive non-detect head space readings using an HNu). A soil sample for chemical analysis will be collected at every third split-spoon sampling location beyond 10 feet below ground surface and/or the split-spoon sample beyond the depth of two consecutive non-detect head space readings.

Should you have any questions or comments, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P. Eng.
ER/cf/2

c.c. Bill Moore, Detrex
Terry Ashworth, CRA

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

January 28, 1994

Reference No. 5222

Mr. William T. Sinnott II
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL
U.S.A. 62794-9276

Dear Mr. Sinnott:

Re: Quarterly Progress Report Number 3
Phase I RCRA Facility Investigation
Detrex Corporation, Melrose Park, Illinois

In accordance with Condition 15 of the Approval of the RCRA Facility Investigation (RFI) Phase I Work Plan, Detrex Corporation, Melrose Park, Illinois, please find enclosed as Table 1, a summary of the RFI activities at the above referenced site for the reporting period October 1, 1993 to December 31, 1993.

If you have any questions or comments, please do not hesitate to contact Mr. Bill Moore at (313) 358-5800 or the undersigned at (519) 884-0510.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Mark Jeffrey

FOR/Ed Roberts, P.Eng.
ER/cf/3

Encl.

c.c. Bill Moore, Detrex

TABLE 1

SUMMARY OF ACTIVITIES
PHASE I RFI QUARTERLY PROGRESS REPORT NUMBER 3
DETREX CORPORATION, MELROSE PARK, ILLINOIS

A. Estimate of Percentage of the Investigation Completed

- Since initiation of Phase I RFI, June 22, 1993, it is estimated that 70 percent of the investigation has been completed.

B. Summary of Activities Completed During the Reporting Period

- Detrex Corporation secured an access agreement for Phase I RFI activities with the property owner.

- Phase I RFI field activities commenced at the Detrex Corporation Site on December 9, 1993 and were completed on December 14, 1993.

- Phase I RFI activities included the installation of twelve investigative soil borings. Subsurface soil samples for chemical analyses were collected in accordance with the RFI Work Plan. Table A.1 provides a summary of the subsurface soil sampling.

- An investigative borehole was installed to 50 feet below ground surface to obtain preliminary information of geology and hydrogeology at the site.

- A small backhoe excavator was used to determine the orientation and size of the underground storage tank (UST). One surface soil sample was collected near the standpipe of the UST and two subsurface soil samples were collected from the ends of the tank, approximately three feet below ground surface. All samples were submitted for chemical analyses. Table A.2 provides a summary of the UST soil sampling.

- The contents of the UST were sampled by removing a fitting on the standpipe of the UST. The liquid levels in the UST were measured using an oil recovery systems interface probe. A sample of the UST contents was collected for BTEX and PAH chemical analyses in accordance with the RFI Work Plan.

- Analytical data has been received from laboratory and is currently under QA/QC review.

C. Changes in Phase I RFI Work Plan Activities

- As discussed in a telephone conversation between Mr. William Sinnott and Mr. Ed Roberts on December 9, 1993 and confirmed by letter dated December 10, 1993, an attempt would be made to advance the investigative boreholes to a minimum depth of 10 feet or to a depth where two consecutive HNu readings were non-detect.

D. Problems Encountered

- No problems were encountered in the performance of the work of this reporting period.

E. Action to Rectify Problems

- No problems were encountered in the performance of the work of this reporting period.

F. Planned Activities for Next Reporting Period

- Submission of the Phase I RFI report and letters of certification by February 15, 1994 in accordance with the schedule presented in the RFI Work Plan.

G. Additional Information Requested

- No requests for additional information were received during the reporting period.

ATTACHMENT A

SAMPLING SUMMARY TABLES

TABLE A.1

INVESTIGATIVE BOREHOLE SAMPLING SUMMARY
PHASE I RFI - DETREX CORPORATION
MELROSE PARK, ILLINOIS

Borehole Location	*Depth (ft. BGS)*	*HNu (ppm)*	*Analyses*
BH1-93	1.0 - 3.0	200	Select VOC, PAH
	5.0 - 7.0	170	Select VOC, PAH
	9.0 - 11.0	100	Select VOC, PAH
	13.0 - 15.0	75	Select VOC, PAH
BH2-93	1.0 - 3.0	55	Select VOC, PAH
	7.0 - 9.0	145	Select VOC, PAH
	11.0 - 13.0	140	Select VOC, PAH
	15.0 - 17.0	2	Select VOC, PAH
	19.0 - 21.0	4	Select VOC, PAH
BH3-93	1.0 - 3.0	40	Select VOC, PAH
	5.0 - 7.0	90	Select VOC, PAH
	9.0 - 11.0	14	Select VOC, PAH
BH4-93	0.0 - 2.0	18	PAH
BH5-93	0.0 - 2.0	30	PAH
BH6-93	0.0 - 1.0	1	Select VOC
	3.0 - 5.0	9	Select VOC
BH7-93	0.0 - 1.0	1	Select VOC
	2.0 - 4.0	4	Select VOC
	6.0 - 8.0	45	Select VOC
	10.0 - 12.0	20	Select VOC
BH8-93	0.0 - 1.0	48	Select VOC
	3.0 - 5.0	110	Select VOC
	7.0 - 9.0	140	Select VOC
BH9-93	0.0 - 1.0	280	Select VOC
	3.0 - 5.0	70	Select VOC
BH10-93	0.0 - 1.0	150	Select VOC
	3.0 - 5.0	320	Select VOC
BH11-93	0.0 - 1.0	0	Select VOC
	3.0 - 5.0	2	Select VOC

TABLE A.1

INVESTIGATIVE BOREHOLE SAMPLING SUMMARY
PHASE I RFI - DETREX CORPORATION
MELROSE PARK, ILLINOIS

Borehole Location	*Depth (ft. BGS)*	*HNu (ppm)*	*Analyses*
BH12-93	1.0 - 3.0	10	Select VOC, PAH
	5.0 - 7.0	110	Select VOC, PAH
	9.0 - 11.0	2	Select VOC, PAH
	13.0 - 15.0	8	Select VOC, PAH
	17.0 - 19.0	4	Select VOC, PAH

Notes:

Select VOC - select volatile organic compounds include methylene chloride, tetrachloroethene, 1,1,1-trichloroethane, trichloroethene and freon 113.

PAH - polynuclear aromatic hydrocarbons

TABLE A.2

INVESTIGATIVE TEST PIT SAMPLING SUMMARY
PHASE I RFI - DETREX CORPORATION
MELROSE PARK, ILLINOIS

Samping Location	*Depth (ft. BGS)*	*Analyses*
UST - standpipe	0.0 - 1.0	Select VOC, PAH
UST - north end	3.0	Select VOC, PAH
UST - south end	3.0	Select VOC, PAH

Notes:

Select VOC - select volatile organic compounds include methylene chloride, tetrachloroethene, 1,1,1-trichloroethane, trichloroethene and freon 113.

PAH - polynuclear aromatic hydrocarbons

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

February 11, 1994

Reference No. 5222

Mr. William T. Sinnott II
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL
U.S.A. 62794-9276

Dear Mr. Sinnott:

Re: Phase I RCRA Facility Investigation
Detrex Corporation, Melrose Park, Illinois

Please accept this letter as confirmation of a thirty (30) day extension to the date of submission of the Phase I RCRA Facility Investigation Report for the Detrex Corporation Facility located in Melrose Park, Illinois. The original date of submission, in accordance with the schedule presented in the RFI Work Plan, was February 15, 1994.

This extension was agreed to in a telephone conversation between yourself and Mr. Mark Jeffrey of Conestoga-Rovers & Associates on Thursday, February 10, 1994.

If you have any questions, please do not hesitate to contact the undersigned at (519) 884-0510.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Mark Jeffrey

Mark Jeffrey, P.Eng.
MJ/cf/4

c.c. Bill Moore, Detrex Corporation

Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510 Colby Office Fax: (519) 884-0525
(519) 725-3313 Bathurst Office (519) 725-1394

March 17, 1994

Reference No. 5222

Mr. William T. Sinnott
Illinois Environmental Protection Agency
Division of Land Pollution Control #33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Mr. Sinnott:

Re: Detrex Corporation, Melrose Park Illinois
IEPA No. 0311860003
USEPA No. ILD 074424938

In accordance with the requirements of the Hazardous Waste Management RCRA Part B Permit for the above referenced facility, please find enclosed three (3) copies of the report entitled "RCRA Facility Investigation Phase I Report". This report has been prepared by Conestoga-Rovers & Associates on behalf of Detrex Corporation.

As discussed between yourself and Ed Roberts on March 17, 1994, Certification by the owner/operator, analytical laboratory and the independent registered professional engineer will be forwarded under separate cover early next week.

Should you have any questions, do not hesitate to call Mr. Bill Moore of Detrex Corporation at (313) 358-5800 or the undersigned at your convenience.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Ed Roberts, P.Eng.
ER/cf/5

Encl.

c.c. Bill Moore, Detrex Corporation
Issa Shamiyeh, Detrex Corporation
Ralph H. Markert, Detrex Corporation
Bruce Monteith, CRA

RFI Phase I Certification Statement

Phase I of the RCRA Facility Investigation
Detrex Corporation
Melrose Park, Illinois
Part B Log No. B-113

RFI Phase I activities at the facility described in the RFI Phase I Workplan have been completed in accordance with the specifications in the approved RFI Workplan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ILD 074424938
USEPA ID Number

Detrex Corporation, Melrose Park, IL
Facility Name

Signature of Owner/Operator Date

Ferd J. Chmielnicki, Corporate Secretary
Name and Title

Arthur S. Kurzydlo 3/15/94
Signature of Registered P.E. Date

Arthur S. Kurzydlo, Ph.D., P.E.
062 - 048537
Name of Registered P.E. and Illinois Registration Number

Mailing Address of P.E.:
Arthur S. Kurzydlo, Ph.D., P.E.
1212 S. Michigan Ave., #1007
Chicago, Illinois 60605

Registered P.E.'s Seal:

ARTHUR S. KURZYDLO
062-048537
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

5222 (3)

Detrex CORPORATION
24901 NORTHWESTERN HWY • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 799-7192

January 26, 2006

Takako Halteman
LIEPA, Permit Section
Bureau of land
1021 North Grand Ave. East
PO Box 19276
Springfield IL 62794-9276

RE: Groundwater Sampling Report
Detrex Corporation
2537 Lemoyne Ave
Melrose Park IL

Dear Ms. Halteman:

Detrex Corporation has received your letter dated December 27, 2005 regarding our Groundwater Sampling Report dated September 24, 2994. Detrex is reviewing your comments as it relates to site conditions and data already obtained; however, due to the complexity of the conditions at the site, we are requesting a 60-day extension to draft our responses. During that time period we will contact you regarding our concerns and proposed solutions, including the possibility of a meeting at your office.

Thank you in advance for your help and consideration on this project. Should you require any additional information to provide the extension, please feel free to contact either Stan Miles or myself at 317-842-2225 or 248-358-5800 ext. 131.

Sincerely,

David Craig, CHMM, CET
Manager of Environmental and Safety Compliance

Detrex CORPORATION
24901 NORTHWESTERN HWY • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 799-7192

Detrex Corporation
2263 Distributors Drive
Indianapolis, Indiana 46256

Telephone 317-241-9379 Fax 317-241-9370

May 26, 2006

Mr. James K. Moore
Manager, Corrective Action Unit
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Mr. Moore,

Enclosed you will find copies of our Work plan for the Melrose Park facility.

We would like to thank Mr. Scott Kaufman and Ms. Takako Halterman for their comments and assistance during our telephone conversations.

Detrex desires to move this project forward in the future, and has designated it as a priority project. We have appreciated you and your staffs needed assistance, and look forward to working with you on moving this project forward.

We look forward to your approval of the work plan and any additional comments that you might have.

Thank you for your time and consideration.

Should you have any questions, please feel free to contact Mr. David Craig at 248-358-5800 extension 131, or myself at 317-842-2225.

Sincerely,

Stan Miles

Comments on the Stage 2 Phase III RFI Workplan for the Detrex facility
From

Takako Halteman <Takako.Halteman@epa.state.il.us>
Date
Tuesday, September 5, 2006 17:07
To Subject

dcraig@detrex-hq.com , stan.miles@insightbb.com
Cc
Amy Boley <Amy.Boley@epa.state.il.us> , Jim Moore <Jim.Moore@epa.state.il.us> , Takako Halteman <Takako.Halteman@epa.state.il.us>

Thank you for submitting the Stage 2 Phase III RFI Workplan for the • Detrex facility. Several sampling/investigation events have already • occurred as part of corrective action efforts and your efforts have • found that the contamination at this facility is somewhat complicated. • We have completed our review on the subject workplan, which we hope to • add value to this project and move along the path of completing • corrective action at this facility. We have the following comments• regarding the Stage 2 Phase III RFI workplan:

• • Comment 1. • The proposed locations for monitoring wells are adequate at this time.• •

Comment 2.
• Due to the complex nature and history of this project, it is essential • to get a clear picture of the over-all condition of the on-site and • off-site contamination at this stage. As you know, there have been • several investigations conducted and numerous soil and groundwater• samples collected to characterized the impact at the site. The data • collected for the site has been reported to Illinois EPA in several• documents over the years. Therefore, it is suggested that the facility • should gather all the existing data that has been collected and • summarize it in one document. IEPA feels that this will be an essential• foundation for developing the future plans to effectively move forward • in premeditating the site and potentially other impacted property(s). • Such a foundation document should include, but not limited to, the • following information:• •

a. scaled site map with all SWMUs identified in the RCRA Permit and .I EPA's previous letters;
• b. scaled site map with all the previous sampling locations • identified;
Have maps showing all boring and water sampling points.
c. scaled site map with current adjacent properties shown;
check for scaled drawing for property owners.

• • d. information on the current owners of the adjacent properties • identified in (b) above;
• • e. geological and hydrogeological information in the vicinity and • surrounding properties (especially the ones that are impacted by the• contaminations from this site), which include boring logs and cross• sections;

• • f. up-to-date summary of the soil analytical tables (with • exceedance clearly identified);
• • g. scaled map(s) with contaminated soil and groundwater areas • identified based on information provided in (f) above;• •

h. information on the samples of the soil saturation limits and the • attenuation capacities exceeded;
• • i. scaled map(s) with locations of exceedance discussed in (h)• above identified;

• • j. well construction diagrams, groundwater depth/flow direction and • concentrations of contaminants in groundwater at the site and adjacent• properties (based on data collected to date); and • •
2.
k. Brief discussion(s) of any remediation taken place on the • facility in the past.
• • Please note that above list may not be a complete list to summarize the• previous investigations and any existing data that the facility may • have.

• • Comment 3
• In the workplan, the Detrex has indicated the communication between the • off-site properties will be initiated after the facility obtain the data • from this investigation so that the Detrex can discuss options with the • off-site property owners. However, it is highly suggested that • Detrex initiates communications with the adjacent properties, that are• potentially impacted by the contamination being addressed prior to this • investigation.

The main reason for the suggestion is that the facility should expand • the Phase III investigation to determine the area of impact during this • investigation. The contamination and migration of contamination in the • off-site properties is the high priority for this project and needs to• be addressed as quickly as possible. This may require accesses • permission from the surrounding properties. Also, this may alter the • locations of the samplings, etc.

• • Second, for the adjacent properties where contamination has already • been identified, the facility should be aware of the potential remedial• options for those facilities. For example, if one adjacent property is • willing to place an ELUC for the facility to specify the land use to be • limited to industrial/commercial, then the remedial objectives can be• based on Industrial/Commercial. Otherwise, the remedial objectives must • be based on residential use. Furthermore, if the facility plans to • develop Tier 2 or 3 remedial objectives based on site specific data to • meet the remedial objectives, it has to be specified in the ELUC for the• property. In other words, if the impacted adjacent property is not• willing to place an ELUC on their property, the only remedial option is • to remediate the contaminated area based on the residential objectives.

• • • Comment 4. • The facility need to define the extent of the contamination.
• Specifically, the impact of contamination to the off-site properties has • not been adequately addressed. As discussed above, it is essential for • the facility to define the impact at off-site properties. The facility • should develop an addendum workplan to

investigate the contamination at • off-site properties. IEPA understands that the communications with all • the potentially impacted properties may take time. Therefore, this plan • for the off-site properties may be submitted after the facility • initiates communications with off-site property owners. However, as • indicated in Condition 2 above, the facility should initiate the • communication and obtain access control for future investigation as soon • as possible.• •

Comment 5.
• Free product may be a concern for the facility due to the high • concentrations of COCs at the site. From the existing data, it may exist• in the area of the BH1, BH2, and BH3, where the concentrations of TCE,• PCE, and 1,1,1-TCA are as high as 7800mg/kg, 740 mg/kg, and 2900 mg/kg,• respectively. The facility should conduct additional investigation to• determine whether free-product is found in this area and other parts of • the facility.

• • Comment 6. • If the facility proposes to conduct site specific analysis for soil• attenuation limits and soil saturation limits to address the exceedance • of the default soil limits in accordance with TACO, the following • information must be provided to IEPA:

(1) the facility must re-evaluate the geology of the area under • investigation. Specifically, at each sampling location where the• default Csat and/or attenuation capacity of soil, specific soil type • must be identified for each sampling interval, where the default• objective is exceeded.

• (2) The facility may group some soil sampling locations in to areas, • where the geology/hydrogeology is identical. For off-site locations, • site specific data must be collected from, at a minimum, one or more • (depending of the size of impact) from each off-site property. • Following general areas with Csat or Attenuation Capacity limits • exceedance are found in the previous investigations:

• • a. Off-site property to the east (La Manita Plastic?): BH-27
• • b. Off-site property to the south (LeMoyne Ave- Handy Button?):• BH-30
• • c. Off-site property to the north (Ford Dealership?): BH-42
• • d. Southwestern portion of the property: BH-1, 2, 3, and 16
• • e. Northern portion of the property: BH-8, 9, and 10

• • (3) Additional soil boring should be conducted from each "area"• identified in (2). Soil samples must be collected from at min. of every • 2' and the soil sample collected from each interval must be• evaluated/analyzed for the following soil data:

• • a. Soil type;

• • b. Total organic carbon content of soil;

• • c. Soil particle density (if want to use other than default (2.65• g/cm3));• •

d. Dry soil bulk density (can use soil type or site specific);• •

e. Total soil porosity (default or soil type or site specific);

• • f. Soil Texture (in order to determine Ks, and therefore,• water-filled soil porosity w) in accordance with ASTM D2488-93 and the• figure in Appendix C, Illustration C in 35Ill. Adm. Code 742; • •

g. Concentrations of organics at additional soil sampling and • groundwater monitoring well locations and (include all organics); and• •

h. Depth to groundwater.

(4) When presenting the site specific data, all the input parameters • (filed measured, site specific from SSL or combination/calculated• values) used for each calculation must be clearly defined. Any • assumptions made must be identified and supported by a logical• explanation. All the calculations performed must be shown step by • step.• •

Final Note•

A foundation report discussed in Comment 2 above should be developed• along with a revised workplan for soil portion of the project to address • comments provided above. Please let us know if you have any questions or • would like to have a meeting to discuss our comments above. FYI, Amy• Boley is a groundwater project manager for this project.

• • • • • Takako Halteman
• Environmental Protection Engineer
• Bureau of Land, Permit Section
• Illinois Environmental Protection Agency• Tel: 217-524-3274 /Fax: 217-524-3291

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENTAL

Ms. Takako Halteman
Environmental Protection Engineer
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794-9276

Subject:
Responses to Illinois Environmental Protection Agency's Comments on the Detrex Corporation's Soil Related Phase III RFI Workplan.
Detrex Corporation, Melrose Park Facility

Date:
January 23, 2007

Contact:
Betty Locey, Ph.D., DABT

Phone:
248.994.2263

Email:
blocey@arcadis-us.com

Our ref:
SFE04017.0002

Dear Ms. Halteman;

Please find responses to the Illinois Environmental Protection Agency (IEPA) comments on the Detrex Corporation's Workplan titled "Summary of Environmental Conditions and Workplan for Detrex Corporation Facility Located in Melrose Park" attached. Responses and discussion points have been added to the original IEPA letter for clarity. Please review the responses at your convenience.

We would like to set up a conference call to discuss this material once you have had an opportunity to review it. Please feel free to contact us if you have any questions. We look forward to working with you in the future on this project.

Sincerely,

Mr. Stephen Vasas
Project Geologist

Betty J. Locey, Ph.D., DABT
Principal Scientist

Copies
Mr. Stan Miles, Detrex Corporation
Mr. David Craig, Detrex Corporation

ARCADIS
Infrastructure, environment, facilities

ARCADIS G&M of Michigan, LLC
28550 Cabot DriveSuite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley and Ms Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Request for a Meeting to Discuss Detrex Corporation Facility Located at 2537 LeMoyne Avenue in Melrose Park, Illinois

Date:
December 19, 2007

Contact:
Betty Locey, Ph.D., DABT

Phone:
284.994.2263

Email:
betty.locey@arcadis-us.com

Our ref:
SFE04017.02

Dear Ms. Boley and Ms Halteman:

ARCADIS respectfully requests a meeting with the Illinois Environmental Protection Agency (IEPA) on behalf of the Detrex Corporation (Detrex) to present new data and discuss approaches to closing on- and off-site environmental issues at their facility located on LeMoyne Ave. in Melrose Park Illinois.

Historical data and site information were summarized and submitted to IEPA in November 2006 ("Foundation Report"). Additional data has been collected since the report was prepared. These data were collected consistent with the Phase III stage 1 Workplan (groundwater work plan) submitted to IEPA in May 2006 by Detrex and in the supplemental soil work plan included in the 2006 Foundation Report (November 2007) as updated and modified in response to IEPA comments provided January 2007. Additional data were collected as listed below and summarized in the attached tables and figures.

- December 2006: Two soil borings, two monitoring wells and three hand auger borings with 10 soil samples.
- July 2007: Four soil borings, one hand auger boring (temporary well), 13 soil samples and one groundwater sample.
- April 2007: Eight soil samples, two monitoring wells and nine groundwater samples.

New soil and groundwater data has been added to summary tables prepared for the site. The additional wells provide a better understanding of apparent groundwater flow. This is summarized in an updated groundwater flow map. Cross sections have

been expanded and figures providing a summary of trichloroethylene data have been updated. New figures and tables are listed below and are attached to this letter for IEPA review. In addition, historical use of the nearby properties was reviewed and will be shared.

- Tables
  - Table 1: Summary of Soil Data
  - Table 2: Summary of Groundwater Data
  - Table 3: Water Levels
  - Table 4: Soil Data Compared to Tier 1 TACO Screening Criteria
  - Table 5: Groundwater Compared to TACO Class II Screening Criteria

- Figures
  - Figure 1: Site Layout
  - Figure 2: Updated Groundwater Flow Map
  - Figure 3: Cross Section Locations
  - Figure 4: Cross Sections A – A', B – B', C – C'
  - Figure 5: Summary of Trichloroethylene Data in Soil
  - Figure 6: Summary of Trichloroethylene Data in Surface Soil
  - Figure 7: Summary of Trichloroethylene Data in Groundwater
  - Figure 8: Summary of Historical Property Use

In addition to the data collected on behalf of Detrex, the owners of the Handy Button property, across LeMoyne Ave, collected additional samples to characterized impacts to their property with 108 samples being analyzed for VOCs of interest. This data is summarized in the enclosed tables and figures (Attachment 1) from the report prepared by Pioneer Consulting (November 2007).

Please feel free to contact us if you have questions or would like to have additional information. We look forward to meeting with you and working with you on this site.

Sincerely,

ARCADIS G&M of Michigan, LLC

Betty Locey, Ph.D., DABT
Principal Scientist/Regional Risk Coordinator

Stan Miles
Detrex Corporation

Enclosures

ARCADIS
Infrastructure, environment, facilities

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Additional Information for the Detrex Corporation Facility
Located at 2537 Le Moyne Avenue in Melrose Park, Illinois

Date:
October 2, 2008

Contact:
Betty Locey, Ph.D., DABT

Phone:
284.994.2263

Email:
betty.locey@arcadis-us.com

Our ref:
SFE04017.03

Dear Ms. Boley:

ARCADIS respectfully submits additional information requested by the Illinois Environmental Protection Agency (IEPA) on behalf of the Detrex Corporation (Detrex). This information adds to the information previously submitted in the *Phase III Summary of Environmental Conditions Report* (Phase III Report) submitted to IEPA in May 2008. The following information was requested by IEPA (summarized in Friday September 19, 2008 IEPA email).

- "Updated groundwater flow maps";
- "A depiction of the Detrex sources contributing to groundwater contamination and the extent of that contamination";
- "A depiction and/or discussion of the relationship of known soil contamination and how it demonstrates that portions of groundwater contamination are from other sources besides the facility";
- "Proposed constituents of concern for groundwater"; and
- "A discussion that verifies free product has not been observed in groundwater".

The following Attachments are included with this letter:

- Attachment 1: Figures 1 through 7 and a Figure prepared by Handy Button's consultant

- Attachment 2: Tables summarizing trichloroethylene (TCE) soil data by elevation

1 Updated Groundwater Flow Maps

Based on the geology and hydrogeology in the area of the site, typical hydraulic gradients are very low (less than 0.005 feet per foot) and the hydraulic conductivity is low (ranged from 2.05×10^{-6} to 2.92×10^{-8} centimeter per second [cm/sec]). Based on these hydraulic properties, it is generally difficult to interrupt a hydraulic flow direction; and therefore, the hydraulic gradients were not presented previously. However, at the request of the IEPA, hydraulic flow interpretations are attached as Figure 1 through Figure 3 (Attachment 1).

- Figure 1. Groundwater Elevation Map. March 14, 2008
- Figure 2. Groundwater Elevation Map. April 27, 2007
- Figure 3. Groundwater Elevation Map. September 11, 2007

It appears that the apparent groundwater flow is greatly influenced by the geometry of the monitoring well locations, therefore the apparent north-south flow may be an artifact of the geometry. Furthermore, apparent groundwater flow may also be influenced by local improvements (e.g. railroad siding, utility corridors, building footings) which provide preferential flow pathways. Natural groundwater flow patterns are therefore difficult to depict.

Based on the available information, the only significant groundwater features that appear to be consistent are the groundwater elevation differences between Monitoring Wells MW-10 and MW-1, and Monitoring Wells MW-5 and MW-9. Groundwater around Monitoring Well MW-10 consistently appears to flow towards Monitoring Well MW-1 and the Detrex property, and groundwater around Monitoring Well MW-9 consistently appears to flow towards Monitoring Well MW-5.

Groundwater elevations recorded by Handy Button's consultants for wells near and beneath their building are summarized in a Figure prepared by their consultant is also provided in Attachment 1 for reference.

It is important to note that the observed groundwater impacts appear to be more related to local soil impacts than to groundwater migration.

2 Groundwater Isoconcentration Map

A depiction of the Detrex sources contributing to groundwater contamination and the extent of that contamination is provided in Figure 4 (Groundwater Isoconcentration Map of Trichloroethene. April 2007). (Figure 4 is provided as Attachment 1.)

The use of groundwater as a potable source in Melrose Park is prohibited by a City Ordinance as discussed in the Phase III Report Groundwater samples collected at MW-8, MW-6, BH-40, and BH-44 indicate that groundwater impacts (multiple plumes) associated with Detrex, LaMantia, Handy Button, and other historical sources are delineated within the City of Melrose Park; therefore the groundwater ingestion pathway can be excluded since an institutional control is already in place.

3 Pattern of Constituents in the Soil

The following three figures provide a depiction of impacts to soil at the site and on nearby properties. As discussed previously, several areas of chlorinated impacts are evident in the area that are not attributable to historical operations on the Detrex property. The impacts have been presented based on elevation above mean sea level (amsl), as ground surface varies significantly across the area. Figures 5 and 6 of the Phase III Report illustrate the change in surface elevation (cross-sections). The following figures show the distribution of TCE in soils at different elevations:

- Figure 5. Distribution of TCE in Soils at 630 Feet;
- Figure 6. Distribution of TCE in Soils at 620 Feet; and
- Figure 7. Distribution of TCE in Soils at 610 Feet.

These figures are included in Attachment 1. Soil distribution maps are extracted images from the enhanced visualization model included in the Phase III Report and

presented at the February 2008 meeting. The elevations depicted in the attached figures present a surface elevation (630 feet above amsl); a mid-depth elevation (620 feet amsl) and an elevation at depth (610 feet amsl).

In addition, tables summarizing soil TCE data by elevation in a few key areas are included as Attachment 2 (previously presented in Appendix K of the Phase III Report).

4 Local Source Areas

Over the past 30 years, other businesses and facilities located on neighboring properties have used or were likely to have used chlorinated solvents. Data and information collected thus far identify several local known and/or suspected sources that either bound, or are commingled with, impacts associated with Detrex's historical operations.

Residual constituents in soil are indicative of sources that have impacted groundwater. Constituents in soil and groundwater may migrate through environmental media over time. Areas identified as source areas are listed and briefly discussed below. These are discussed in detail in Section 6 of the Phase III Report (2008).

Detrex Facility

- Dock area facing Le Moyne Avenue (south)
  - Historical release of 1,1,1-trichloroethane (1,1,1-TCA) in the front dock area.
  - Impacts appear to have migrated to the south towards Handy Button, and to the west towards Outback Sales.
- Dock area facing the railroad (north)
  - Historical release of TCE from a railcar on the railroad siding.
  - Impacts appear to have migrated along the railroad siding, north, and towards Outback Sales (west).

Other Nearby Melrose Park Sources

Several other sources of chlorinated volatile organic compounds (VOCs) are present in the area. Soil source areas on the Handy Button and LaMantia properties can be identified on the Figures 5 through 7 (Attachment 1). These depict TCE concentrations in soil based on interpolation of available data, for three elevations (630 feet, 620 feet, and 610 feet). In addition, soil data collected in the area are summarized by elevation and location in tables included in Attachment 2.

- Impacts beneath and near Handy Button (1740/1750 North 25th Avenue) located south of Detrex, across Le Moyne Avenue, are attributable to historical activities at this location.
  - Soil Borings B-101 through B-509 show the following (see Table in Attachment 2 titled "Summary of TCE Data by Elevation Between B-401 (Handy Button) and BH03 (Detrex Dock)").
    - Shallow source areas beneath building (0-3 feet below ground surface [bgs] TCE detections) and deeper concentrations that are positioned in a way that they cannot be related to Detrex's operations.
    - Handy Button had a degreaser which was located near the front (north side) of their building and had a trench running towards Le Moyne Avenue. Degreaser was located next to Soil Boring B-206 (MW-101), which had the highest concentration of TCE (17,000,000 micrograms per kilogram [µg/kg]) detected in soil in the area of the Detrex and surrounding properties.
  - Handy Button's impacts extend towards Le Moyne Avenue and are expected to commingle with Detrex's impacts beneath Le Moyne Avenue.
    - Detrex is working with the owners of Handy Button on areas between the two buildings where impacts may be commingled.
    - Detrex is working on an application for a Highway Authority agreement that would limit potential contact with constituents beneath Le Moyne Avenue between the two buildings that may be attributable to either site.
- Eastern portion of the LaMantia building (2525 West Le Moyne Avenue) (adjacent property to the east of Detrex) appears to be the source of chlorinated VOCs to the area and railroad track behind their building.
  - Impacts beneath the northeast corner of the LaMantia building.

- BH22/MW-2, BG1/MW-5, HA-01, and MW-9 (see Attachment 2, "Summary of TCE Data by Elevation Between Eastern Side of Detrex (North Property Line) and LaMantia").

- The eastern-most portion of the LaMantia building was used as ball bearing facilities by several previous owners/tenants. Ball bearing facilities routinely used chlorinated VOCs for degreasing.
- Near-surface or surface TCE concentrations in soil decrease between BH22/MW-2 and HA-01 and HA-02, which are located just east of the Detrex property behind the northwestern corner of the LaMantia building (from 210,000 µg/kg to less than 25 µg/kg), and then increase at HA-04 and MW-5 to MW-9..
  - Impacts are at a higher elevation than source areas behind the Detrex property and are over 300 feet from the facility.
  - Concentrations of TCE in soil near the surface increase from MW-5 (2,300 µg/kg) and HA-04 (3,600 µg/kg) to MW-9 (7,580 µg/kg).
  - Concentrations at HA-04, MW-5, and MW-9 cannot be attributable to Detrex.

- Concentrations of TCE in deeper soil decrease from BH22/MW-2 (1,200,000 µg/kg) to BG1/MW-5 (3,500 µg/kg) and then increase to MW-9 (910,000 µg/kg).
- TCE concentrations in groundwater are higher at MW-5 (308,000 µg/kg) than at MW-2 (230,000 µg/kg) or at MW-9 (32,100 µg/kg).
- Impacts near the United States Post Office (1824 North 25th Avenue) (more than 300 feet from the Detrex property) likely to be related to the historical activities in the eastern portion of the LaMantia building (1800 North 25th Avenue).
- Deep impacts may be co-mingled in certain areas.
  - Detrex is working with LaMantia to address conditions along the railroad track where impacts may be commingled.

- Impacts east of the Sitex building. MW-10 and BH39 (Sitex Corporation [former Interstate Paper]) (2575 West Le Moyne Avenue) (west of Outback, which is west of Detrex)

  - See Table in Attachment 2 titled "Summary of TCE Data by Elevation Between the Detrex and Sitex Properties"
  - Shallow soil and groundwater impacts near the Sitex Building are not likely to be related to Detrex's operations.

  - Shallow depth of impacts and distance from Detrex.
  - Deep impacts on the Sitex property (TCE but no tetrachloroethene [PCE]) do not show same constituent profile as the area of Detrex that would be the suspected source (both TCE and PCE).

- Deeper soil impacts (approximately 625 feet) at MW-10 (1,510,000 µg/kg) are higher than soil impacts on the western side of the Detrex building (BH17 [460,000 µg/kg], BH18 [1,200,000 µg/kg], and BH19 [920,000 µg/kg]) at approximately the same elevations.
- Near the surface, soil impacts are higher on the eastern side of the Sitex building (MW-10 [18,500 µg/kg]) than on the western side of the Outback building (AGP-11 [93.1 µg/kg]).
- Groundwater concentrations at MW-10 (34,500 micrograms per liter [µg/L] on Sitex property) are higher than at the back of the Detrex building (MW-1 [31,500 µg/L]). Concentrations of breakdown products (cis-1,2-dichloroethene and vinyl chloride) are also higher at MW-10 than at MW-1 (see Table 9 of the Phase III Report).
- The Sitex property used to be a Euclid Division of General Motors facility.

These areas are depicted on Figures 5 through 7 (see Attachment 1).

5 Constituents of Concern in Groundwater

All constituents detected at and near the site in groundwater were compared to the TACO Tier 1 Class II Remedial Objective (RO) and water solubility in Table 9 of the May 2008 Phase III Report. Based on this comparison the following were identified as constituents of potential concern (COPCs): benzene, chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; PCE; 1,1,1-TCA; TCE; and vinyl chloride.

The location of the maximum detected concentration (bold and blue) and all exceedances of the Tier 1 ROs are provided in Table 1 below:

Table 1. Summary of COPCs in Groundwater

Constituent	Maximum Detected (µg/L)	Tier 1 Class II RO (µg/L)	Locations of Exceedances (maximum detected is bolded)			
			Detrex (a)	East – Not Detrex. (b) (LaMantia)	West – Not Detrex (c) (Sitex)	South – Not Detrex (d) (Handy Button)
Benzene	38.7	25		HA-04, **MW-5**		
Chloroethane	132	4.6	MW-2	**MW-5**		
Chloroform	29.5	1	**MW-2**	HA-04, MW-5, MW-9	MW-10	
1,1-Dichloroethane	4,380	3,500		**MW-5**		
1,1-Dichloroethene	8,500	35	MW-2	MW-5	**BH-39**, MW-10	
cis-1,2-Dichloroethene	160,000	200	BH-42, MW-1, MW-2	HA-04, MW-5, MW-9	**BH-39**. MW-10	
Tetrachloroethene	1,200	25	**BH-42**, MW-1, MW-2			
1,1,1-Trichloroethane	1,300	1,000	**MW-2**			
Trichloroethene	380,000	25	BH-37, BH-42, MW-1, MW-2, MW-3	HA-04, **MW-5**, MW-9	BH-39, MW-10	BH-40
Vinyl chloride	681	10	MW-2	HA-04, MW-5	**MW-10**	

Notes

(a) Likely to be Associated with Detrex
(b) Likely Off-site Source (east of the site) (adjacent to LaMantia
(c) Likely Off-site Source (west of the site) (adjacent to Sitex)
(d) Likely Off-site Source (south of the site) (south of Handy Button)

The locations of the maximum detected concentrations in groundwater are consistent with impacts observed in soil and with the existences of multiple sources of contamination in the area.

The highest detected concentrations of TCE and benzene in groundwater are at MW-5, located behind the LaMantia building (see Table 1 above and information provided in the Phase III Report). The benzene is likely to be attributed to an underground storage tank (UST) previously located in the area near MW-5 and MW-9 behind the LaMantia building. The removal was documented in a report that ARCADIS (Mr. Stephen Vasas) briefly reviewed during a meeting with representatives of LaMantia. The report indicated that soil samples were collected in the area around the UST, tested for benzene, toluene, ethylbenzene, and xylenes (BTEX) and polynuclear aromatic Hydrocarbons (PAHs), and soils were removed as needed. It appeared no groundwater samples were collected. Like the benzene, it is likely the TCE detected in MW-5 is attributable to historical activities that occurred in this area and are not associated with activities on the Detrex property.

6 Potential for Free-phased Material in Groundwater

During groundwater sampling events, all monitoring wells were examined for free-phased material. Monitoring wells were purged dry in order to investigate the bottom of the well, since chlorinated solvents are denser than water and free-phased material would sink in the water column. Each monitoring well was purged with a dedicated polyethylene bailer. Water from each bailer was inspected for free-phased material. Water was then placed in a drum and allowed to settle. Water in the drum was further examined for free-phased material.

Free-phased material was not observed during any of the groundwater sampling activities.

Closing

Please feel free to contact us if you have questions or would like to have additional information.

Sincerely,

ARCADIS

Stephen Vasas
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:

Mr. Stan Miles, Detrex Corporation
Ms. Takako Halteman, IEPA

ARCADIS

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

MEMO

To:
Ms. Amy Boley
Environmental Geologist
Illinois Environmental Protection Agency
Amy.boley@illinois.gov
(217) 558-4716

Copies:
Ms. Takako Halteman, Illinois Environmental Protection Agency
Mr. David Craig, Detrex Corporation

From:
Stephen Vasas, P.G.
Betty Locey, PhD, DABT

Date:
May 12, 2009

ARCADIS Project No.:
SFE04017.04.01

Subject:
Updated Water Well Survey Text, Table and Figure

Ms. Boley,

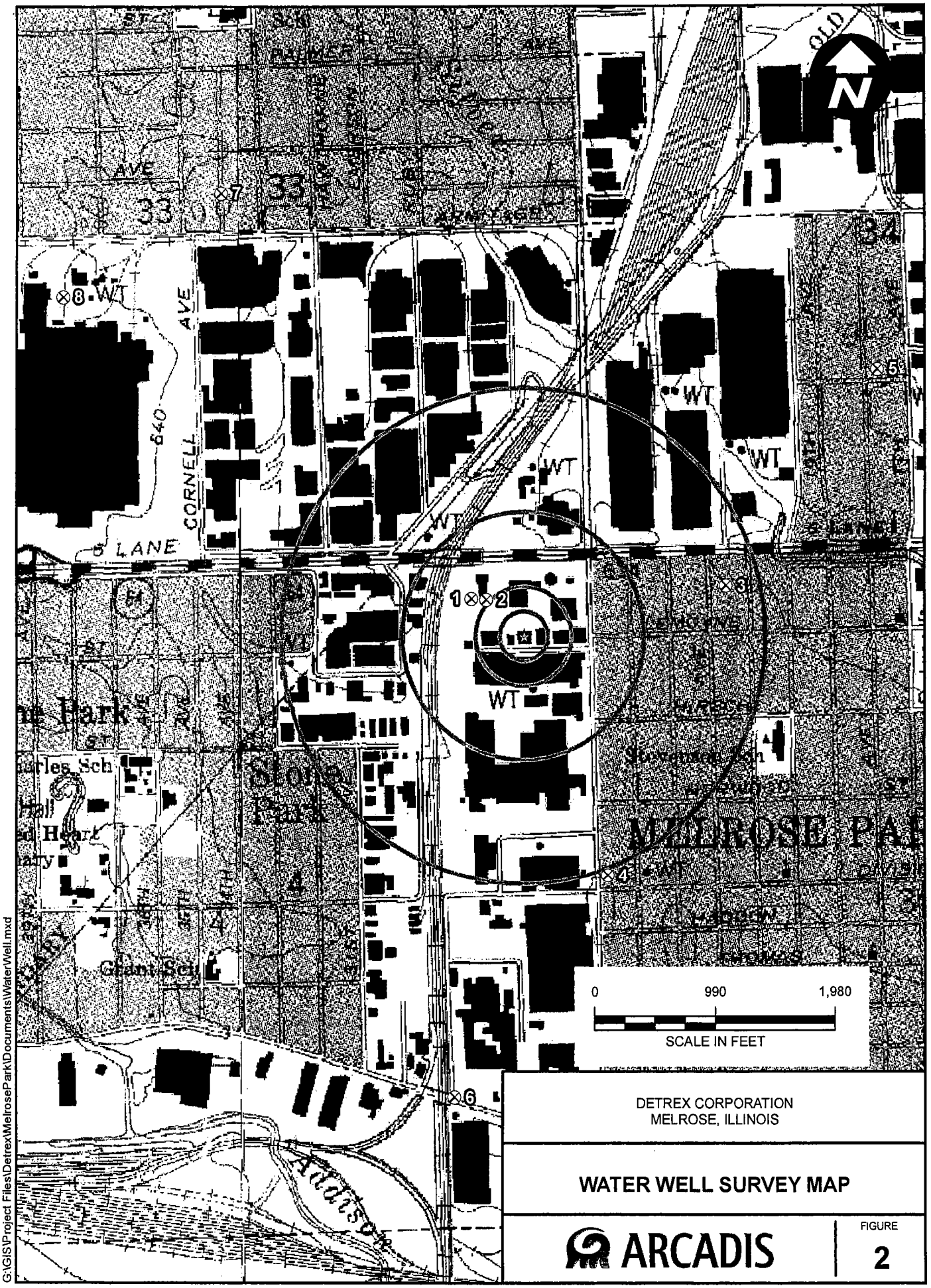
The following text replaces second bullet of Section 2.4 on page 10 of ARCADIS' May 5, 2008 *Phase III Summary of Environmental Conditions Report for Detrex Corporation Facility Located in Melrose Park, Illinois*. The attached Table and Figure replace the Table and Figure from Appendix C of the same report.

- A water well survey completed by ARCADIS performed in 2003 and confirmed in 2009 identified four private wells within approximately 2,500 feet of the site. One well, identified as IHB RR #4 is approximately 600 feet from the site, another well, which the Illinois State Well Survey (ISWS) identified as IHB #4, is located approximately 400 feet from the site, and is a re-reporting of the IHB RR#4 well in a different location. The IHB RR#4 and IHB#4 wells are both reported as being used for industrial purposes and are not potable wells. A third well, identified as Amlings Flowerland, is located approximately 1,500 feet away and is not used for potable purposes. The fourth well is located about 2,050 feet away from the site and is a City of Melrose Park Well that is no longer in use and is not likely to be used in the future. The Table and Figure include four wells that were identified in the survey that are located more than 2,500 feet from the site for completeness. These wells are not addressed further because of their distance from the site. The well survey details are provided in Appendix C.

If you have any questions, please feel free to contact Betty Locey at (248) 994-2263.

Table C-1. Water Production Well Table
Detrex Corporation
Melrose Park, Illinois

Number	Owner	Depth (feet)	Approximate Distance from Site (feet)	Set Back Zone (feet)
1	Indiana Harbor Belt RR	2007	600	200
2	I.H.B. #4	2007	400	200
3	Amlings Flowerland	225	1,500	200
4	Melrose Park (inactive)	2117	2,050	200-1000
5	Orlando Pasqual	166	3,379	200
6	Richardson Co	1960	3,643	200



DETREX CORPORATION
MELROSE, ILLINOIS

WATER WELL SURVEY MAP

ARCADIS

FIGURE
2

CITY:NO GROUP:ENV DB: PIC: PM: TM: TR:
PROJECT NUMBER:
G:\GIS\Project Files\Detrex\MelrosePark\Documents\WaterWell.mxd

ARCADIS
Infrastructure, environment, facilities

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Takako Halteman
Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Proposed topics for discussion
August 21st conference call
Detrex Corporation Facility
Located at 2537 Le Moyne Avenue in Melrose Park, Illinois

Date:
August 17, 2009

Contact:
Betty Locey, Ph.D., DABT

Phone:
284.994.2263

Email:
betty.locey@arcadis-us.com

Our ref:
SFE04017

Dear Ms. Halteman and Ms. Boley:

This letter provides a list of proposed topics for discussion on our upcoming August 21st conference call. In addition, topics are also identified for discussion at our September 15th meeting. As discussed, issues identified for discussion on our August 21st call either have the potential to be resolved based on a limited discussion or for which preliminary discussion would make our September 15th meeting more productive. In many cases we are proposing to discuss only one part of an Illinois Environmental Protection Agency (IEPA) condition.

Each relevant condition is provided below and is identified by its numerical designation in IEPA's July 9th, 2009 letter. The condition is followed by a brief description of the proposed topic for discussion.

Proposed Topics for Discussion

IEPA Condition/Modification #3:
Based on the site-specific conditions and IEPA's further evaluation of the data presented in the subject report, Illinois EPA has determined that the following site specific Soil Saturation Limits (C_{sat}) for TCE and PCE are approved for the Detrex property only:

Trichloroethene (TCE) =	*1767 mg/kg (surface soil; above 1-m bgs)* *2550 mg/kg (subsurface soil; below 1-m bgs)*
Tetrachloroethene (PCE) =	*425 mg/kg (surface soil)*

436 mg/kg (subsurface soil)

*1,1,1 -Trichloroethane (1,1,1-TCA) = 1570 mg/kg (surface soil)**
*2240 mg/kg (subsurface soil)**
**Default soil property values for silt are used*

Note that, as you are aware, the recent proposed amendments to the TACO regulations included various modifications, including addition of Indoor inhalation exposure route to the risk evaluation in TACO. Thus, it is highly recommended that the facility meet the default Csat requirement recent proposed amendments to TACO as shown below:

Csat (mg/kg)	Outdoor Inhalation	GW Migration	Indoor Inhalation
PCE	800	310	290
111-TCA	1300	670	560
TCE	1200	650	520

Condition/Modification #3 Discussion Topics:
Detrex recognizes that the pending changes to the TACO regulations, once promulgated, have the potential to change aspects of the analysis and final solutions for the site. However, until promulgated, the proposed amendments are subject to change. Detrex wishes to avoid updating the analysis based on the proposed changes, and then potentially updating the analysis again once the regulations become final.

As such, Detrex proposes to address the changes by calculating pathway specific, site-specific Csat values for relevant soil types for reference. These will be used once the TACO regulations have been promulgated.

To address concerns related to Csat conditions at off-site properties, Detrex proposes to first review boring logs for the locations where fraction of organic carbon (foc) has already been collected and logs for data collected on the off-site properties to determine whether subsurface conditions are similar enough to propose the use of foc data previously collected on the Detrex property. If they are similar, the analysis will be presented for discussion at the September 15th meeting. If the data and information does not support the use of previously collected data, Detrex will provide a plan (location and sample depth) for the collection of the site-specific foc data for discussion at the September 15th meeting.

Site-specific foc values will be used to develop pathway-specific, soil type-specific Csat values for each adjacent property, as needed.

IEPA Condition/Modification #4:
If the facility disagrees with the C_{sat} values in Condition 3 above, the facility may

choose to conduct additional evaluation. However, unless new additional field data, collected from appropriate sampling locations and depth pre-approved by Illinois EPA, is provided to Illinois EPA to modify the site-specific values, the following site-specific values for foc the facility must utilize following values for the foc:

foc (surface soil) = 0.0086
foc (subsurface soil) = 0.013

Condition/Modification #4 Discussion Topic:
As discussed above, to address concerns related to Csat conditions on off-site properties, Detrex proposes to first review boring logs for the locations where foc data has already been collected and logs for data collected on the off-site properties to determine whether subsurface conditions are similar enough to propose the use of foc data previously collected on the Detrex property. If they are similar, the analysis will be presented for discussion at the September 15th meeting. If the data and information does not support the use of previously collected data, Detrex will provide a plan (location and sample depth) for the collection of the site-specific foc data for discussion at the September 15th meeting.

Site-specific focs will be used to develop pathway-specific Csat values for each adjacent property, as needed.

IEPA Condition/Modification #8:
The investigation data and the evaluation of the soil and groundwater contamination in the on- and off-site properties included in the subject Phase III Report and the additional information submitted in October 2008 identified some highly contaminated areas (for TCE only) at the facility and off-site properties. Figures 5 thru 7 in Attachment 1 of the October 2008 submittal show the potential distribution of TCE in soil at three different subsurface elevations (the typical ground-surface elevation at Detrex facility is approximately 632.5'): 630', 620' and 610'. These figures show the facility's interpolation of the data collected to date and may not represent the accurate/actual field condition. However, the locations of the high concentrations of TCE shown in the figures are likely sources of the soil and groundwater contamination in the area.

Based on the data provided in the subject submittals, the following areas of soil contamination associated possibly associated with former releases and operation at the Detrex facility are identified below (Attachment D to this letter is a site map showing the locations of these areas):

a. *Soil contamination in the northern portion of the Detrex facility extending to the surrounding off-site areas (Area A);*
b. *Soil contamination in the Loading Dock Area (Area B), which extends out west to the Outback property;*

c. *Soil contamination in the vicinity of Outback Building, just west of Detrex property (Area C). Please note that this contamination may have originated from the Loading Dock Area (Area B) at Detrex;*
d. *Soil contamination between Detrex Facility and Button Facility along the LeMoyne Avenue (Area D);*
e. *Soil contamination in the Handy Button Property along LeMoyne Avenue (Area E); and*
f. *Area just East of Detrex Building in LaMantia Property (associated with Area B).*

Condition/Modification #8 Discussion Topic:
Detrex agrees that these figures include impacted areas that are not attributable to historical site activities as well as areas that are. In order to delineate contamination related to Detrex operations from others we propose to discuss the soil and groundwater plumes further at the September 15th meeting. Updated drawings will be provided with the formal meeting request for IEPA review.

IEPA Condition/Modification #9:
The facility must submit a corrective measure (CM) plan to address/remediate the areas identified in Condition 8 above. As indicated in Condition 7 above, any soils exceeding the site-specific C_{sat} limits must be remediated to at least below the C_{sat} levels (the actual remediation level is dependent on the procedures/requirements associated with developing remediation objectives for this project in accordance with 35 111. Adm. Code 742). The CM requirements for the Detrex facility are included in the attachment D.3 of the facility's afore-mentioned RCRA Part B Renewal Permit. The CM plan must satisfy the requirements included in the permit. In addition, the following information must also be included:

a. *A scaled site map showing the facility and the neighboring properties and their property boundaries (each property must be clearly identified);*
b. *A scaled site map with the areas of soil contamination above the remedial objectives ;*
c. *A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);*
d. *A scaled figure(s), which includes on-site and off-site properties showing: (1) the areas where Detrex intends to remediate; and (2) the contaminated areas found during the RFI where Detrex does not intend to remediate. An explanation to Item (2) based on the actual data collected to-date must be accompanied for each area surrounding the Detrex .facility.*
e. *An estimate of the extent and the volume of contamination present in soil above applicable remedial objectives for the project;*
f. *Detailed descriptions and technical background and specification information for chosen remedial method(s), which should include pros and cons of utilizing the remedial method(s);*
g. *Time schedule and cost estimate for the proposed remedial activity and reporting;*

h. Goals and objectives of the proposed remedial efforts;
i. Criteria for evaluation of the outcome of the remedial efforts; and
j. If a pilot study of one or more remedial option is proposed, then detailed technical information applicable to this project regarding all selected methods/options must be provided.

Condition/Modification #9 Discussion Topic:
Condition c. Detrex proposes to provide a figure showing areas exceeding site-specific Csat values.

IEPA Condition/Modification #10:
As you know, the proposed amendments to the TACO regulations included many changes to the current regulations. Specifically, the modifications proposed which will affect the direction of the Detrex corrective action project include (but not limited to):

a. Addition of the indoor-Inhalation exposure route evaluation for soil and groundwater concentrations;
b. Changes in the Tier 1 remediation objectives; and
c. Soil saturation limits (Csat.) for three different exposure routes for COCs for this site: outdoor-inhalation, migration to groundwater; and indoor-inhalation.

Due to the fact that. (1) concentrations of the TCE and other COCs are extremely high; (2) contamination has migrated to off-site properties; and (3) Indoor inhalation exposure is an immediate concern at this facility and off-site areas, although it is not required at this time, it is recommended that the facility will develop a corrective measure (CM) plan to address the contaminations to meet the requirements of the proposed amendments to the TACO.

Condition/Modification #10 Discussion Topics:
Detrex recognizes that the pending changes to the TACO regulations, once promulgated, have the potential to change aspects of the analysis and final solutions for the site. However, until promulgated, the proposed amendments are subject to change. Detrex wishes to avoid updating the analysis based on the proposed changes, then potentially updating the analysis again once the changes have been promulgated.

Detrex proposes the following:

a) Protection of the indoor air pathway will be evaluated using a Tier 3 approach. Site-specific objectives will be developed using approaches consistent with the proposed changes to TACO.

b) Update screening tables will be prepared once the TACO Tier I remedial objectives have been promulgated. Submittals to IEPA prior to promulgation of the updated regulations will include supplemental tables that provide a comparison to the draft protection

of indoor air criteria for reference.

c) Site-specific, soil type-specific Csat values will be calculated for each pathway using an approach that is consistent with the proposed TACO guidance as discussed in the response to comment number 3 above. Depending on the area and information available, additional indicators of the presence of free-phased material (saturated conditions) in soil may be considered. If these are deemed useful, they will be discussed with IEPA.

As previously discussed, Detrex proposes to address all pathways identified in the draft regulations; however, proposes using a Tier 3, site-specific approach for the protection of indoor air pathway and calculated Csat to avoid repeated updates based on possible changes to the draft regulations.

Detrex collected subslab soil gas data on the Outback property to better understand potential impacts to indoor air. Options for mitigating impacts that may be associated with historical activities on the Detrex property are currently being evaluated. An approach will be proposed for discussion at the September 15th meeting.

Detrex proposes to address the vapor intrusion pathway at the Detrex facility when current activities at the facility change and chlorinated solvents are no longer handled, or sooner if required under the new regulations or if doing so will allow continued use of the facility for other purposes. Vapors that may be emanating from the subsurface into indoor air at the Detrex facility are not expected to be significant compared to those allowed in the workplace air under OSHA, as solvents are handled in this active facility.

IEPA Condition/Modification #14:
For indoor inhalation exposure pathway, the analytical data was compared to the draft remedial objectives for this exposure route in the subject submittal, which have not been formally approved by the Illinois Pollution Control Board (IPCB). However, by comparison, the levels of COCs in soil and groundwater may pose threat to the indoor air and will be likely to be concern for this facility and surrounding areas. The proposed regulations are being drafted at this time and the draft regulations to be included in TACO are expected to be available in the near future. As such, it is highly recommended that the facility should initiate the remedial option for the facility and any affected off-site locations regarding this exposure route.

Condition/Modification #14 Discussion Topics:
Data collected on the Outback Sales (Outback) property (2555 West Le Moyne Avenue) is described in the report submitted to IEPA on July 22nd titled *Evaluation of Data Collected on the Outback Sales Property*. Data indicate that the subsurface beneath the building has been impacted by two separate sources. Detrex is evaluating options for addressing this pathway

and has entered into initial discussions with the owner of the property.

Site-specific soil and groundwater objectives protective indoor air are proposed to evaluate Detrex-related impacts on the LaMantia and former Ford Motor Company properties.

Remedial objectives protective of indoor air are not expected to be relevant to the following areas:

- Le Moyne Avenue.
- The railroad track area behind the facility, as it is likely to be within an easement area where building is not allowed.

Impacts beneath the Handy Button building are likely to be associated with historical activities on that property and not likely to be associated with activities on the Detrex property.

Detrex proposes to evaluate the use of a mitigation system on the Detrex property to control potential vapor intrusion as discussed in Discussion Topic for Condition/Modification # 10.

IEPA Condition/Modification #15:
It was demonstrated that the soil contamination in the northeastern portion of LaMantia property and the southeastern portion of U.S. Postal Service is unlikely to be associated with the soil contamination identified in the Detrex facility. However, the groundwater contamination in the vicinity of this area maybe associated to the contamination from Detrex.

Condition/Modification #15 Discussion Topics:
Detrex agrees the soil contamination in the southeastern portion of U.S. Postal Service property is unlikely to be associated with Detrex's historical operations. In addition, groundwater impacts in this area are likely to be attributed to the activities that caused the soil impacts.

Detrex feels there is a need for further discussion with the IEPA on the extent of contamination along the railroad siding. Additional data collection locations will be presented and discussed at the September 15th meeting.

IEPA Condition/Modification #16:
The Illinois EPA cannot concur with the facility interpretation of the horizontal extent of groundwater contamination, as depicted on Figure 4 of the Additional Information dated October 2, 2008. The facility must define the extent of groundwater contamination with actual data points where contaminants of concern (COCs) are not exceeding 35 Ill. Adm. Code, Part 620, Class II Groundwater Quality Standards (GQSs), instead of modeling or estimating the extent of the plume.

Condition/Modification #16 Discussion Topic:
Detrex proposes a detailed discussion of the horizontal extent of the groundwater impacts at the September 15th meeting.

IEPA Condition/Modification #17:
The following additional sampling locations are required to better define the extent of groundwater contamination:

a. *A minimum of three (3) groundwater samples are required to determine the actual extent of current groundwater contamination north of SWMU 3. Groundwater samples must be collected north of the railway at the following locations: (I) northwest of MW-1; (2) near BH-44; and (3) northeast of MW-2.*

b. *A current sample southeast of SWMU 3, collected at or near BH-38.*

c. *If current conditions indicate the groundwater levels exceed Class II GQSs at any of the locations required by Conditions 17.a and 17.b above, more investigation locations may be necessary to determine the extent of contamination.*

d. *The samples required by Conditions 17.a and 17.b above must be obtained before the facility can further pursue excluding the groundwater pathway. The groundwater sampling locations may be collected from temporary piezometers; however, once the extent of groundwater has been defined, permanent monitoring wells may be required.*

Condition/Modification #17 Discussion Topic:
b. Detrex proposes further discussion of where additional data will be collected on the LaMantia property in the general area of BH-38 at the September 15th meeting.

IEPA Condition/Modification #18:
The Illinois EPA concurs that there are likely off-site sources of contamination that are not attributable to Detrex, and the groundwater contaminant plumes cannot be differentiated based on available data. Therefore, groundwater contamination has been delineated for all COCs at the following locations:

a. *Groundwater has been defined to the extent practicable to the south with monitoring wells MW-03, MW-04, and. MW-07*
b. *Monitoring well MW-8 defines the extent of groundwater contamination to the east.*
c. *Monitoring well MW-10 is adequate to define the extent of contamination to the west.*

Condition/Modification #18 Discussion Topic:
b. Detrex proposes to discuss collection of additional data to define the limit of the groundwater plume to the east of the facility at the September 15th meeting.

IEPA Condition/Modification #20:
The facility must maintain monitoring wells MW-1 through MW-10 to allow for collection of groundwater samples from the uppermost aquifer. The facility must implement a routine groundwater monitoring program, and report all monitoring and analytical data in accordance with the schedule listed below:

	Samples to be Collected During the Months of:	*Results Submitted to the Illinois EPA by the Following:*
a.	*Second Quarter*	*July 15*
	Fourth Quarter	*January 15*

b. The Illinois EPA concurs with the proposed site-specific COCs: benzene; chloroethane; chloroform; 1,1-dichloroethane; 1,l-dichloroethene; cis-l,2-dichloroethene; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; and vinyl chloride. All groundwater samples must be analyzed and compared to the approved Class 11GQSs. An isoconcentration mad must be created based on the results of the groundwater analysis.

c. The facility must determine the groundwater surface elevations at each well at the time groundwater is sampled in accordance with Condition 20.a. A potentiometric groundwater surface map must be created based on the groundwater elevations collected.

d. The facility must submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by this letter for identification purposes. Only one (l) copy of the LPC 592 must accompany your submittal. However, the facility must submit one (1) original and (excluding the groundwater monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is included as Attachment B.

e. Information required by Conditions 20.a through 20.d must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this letter, in accordance with the schedule found in Condition 20.a above. Additional guidance regarding the submittal of the information in an electronic format can be found at: www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

f. *The facility must report the information required by Conditions 20.a through 20.e in accordance with the schedule listed in Condition 20.a above, to the address listed below:*

Stephen F. Nightingale, P.E.
Illinois Environmental Protection Agency
Bureau of Land --#33
Permit Section Post Office Box 19276
Springfield, Illinois 62794-9276

Condition/Modification #20 Discussion Topic:
Data collected at MW-8 demonstrates conditions from all sources in the local area of interest have not impacted local groundwater beyond this location. However, Detrex feels that site data and information indicate impacts associated with the Detrex facility are not likely to extend near MW-8. Detrex proposes to discuss collection of additional data to define the limit of the groundwater plume to the east of the facility at the September 15th meeting.

IEPA Condition/Modification #23:
Once the vertical and horizontal extent of contamination have been defined, as reviewed and approved by the Illinois EPA, the facility must establish a Groundwater Management Zone in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, . "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website:
http://www.epa.state.il.us/land/regulatory-programs/permits-and-managemetn/establishing-groundwater-management-zone.html.

Condition/Modification #23 Discussion Topic:
Detrex proposes the further discussion of the establishing a GMZ at the September 15 meeting.

IEPA Condition/Modification #26:
As indicated by Mr. Stan Miles of Detrex during August 2008, the facility is in process of collecting the soil-gas samples at outback property, located just west of the Detrex property. For any future field activity, it is recommended that the facility should submit a work plan for Illinois EPA's review and approval. Any field activities and investigation must be conducted an accordance with the technical guidance provided by USEPA, ASTM, ITRC or other acceptable professional organizations. All soil gas samples must be analyzed using a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory.

Condition/Modification #26 Discussion Topics:

Soil gas data has been collected on the Outback Sales (Outback) property (2555 West Le Moyne Avenue) on two occasions. The data and the approach used to collect that data is provided in a summary report submitted to IEPA on July 22nd titled *Evaluation of Data Collected on the Outback Sales Property*.

Soil gas data was analyzed by Air Toxics, LLC, a NELAP-certified laboratory located in California. Data are provided in the summary report.

Work plans will be submitted prior to completing future field activities.

IEPA Condition/Modification #27:
In general, when collecting soil gas samples, at a minimum, the followings should be followed during sample collection:

a. *Use rigid-wall tubing made of nylon or Teflon (or other equivalent material);*
b. *Use gas-tight, insert containers to hold the sample)*
c. *Purge three volumes before obtaining each discrete soil gas sample;*
d. *Use a tracer of isopropyl alcohol or other equivalent leak compound;*
e. *Limit the flow rate to 200 ml/min; and*
f. *Soil gas sample shall be collected at a depth of 5 feet below ground surface.*

Condition/Modification #27 Discussion Topics:
Conditions a through e: Detrex agrees that the appropriate approach should be used to collect all soil gas data. Illinois guidance will be used where provided and applicable. These recommendations were followed for the soil gas sampling that was completed at the Outback property.

Condition f: Since groundwater is shallow in the area near the Detrex facility and beneath the Outback Building (2555 West Le Moyne Avenue), collection of soil gas samples at 5 feet was not possible. Subslab soil gas samples (samples collected immediately beneath the building slab) were collected as the best indicator of vapors in the subsurface that potentially could impact indoor air. A Tier 3 analysis was needed to evaluate this pathway for the site.

The approach used to collect soil gas data on the Outback Sales (Outback) property is provided in a report submitted to IEPA on July 22nd titled *Evaluation of Data Collected on the Outback Sales Property*, and is consistent with the recommendations provided in comments "a" through "e".

Closing

Please feel free to contact us if you have questions or would like to have additional information. We look forward to discussing the above listed topics further with you on our up coming conference call and meeting with you on September 15th.
Sincerely,

ARCADIS

Stephen Vasas, P.G.
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:

Mr. David Craig, Detrex Corporation

ARCADIS

Infrastructure, environment, buildings

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley and Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Request for a Meeting to Discuss Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois

Date:
September 8, 2009

Contact:
Betty Locey, Ph.D., DABT

Phone:
284.994.2263

Email:
betty.locey@arcadis-us.com

Our ref:
SFE04017.02

Dear Ms. Boley and Ms. Halteman:

ARCADIS respectfully requests a meeting with the Illinois Environmental Protection Agency (IEPA) on behalf of the Detrex Corporation (Detrex) to further discuss the July 9, 2009 IEPA letter and discuss approaches to closing on- and off-site environmental issues at the Detrex facility on Le Moyne Avenue in Melrose Park, Illinois.

The proposed topics of discussion were presented in the August 17, 2009 ARCADIS letter and were discussed briefly in an August 21, 2009 conference call between the IEPA, ARCADIS, and Detrex. In addition, further information regarding site-specific fraction of organic carbon (foc) values and the calculation of the site-specific soil saturation (Csat) limit was provided by Ms. Takako Halteman (IEPA) in an e-mail message on August 24, 2009.

As a result of the additional information obtained during the conference call and e-mail, ARCADIS and Detrex propose to further discuss these topics at the September 15, 2009 meeting. The topics to be discussed are presented in detail below.

Discussion Topics

IEPA Condition/Modification #3, #4, and #11

ARCADIS and Detrex would like to further discuss Csat limits, foc values, and their application to both the Detrex property (on-site) and off-site properties.

ARCADIS agrees with the site-specific Csat and foc values and will apply them in the Corrective Measures (CM) Report. Figure 1 in Attachment 1 presents the soil locations on-site that exceed the site-specific Csat values. Table 1 summarizes the soil data and compares them to the site-specific Csat values.

ARCADIS and Detrex understand that off-site properties must meet the current default (Tier 1) Csat values unless they meet other conditions as stated in Condition #11. Figure 2 in Attachment 1 presents the current Tier 1 Csat exceedances on off-site properties associated with the Detrex-related sources based on current contour diagrams.

ARCADIS and Detrex propose to apply the site-specific foc values for generating Tier 2 Csat values for the off-site properties and, as appropriate, for the pathway-specific Csat calculations when they become regulated. ARCADIS has reviewed boring logs from soil borings on the Detrex property and compared them to boring logs from soil borings collected from the Outback Sales (Outback) property to the west, LaMantia property to the east, and the Ford property to the north. Figure 3 in Attachment 1 presents the locations of several soil borings that have been installed both on-site and off-site. The boring logs from these borings are also included as Attachment 2 to this letter.

ARCADIS and Detrex wish to further discuss these boring locations and boring logs to demonstrate that the on-site soils and off-site soils are the same and that it would be appropriate to use the same foc values for all of the off-site properties.

ARCADIS and Detrex will seek permission from the property owners to calculate site-specific Csat values and will include that information in the Environmental Land Use Control (ELUC) for each off-site property. ARCADIS will calculate the site-specific Csat values as appropriate.

IEPA Condition/Modification #8

The IEPA identified areas of soil impacts as a result of Detrex-related sources in the July 9, 2009 letter.

ARCADIS will present a *Soil Plume Map* and *Groundwater Plume Map* at the September 15, 2009 meeting to clarify areas identified as associated or potentially associated with historical operations at the facility. Figures 4 and 5 in Attachment 1 present the Detrex-related soil plume and Detrex-related groundwater plume,

respectively. Table 2 summarizes the soil sample results collected on the Outback property. The soil and groundwater plume figures will include information presented in the July 22, 2009 *Evaluation of Data Collected on the Outback Sales Property* that was submitted to the IEPA. ARCADIS understands that the IEPA may not have reviewed this report at this time or by the time of the meeting.

IEPA Condition/Modification #9

The IEPA requested a CM Plan to remediate soils that exceed Csat. ARCADIS will present a figure showing all of the soil sample locations that exceed the IEPA approved site-specific soil saturation limit for the Detrex property (Figure 1). In addition, ARCADIS will present a figure that shows the off-site soil sample locations that exceed the default soil saturation limits (Figure 2). However, ARCADIS and Detrex will attempt to obtain approval from the off-site property owners to use a site-specific Csat value, which would also be included in an ELUC for these properties. ARCADIS believes that the subsurface geology on the Detrex property is similar to the subsurface geology of all the investigated properties and that the IEPA-approved foc value for the Detrex property can be applied to the site-specific Csat calculations for the off-site properties as well. Site-specific Csat calculations will be calculated as appropriate for the off-site properties.

ARCADIS will also propose a schedule for the completion of the CM Plan at the September 15, 2009 meeting to address the on-site Csat limit exceedances.

IEPA Condition/Modification #10 and #14

The IEPA suggested that Detrex take into account the proposed Tiered Approach to Corrective Action Objectives (TACO) regulation changes, including the draft approaches and draft remedial objectives for the indoor air pathway, changes to current Tier 1 Remediation Objectives, and the three pathway-specific Csat values.

Detrex has already taken into consideration the proposed TACO regulation changes. A soil and soil-gas investigation was completed at the Outback property to evaluate the indoor air pathway on the Outback property. It should be noted that the Proposed TACO regulations only provide a soil-gas sampling method for areas where groundwater is located deeper than 5 feet below ground surface. Groundwater in much of the investigated area, and within almost all of the Detrex-related soil and groundwater plume is shallower than 5 feet, and in some cases less than 2 feet, below ground surface. As a result of site conditions, ARCADIS collected

soil-gas samples using a method that would be considered a Tier 3 approach in the Proposed TACO regulations. Sub-slab soil-gas samples were collected immediately beneath the slab of the Outback building and are therefore more representative of potential exposure conditions.

Based on these results, it was determined that there are two sources of chlorinated solvent impacts in the subsurface (the Detrex property and the area around a drain on the Outback property). These sources will be further discussed in the September 15, 2009 meeting.

ARCADIS and Detrex will present an approach to address the indoor air pathway for the Detrex property and the Outback property. Site-specific soil and groundwater objectives protective of indoor air are proposed for the Detrex-related impacts on the LaMantia and Ford properties.

IEPA Condition/Modification #15 through #23

These IEPA conditions discuss delineation issues with the groundwater plume; suggest installing additional monitoring wells at suggested locations, establishing a groundwater monitoring program, and developing a Groundwater Management Zone (GMZ); and discuss various reporting procedures.

ARCADIS and Detrex believe that the groundwater impacts observed on the eastern portion of the LaMantia property, the U.S. Post Office property, and the western portion of the Outback property are not solely the responsibility of Detrex and are from another source, or in a worst-case scenario are comingled.

Figure 6 in Attachment 1 presents the locations of the proposed installation of new monitoring wells to better delineate the Detrex-related groundwater plume. However, it should be noted that because multiple soil sources have been identified in the area behind the LaMantia property, the existence of comingled groundwater plumes is likely and that Class II Groundwater Objectives may not be met; therefore, groundwater impacts will be delineated to the extent practicable.

ARCADIS and Detrex will collect groundwater samples from all monitoring wells that are believed to be associated with the Detrex-related groundwater plume. Monitoring Wells MW-6 and MW-8 appear to a distance from the Detrex-related groundwater plume and have historically been non-detect for chlorinated solvents. Groundwater

samples will be analyzed for the constituents of concern (COCs) listed in the July 9, 2009 IEPA letter, and the correct reporting requirements will be followed.

ARACDIS will include all of the items discussed in the July 9, 2009 IEPA letter; however, ARCADIS proposes that isoconcentration maps be prepared for select indicator constituents (i.e., trichloroethene [TCE]; tetrachloroethene [PCE]; 1,1,1 trichloroethane [1,1,1-TCA]) because these constituents are the primary COCs. Groundwater concentrations for all COCs detected above criteria will be presented in tables and figures.

When the groundwater plume has been delineated Detrex will establish a GMZ associated with their site.

IEPA Condition/Modification #26 and #27

These conditions discuss the procedure for the collection of soil-gas samples as outlined in the Proposed TACO regulations. ARCADIS and Detrex discussed the issues with collecting the soil-gas samples in accordance with the Proposed TACO regulations above in the IEPA Condition/Modification #10 and #14. Soil-gas sampling results will be further discussed at the September 15, 2009 meeting, along with future plans to address the indoor air pathway. Soil-gas data are provided in Table 3.

Letter Attachments are listed below:

- Attachment 1 – Figures
  - Figure 1: On-Site Soil Saturation Limit Exceedance Map
  - Figure 2: Off-site Default Soil Saturation Limit Exceedance Map
  - Figure 3: Soil Boring Location Used in the Foc Discussion Map
  - Figure 4: Soil Plume Map
  - Figure 5: Groundwater Plume Map
  - Figure 6: Proposed Monitoring Well Location Map
  - Figure 7: Soil-Data On Outback Property Map
  - Figure 8: Sub-slab Soil-Gas Sample Results on the Outback Property Map
- Attachment 2 – Soil Boring Logs

- Attachment 3 – Tables
  - Table 1: Summary of Soil Data Compared to the Site-Specific Soil Saturation Limit
  - Table 2: Summary of Soil Data Collected on the Outback Property
  - Table 3. Summary of Sub-slab Soil-Gas Sample Results Collected on the Outback Property

Agenda

The following agenda is proposed for the September 15th meeting.

1. Discuss the site-specific Csat and foc values.
   a. Present soil boring locations where the site-specific Csat values are exceeded.
   b. Discuss the use of the site-specific organic carbon values for off-site properties based on similar geology across the site.
   c. Discuss the development of site-specific Csat values for the off-site properties.
2. Discuss current Detrex-related soil and groundwater plume figures.
3. Discuss proposed locations of additional monitoring wells and the groundwater monitoring procedures.
4. Discuss the soil-gas sampling approach used in the Tier 3 sub-slab sampling completed on the Outback property and establish guidelines for future sampling.
5. Discuss schedules for the following:
   a. Proposed Investigation.
   b. CM Plan.

Topics to be discussed are described in greater detail and within the context of IEPA's comments in the topics discussed in the previous sections of this letter.

Closing

Please feel free to contact us if you have questions or would like to have additional information. We look forward to meeting with you and working with you on this site.

Sincerely,

ARCADIS

Stephen Vasas, P.G.,
Project Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:
David Craig, Detrex Corporation
File

David Craig

From: Locey, Betty <Betty.Locey@arcadis-us.com>
Sent: Friday, November 13, 2009 3:23 PM
To: Smith, Jeanine
Cc: David Craig
Subject: FW: Detrex well designations

From: Boley, Amy [mailto:Amy.Boley@Illinois.gov]
Sent: Friday, November 13, 2009 3:17 PM
To: Locey, Betty
Cc: Filson, Bur
Subject: Detrex well designations

Hi Betty,

Please forward these well designations for electronic reporting to Janine:

MW01	G101
MW02	G102
MW03	G103
MW04	G104
MW05	G105
MW06	G106
MW07	G107
MW08	G108
MW09	G109
MW10	G110

Amy M. Boley, Environmental Geologist
Illinois Environmental Protection Agency
amy.boley@illinois.gov
217/558-4716

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ARCADIS

Infrastructure, environment, buildings

ARCADIS G & M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley
Bureau of Land #33, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Request for Extension for the Submission of an Updated Tier 2 Groundwater Evaluation for the Outback Sales Property (Response to IEPA Letter B-113R-CA-10, Comment No. 9)

Date:
February 4, 2010

Contact:
Betty Locey, Ph.D., DABT

Phone:
248-994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.06

Dear Ms. Boley:

ARCADIS, on behalf of the Detrex Corporation (Detrex), respectfully requests an 8-day extension for the submission of an updated Tier 2 groundwater evaluation for the Outback Sales property in response to Comment 9 of the Illinois Environmental Protection Agency's (IEPA's) December 21, 2009 letter to Detrex (Log No. B-113R-CA-10). As discussed with you on February 3, 2010, ARCADIS will submit one original and two copies of the updated Tier 2 groundwater evaluation for the Outback property on behalf of Detrex, to the IEPA on or by Friday February 12, 2010.

It has been a pleasure working with you on this project. Please free to contact me at (248) 994-2263 if you would like to discuss this further.

Sincerely,

ARCADIS G & M of Michigan, LLC

Betty Locey

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:
Ms. Takako Halteman, Illinois Environmental Protection Agency
Mr. Stephen F. Nightingale, Illinois Environmental Protection Agency
Mr. David Craig, Detrex Corporation
File

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Letter requesting extension
Date of Submittal 2-4-10

IEPA Permit Log No. B-113R-CA-10
Date of Last IEPA Letter on Project January 6, 2010
Log No. of Last IEPA Letter on Project B-113R-CA-11
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Letter requesting extension for submission of an updated Tier 2 Groundwater Evaluation for the Outback Sales property (Response to IEPA Letter B-113R-CA-10, Comment no. 9).

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Request for extension for submission of an updated Tier 2 Groundwater Evaluation for the Outback Sales Property (Response to IEPA Letter B-113R-CA-10, Comment No. 9). 2-4-10

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert Currie _____ 2-4-10 (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: Robert Currie _____ 2-4-10 (Date)

Title: Mr. Robert Currie, Vice President

7.2 **PROFESSIONAL CERTIFICATION** ***(if necessary)*** - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ _____ Date:

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** ***(if necessary)*** - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

Street Address: 2537 W. Le Moyne

City: Melrose Park

County: Cook

Site No. (IEPA): 0311860003

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Letter requesting extension
Date of Submittal 2-4-10

IEPA Permit Log No. B-113R-CA-10
Date of Last IEPA Letter on Project January 6, 2010
Log No. of Last IEPA Letter on Project B-113R-CA-11
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: *(briefly describe what is being submitted and its purpose)*

Letter requesting extension for submission of an updated Tier 2 Groundwater Evaluation for the Outback Sales property (Response to IEPA Letter B-113R-CA-10, Comment no. 9).

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Request for extension for submission of an updated Tier 2 Groundwater Evaluation for the Outback Sales Property (Response to IEPA Letter B-113R-CA-10, Comment No. 9). 2-4-10

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ 2-4-2010 Date:

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

ARCADIS

Infrastructure, environment, buildings

ARCADIS G & M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Amy Boley
Bureau of Land #33, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Revised Tier 2 Groundwater Demonstration in Response to IEPA December 21, 2009 Letter (Log No. B-113R-CA-10) Comment No. 9

Date:
February 12, 2010

Contact:
Betty Locey, Ph.D, DABT

Phone:
(248) 994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.06.01

Dear Ms. Boley:

ARCADIS, on behalf of the Detrex Corporation (Detrex), respectfully submits this revised Tier 2 groundwater demonstration for the Outback Sales property located at 2555 West Le Moyne Street, Melrose Park, Illinois in response to Comment 9 in the Illinois Environmental Protection Agency's (IEPA's) December 21, 2009 letter to Detrex (IEPA 2009).

The following is ARCADIS' response to the comment and the revised Tier 2 groundwater demonstration.

IEPA Comment 9: *At this time, the Illinois EPA can neither approve nor disapprove the Tier 2 Evaluation for groundwater. A revised Tier 2 demonstration should be provided within 45 days of the date of this letter, in order for a determination to be made:*

a. *Revise R26 calculations using the input value of 0.023 for hydraulic gradient (i), and the GROs listed in condition 9.b below;*

b. *Utilize the highest observed concentrations at MW-10 to allow for the minimum amount of contamination in groundwater, while still achieving appropriate 35 Ill. Adm. Code 742, Tier 1, Class II GROs, at the nearest point of human exposure. Therefore, the Tier 2 GROs can be approved as follows:*

1,1-dichloroethene	*0.0467 mg/L*
Cis-1,2-dichloroethene	*27.600 mg/L*
Trichloroethene	*34.5 mg/L*

Vinyl chloride	*0.681 mg/L*

c. *Provide calculations to satisfy 35 Ill. Adm. Code 742.805(1)(c) and 742.805(1)(d), in order to use the GROs listed in Condition 9.b above;*

d. *Submit a figure which depicts the extent of groundwater contamination at well MW-10 in accordance with 35 Ill. Adm. Code 742.805(a)(1); and*

e. *Submit a copy of the water well survey (WWS) and a figure which depicts the information required by 35 Ill. Adm. Code 742.805(a)(4) through 742.805(a)(6).*

ARCADIS Response – 9.a through 9.e

9.a. ARCADIS used the requested hydraulic gradient value in the revised groundwater model. In addition, ARCADIS used the IEPA-approved hydraulic conductivity of 5.29E-07 centimeters per second (cm/sec) from the January 6, 2010 letter (Log No. B-113R-CA-11, Comment No. 25) (IEPA 2010).

9.b. Slightly higher concentrations were detected for 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC) during the November 2009 groundwater sampling event. During this sampling event, a slightly lower trichloroethene (TCE) concentration was detected. Following is a summary of the detections:

1,1-dichloroethene	0.057 mg/L
Cis-1,2-dichloroethene	30.0 mg/L
Trichloroethene	34.0 mg/L
Vinyl chloride	0.810 mg/L

The maximum detected concentrations between the 2007 and 2009 sampling events were used in the revised groundwater model, as discussed with Ms. Amy Boley on February 4, 2010. ARCADIS requests that the maximum detected concentrations be approved as the Tier 2 Groundwater Remedial Objectives (GROs) for the Outback Sales property.

9.c. The calculations described in 35 Ill. Adm. Code 742.805(c) and 742.805(d) (IEPA 2007) are associated with the additive effects of similar-acting compounds

for Class I Groundwater (drinking water). Groundwater ingestion is not a complete pathway at the Outback Sales property for the following reasons:

- Groundwater beneath the Detrex property and surrounding areas (including the Outback Sales property) has been approved as Class II Groundwater by the IEPA in a letter to Detrex dated July 18, 1996 (IEPA 1996).

- The Village of Melrose Park issued Ordinance No. 321 on November 24, 1997 prohibiting the use of groundwater as a potable water supply by installation or use of potable water supply wells. A Memorandum of Understanding was issued by the IEPA on April 24, 2000 in connection with the ordinance.

- Impacted groundwater associated with the Detrex site is not expected to migrate outside of the area covered by the Melrose Park Ordinance. the attached revised groundwater modeling indicates that impacted groundwater at Monitoring Well MW-10 will not migrate more than 4 feet at concentrations above the Tier 1 Class II GROs.

The calculations described in 35 Ill. Adm. Code 742.805(c) and 742.805(d) were not completed.

9.d. As discussed in 9.c., Tier 2 TACO modeling predicts groundwater concentrations will not exceed Tier 1 Class 2 GROs within 4 feet of Monitoring Well MW-10. Figure ~~1~~ 2 depicts the modeled extent of groundwater impacts above the Tier 1 Class II GROs at Monitoring Well MW-10._

9.e. ARCADIS completed an updated water well survey (WWS) in May 2009 which showed four private wells within approximately 2,500 feet of the Detrex and Outback Sales properties. One well, identified as IHB RR #4 is approximately 600 feet from the site, another well, which the Illinois State Well Survey (ISWS) identified as IHB #4, is located approximately 400 feet from the site, and is a re-reporting of the IHB RR#4 well in a different location. The IHB RR#4 and IHB#4 wells are both reported as being used for industrial purposes and are not potable wells. A third well, identified as Amlings Flowerland, is located approximately 1,500 feet away and is not used for potable purposes. The fourth well is located about 2,050 feet away from the site and is a City of Melrose Park Well that is no longer in use and is not likely to be used in the future. The Table and Figure include four wells that were identified in the survey that are

located more than 2,500 feet from the site for completeness. These wells are not addressed further because of their distance from the site. The WWS showing locations of wells within 2,500 feet of the Detrex and Outback Sales properties, well depths, and set back zones is included as Attachment 1. This updated WWS was provided to the IEPA in a May 12, 2009 letter to Ms. Amy Boley.

In addition, the closest identified surface waterbody to the Outback Sales property is Silver Creek, which is located approximately 2,400 feet east-northeast of the Detrex property. Silver Creek flows into the Des Plains River, which is located approximately 1.8 miles east of the Detrex and Outback Sales properties.

ARCADIS Response – Revised Tier 2 Groundwater Demonstration

ARCADIS completed a revised Tier 2 groundwater evaluation as described in 35 Ill. Adm. Code 742.805 and is requesting IEPA approval of Tier 2 GROs for the Outback Sales property located at 2555 West Le Moyne Street, Melrose Park, Cook County, Illinois (see Figure 1).

In accordance with the IEPA's Comment 9 and ARCADIS' responses above, ARCADIS revised the TACO 35 Ill. Adm. Code 742 "R26" calculations to include the hydraulic gradient and hydraulic conductivities that have been approved by the IEPA and the maximum detected concentrations of 1,1-DCE, cis-DCE, TCE and VC from Monitoring Well MW-10.

Groundwater fate and transport modeling was performed in accordance with TACO regulations (35 Ill. Adm. Code 742.810) for the Class II groundwater pathways for the Outback Sales property. The fate and transport equations presented in TACO were taken from the Risk-Based Corrective Action (RBCA) equations presented by the American Society for Testing and Materials (ASTM) (ASTM 2000). Fate and transport modeling was performed in order to evaluate the migration potential of constituents in groundwater.

The model assumes a homogeneous soil. Information collected during soil investigations at the site indicate that the top 3 feet can be highly variable because it consists of different types of fill material (sub base material below buildings, roadway base beneath road). Site soils below 3 feet are fairly homogeneous and consist of low permeability silts and clays. Groundwater at the Outback Sales property is encountered at a depth of approximately 6 to 7 feet below grade. This implies that the majority of the groundwater at the Outback

Sales property is within very low permeability silty clay, and therefore, would not migrate very far and that soil is likely to be predominantly homogeneous.

Small areas of the site have more heterogeneous soils and may result in preferential pathways. These areas appear to be where fill material extends to depths greater than 3 feet, such as utility conduits (e.g., sanitary sewer, and water lines); however, utility corridors have not been identified within 20 feet of Monitoring Well MW-10. Migration along a preferential pathway would not be represented by this model; however, migration away from the preferential pathway would be limited by the surrounding silty clays.

A distance of 4 feet was dictated by the model as the compliance point, or the point at which impacts no longer exceed the Tier 1 Class 2 GROs. This distance demonstrates that constituent migration in groundwater within the silty clay subsurface is limited.

Groundwater Component of Groundwater Ingestion

1,1-DCE, cis-DCE, TCE and VC were detected at concentrations exceeding the Tier 1 (Class II) GROs in groundwater samples collected on the Outback Sales property (MW-10). Using the RBCA approach, the concentration of the constituent at the down-gradient compliance point was predicted. The compliance distance ("X"), measured from the leading edge of the groundwater plume to the compliance point is 4 feet. This distance was chosen because it is the distance at which modeled concentrations of the above constituents no longer exceed the Tier 1 Class 2 GROs. Tier 2 fate and transport modeling was completed using TACO RBCA equation (R26) (IEPA 2007).

The highest concentrations observed from Monitoring Well MW-10 were used in the groundwater fate and transport calculations. The following input parameters were used in the fate and transport calculations:

- Distance X along the centerline of the groundwater plume: compliance point of 122 centimeters (4 feet), distance from leading edge of source area to compliance point;

- Source width perpendicular to groundwater flow direction in horizontal plane (Sw): 4572 centimeters (150 feet), see above for explanation;

- Source width perpendicular to groundwater flow direction in vertical plane: 1524 centimeters (50 feet), assumes that groundwater is impacted to the depth at which bedrock is inferred;

- Hydraulic conductivity (K): Calculated value of 5.29 x 10^{-7} cm/sec, average of slug test results. IEPA approved this value in their January 6, 2010 letter to Detrex (Log No. B-133R-CA-11, Condition 25) and requires that this value be used when applicable (IEPA 2010). This is a conservative value for the silty clay aquifer;

- Hydraulic gradient (i): 0.023 ft/ft, the hydraulic gradient between Monitoring Wells MW-10 and MW-4 that was requested to be used in the IEPA's December 21, 2009 letter to Detrex (Log No. B-133R-CA-10, Condition 9.a.) (IEPA 2009);

- Total porosity (Pt): 0.35, site specific measurement calculated from geotechnical data from soil boring DM-1.

Results of Modeling

Based on the Tier 2 groundwater evaluation, the concentrations at 4 feet downgradient are below the Tier 1 Class II GROs. The calculated concentrations are presented in Table 1 of Attachment 2. Figure 2 shows the modeled extent of groundwater impacts around Monitoring Well MW-10.

Groundwater sample results obtained from monitoring wells located on the south side of Le Moyne Avenue appear to be consistent with the results presented in the fate and transport model.

Additional Information in Support of a Tier 2 Groundwater Evaluation

The following provides additional information in support of the Tier 2 groundwater evaluation, as required in 35 Ill Adm. Code 742.805.

- Condition 742.805(a)(1) has been satisfied with Figure 1, which shows the boundaries of the Outback Sales property for which the Tier 2 Groundwater evaluation is being completed. ARCADIS is requesting that the IEPA approves Tier 2 GROs for the entire Outback Sales property.

- Condition 742.805(a)(2) has been satisfied as free product has not been identified at the Outback Sales property.

- Condition 742.805(a)(3) has been satisfied for the following reasons:

  - As stated above, groundwater at the Detrex property and surrounding areas (including the Outback Sales property) has been approved as Class II Groundwater by the IEPA.

  - An Environmental Land Use Control (ELUC) will be placed on the Outback Sales property and surrounding properties prohibiting the use of groundwater for any purposes at the properties.

  - The groundwater modeling presented in Table 1 of Attachment 2 indicates that groundwater impacts are not likely to migrate more than 4 feet from Monitoring Well MW-10.

- Conditions 742.805(a)(4) through 742.805(a)(6) are satisfied by the following:

  - A WWS was completed for the Detrex property and surrounding areas in May 2009 (Attachment 1) and shows that closest water supply well is located approximately 400 feet and is not used as a potable supply well. This well has a setback zone of 200 feet. Groundwater modeling indicates that groundwater impacts at Monitoring Well MW-10 are not likely to migrate more than 4 feet. Therefore, groundwater impacts at the Outback Sales property are not expected to reach receptors at concentrations above the Tier 1 GROs at the nearest point of human exposure.

  - The Outback Sales property is not located within the setback zones for water supply wells identified within 2,500 feet of the property.

  - As stated in ARCADIS' response to Comment 9.e. above, the closest surface waterbody to the Outback Sales property is Silver Creek and is located approximately 2,400 feet east-northeast of the property. Therefore, groundwater impacts at Monitoring Well MW-10 are not likely to migrate to Silver Creek.

- Condition 742.805(a)(7) does not apply to the Outback Sales property as engineered barriers are not being used or proposed to limit migration of constituents of concern from the soil to the groundwater.

- Condition 742.805(b) is satisfied as groundwater concentrations have not been detected above the water solubility limits for constituents detected at the Outback Sales property.

- Conditions 742.805(c) and 742.805(d) are not applicable to the Outback Sales property for the following reasons:

  - Groundwater at the property has been identified as Class II groundwater by the IEPA.

  - The Village of Melrose Park has issued an ordinance that has been approved by the IEPA that prohibits the use of groundwater within the Village for potable uses.

  - An ELUC will be placed on the property prohibiting the installation of groundwater supply wells and the use of groundwater at the property for any purposes.

Summary

ARCADIS has responded to Comment 9 of the IEPA's December 21, 2009 letter (Log No. B-133R-CA-10) and provided the revised Tier 2 groundwater demonstration as requested. The revised Tier 2 groundwater demonstration indicates that groundwater impacts observed at Monitoring Well MW-10 are not likely to migrate more than 4 feet from the location of MW-10 at concentrations above the Tier 1 Class II GROs.

Therefore, based on this modeling impacts observed at MW-10 are not likely be related to groundwater impacts from Detrex's operations. In addition, impacts at Monitoring Well MW-10 are not likely to impact potentially potable groundwater beyond the limits of the Melrose Park Ordinance (point of compliance) or surface waterbodies in the vicinity of the Outback Sales property. ARCADIS has also provided the additional information required by 35 Ill. Adm. Code 742.805.

ARCADIS respectfully requests that this Tier 2 groundwater demonstration be approved by the IEPA and that the Tier 2 GROs be approved as the maximum detected groundwater concentrations of 1,1-DCE, cis-DCE, TCE and VC on the Outback Sales property.

References

American Society for Testing and Materials (ASTM). 2000. Standard Guide for Risk-Based Corrective Action. ASTM International, West Conshohocken, PA. April 10.

Illinois Environmental Protection Agency (IEPA). 1996. Letter to Detrex Corporation. Log No. B-113-CA-2. July 18.

Illinois Environmental Protection Agency (IEPA). 2007. Title 35 of the Illinois Administrative Code Part 742 [35 Ill. Adm. Code Part 742]), Tiered Approach to Cleanup Objectives (TACO). Illinois Administrative Code Title 35, Part 742. Final: June 5.

Illinois Environmental Protection Agency (IEPA). 2009. Letter to Detrex Corporation. Log. No. B-113R-CA-10.

Illinois Environmental Protection Agency (IEPA). 2010. Letter to Detrex Corporation. Log. No. B-113R-CA-11. January 6.

Closing

It has been a pleasure working with you on this project. If you have any questions or comments, please feel free to contact Betty Locey at (248) 994-2263 or Stephen Vasas at (330) 434-1995.

Sincerely,

ARCADIS G & M of Michigan, LLC

[Author Name]
[Author Title]

Copies:

ARCADIS
Infrastructure, environment, buildings

ARCADIS G & M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241
www.arcadis-us.com

ENVIRONMENT

Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Response to Illinois Environmental Protection Agency's December 21, 2009 Letter (Log No. B-113R-CA-10) to Detrex Corporation

Date:
March 15, 2010

Contact:
Betty Locey, Ph.D., DABT

Phone:
(248) 994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.06

Dear Ms. Halteman:

ARCADIS, on behalf of the Detrex Corporation (Detrex), respectfully submits this response to the Illinois Environmental Protection Agency's (IEPA's) December 21, 2009 letter (Log No. B-113R-CA-10) to Detrex in regards to ARCADIS' July 22, 2009 "Evaluation of Data Collected on the Outback Property" report. This response includes the documents associated with the Outback Sales (Outback) property located at 2555 West Le Moyne Street in Melrose Park, Cook County, Illinois listed below.

- The Draft Environmental Land Use Control (ELUC) for the entire Outback Sales property, as requested and discussed in Comments 2, 3, 4, 5, and 6, is provided as Attachment 1.
- The *Vapor Mitigation Plan for the Outback Sales Building*, as requested in Comment 6 and discussed in Comment 7, is provided as Attachment 2.
- The *Engineered Barrier Work Plan for Outback Sales Property*, as requested in Comment 6 and discussed in Comment 8, is provided as Attachment 3.

Comment 9 was addressed in a submittal to the IEPA dated February 12, 2010. The remaining comments are being addressed, as appropriate, on an on-going basis. Semi-annual groundwater monitoring will be conducted during the 2nd quarter of 2010 and a groundwater monitoring report will be submitted to the IEPA on or by July 15, 2010.

Please feel free to contact us if you have questions or would like to have additional information.

Sincerely,

ARCADIS G & M of Michigan, LLC

Stephen Vasas
Staff Geologist

Betty Locey, Ph.D., DABT
Principal Scientist

Copies:
Mr. David Craig, Detrex Corporation
Ms. Amy Boley, Illinois Environmental Protection Agency
Mr. Stephen Nightingale, PE, Illinois Environmental Protection Agency

Attachments:
1. Draft Environmental Land Use Control for the Outback Sales property
2. Vapor Mitigation Plan for the Outback Sales Building
3. Engineered Barrier Work Plan for the Outback Sales Property

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Response to December 21, 2009 IEPA commnets regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales property

Date of Submittal 3-15-10

IEPA Permit Log No. B-113R-CA-10
Date of Last IEPA Letter on Project January 6, 2010
Log No. of Last IEPA Letter on Project B-113R-CA-11
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Response to December 21, 2009 IEPA commnets regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales property

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Response to December 21, 2009 IEPA Commnets Regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales Property, 3-15-10

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 3-9-10 (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: Robert M. Currie 3-9-10 (Date)

Title: Mr. Robert Currie, Vice Preseident

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date: _____

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

Signature of Laboratory Responsible Officer _____ Date

Mailing Address of Laboratory

_____

_____

_____

Name and Title of Laboratory Responsible Officer _____

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

County: Cook

Street Address: 2537 W. Le Moyne

Site No. (IEPA): 0311860003

City: Melrose Park

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase _____
☒ Other (describe):
Response to December 21, 2009 IEPA commnets regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales property

Date of Submittal 3-15-10

IEPA Permit Log No. B-113R-CA-10

Date of Last IEPA Letter on Project January 6, 2010

Log No. of Last IEPA Letter on Project B-113R-CA-11

Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Response to December 21, 2009 IEPA commnets regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales property

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Response to December 21, 2009 IEPA Commnets Regarding a Vapor Mitigation System and Draft Environemental Land Use Control for the Outback Sales Property 3-15-10

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident

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Professional's Signature: _____ 2-4-2010 Date:

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

_____
Name and Title of Laboratory Responsible Officer

_____

_____

_____

Detrex CORPORATION

24901 NORTHWESTERN HWY • SOUTHFIELD MI 48075 • (248) 358-5800 • FAX (248) 799-7192

July 26, 2010

Ms. Takako Halteman
Bureau of Land #33, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794
VIA: US Mail and email (Takako.Halteman@EPA.state.IL.us)

RE: Bankruptcy of Outback Sales
2555 Le Moyne St.
Melrose Park, IL

Dear Ms. Halteman:

The purpose of this letter is to confirm an earlier conversation we had concerting Outback Sales filing for Bankruptcy and to bring you up to date as to where things stand now that Outback has filed.

Our work plan for 2555 LeMoyne Ave., submitted last December, was based on verbal agreements made between Mr. Alan Davidson, owner of the Outback Sales, and Detrex. Under that agreement, Mr. Davidson agreed to sign off on the required ELUC if we installed a Vapor Mitigation system for the entire building and obtained a No Further Action/Remediation (NFA/NFR) letter. However, shortly after filing the work plan, Mr. Davidson stopped returning our calls. When Mr. Davison was finally contacted (via the real estate agent handling the property) we were informed he had filed for bankruptcy, turned the property over to a Trustee, and that further correspondence regarding the property would be handled via Union National Bank, as they were the holder of the note on the property.

I have to date spoken with Mr. Steve Kirby of Union National Bank on a number of occasions regarding the status of the property and have provided him documents regarding our investigation of the Outback property. Although the bank currently has no control over the property, Mr. Kirby believes all environmental issues at the property are directly the result of our operation and as such is unwilling to agree to an ELUC for the site unless Detrex pays all associated costs. As Detrex does not agree that all the contamination is ours, we are unwilling to agree to these terms. This has created a situation where we are unable to move forward with the installation of the Vapor Mitigation system until we have resolved all pending issues with the bank.

To that end we would like to request additional time to enter into discussions with the bank as well as to see how the terms of the July 6, 2010 letter can be modified to help us move forward with this project.

Thank you in advance for your help and consideration in addressing our concerns. If you should have any questions please feel free to give me a call at 248.358.5800 ext. 131.

Best regards,

David Craig

CC: File
B. Currie - DTRX
B. Locey – Arcadis

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

Street Address: 2537 W. Le Moyne

City: Melrose Park

County: Cook

Site No. (IEPA): 0311860003

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☒ CMP Report; Phase I Modification on Project March 9, 2011
☒ Other (describe): CMP Phase I Request for Modification #2
Date of Submittal October 14, 2011

IEPA Permit Log No. B-113R
Date of Last IEPA Letter
Log No. of Last IEPA Letter on Project B-113R-CA-16
Does this submittal include groundwater information: ☐ Yes ☒ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Corrective Measures Plan Phase I Request for Modification #2 for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Corrective Measures Plan Phase I Request for Modification #2 for the Detrex Corporation Facility at 2537 Le Moyne Avenue in Melrose Park, Illinois, October 14, 2011

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert M. Currie 10.12.11 (Date)

Title: Mr. Robert Currie, Vice Presiden, Corporate Cousel, Secretary, and Treasurer

Operator Signature: Robert M. Currie 10.12.11 (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Cousel, Secretary, and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date: _____

Professional's Name: Stephen Vasas

Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

Signature of Laboratory Responsible Officer _____ Date

Mailing Address of Laboratory

Name and Title of Laboratory Responsible Officer

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** ***(if necessary)*** - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that fall within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ 10-14-11 Date:

Professional's Name: Stephen Vasas

Professional's Seal:

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** ***(if necessary)*** - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

_____
Name and Title of Laboratory Responsible Officer

ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS G&M of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240
Fax 248 994 2241
www.arcadis-us.com

ENVIRONMENT

Ms. Takako Halteman and Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794

Subject:
Request for Corrective Measures Plan Modification for the Pilot Test
Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park
IEPA Site No.: 0311860003

Date:
October 14, 2011

Contact:
Betty Locey, PhD, DABT

Phone:
(248) 994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.0011

Dear Ms. Halteman and Ms Boley:

ARCADIS, on behalf of the Detrex Corporation (Detrex), respectfully submits this letter documenting a modification to the Corrective Measures Plan (CMP; dated December 15, 2009) for the pilot test being conducted at the Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois (Site). Additional documents submitted to the Illinois Environmental Protection Agency (IEPA) for the CMP include the CMP Addendum (dated July 7, 2010), and the Proposed Schedule and Request for Parameter Modification letter to the Illinois Environmental Protection Agency (IEPA; dated May 18, 2011).

This letter describes changes in site conditions and notable deviations in the Pilot Test from what was proposed and approved; a brief description of work that has been completed thus far; provides information regarding the discovery, analysis, and removal of dense non-aqueous phase liquid (DNAPL) in the Pilot Test Study area; and provides a brief description of the proposed next steps.

The following Sections are included in this letter:

1.0 Status Update for the Pilot Test
2.0 Summary of Notable Modifications to the Corrective Measures Plan
3.0 Discovery, Analysis, and DNAPL Recovery
4.0 Anticipated Next Steps

The following information is included in attachments to this letter:

Attachment 1 – Figures

- Figure 1 – Revised Pilot Test Layout
- Figure 2 – Original Proposed Pilot Test Layout
- Figure 3a – HVE-1 Performance Monitoring Results
- Figure 3b – VP-1 Performance Monitoring Results
- Figure 3c – VP-2 Performance Monitoring Results
- Figure 3d – VP-3 Performance Monitoring Results
- Figure 3e – VP-4 Performance Monitoring Results
- Figure 3f – VP-5 Performance Monitoring Results
- Figure 3g – VP-6 Performance Monitoring Results

Attachment 2 – Tables

- Table 1 – Pre-Pilot Test Soil Analytical Results
- Table 2 – OX-1 Sodium Permanganate Volumes
- Table 3 – OX-2 Sodium Permanganate Volumes
- Table 4 – Dense Non-Aqueous Phase Liquid Analytical Results
- Table 5 – Dense Non-Aqueous Phase Liquid Recovery

Attachment 3 – Soil Laboratory Analytical Reports

Attachment 4 – Soil Boring and Well Construction Logs

Attachment 5 – Photographic Log of Field Activities

Attachment 6 – Dense Non-Aqueous Phase Liquid Laboratory Analytical Reports

1.0 Status Update for the Pilot Test

ARCADIS has completed the pre-pilot test drilling, the high vacuum extraction (HVE) pilot test, and the oxidant infusion pilot test at the site.

- The pre-pilot test drilling was completed between May 31 and June 7, 2011. A total of 21 soil borings were completed and 29 soil samples, including two

duplicates, were collected for laboratory analysis. Soil boring locations are provided on Figure 1 in Attachment 1.

- Pre-pilot test soil samples were analyzed for chlorinated volatile organic compounds (CVOCs) following United States Environmental Protection Agency (USEPA) Method 8260 by TestAmerica Laboratories (TAL) in University Park, Illinois.
- Soil sample analytical results are summarized in Table 1 in Attachment 2 and laboratory analytical reports for the soil analysis are provided in Attachment 3.
- Soil boring and well construction logs are presented in Attachment 4.

- The HVE pilot test occurred between July 6 and August 28, 2011. The HVE pilot test well and vacuum monitoring point locations are provided on Figure 1 in Attachment 1.
  - Installation activities occurred between June 22 and June 29, 2011, and initial start-up was initiated on July 6, 2011.
  - The system was shut down on August 28, 2011.
- The oxidant infusion pilot test began on July 6, 2011 and concluded on September 29, 2011. A total of 20 gallons of 40% sodium permanganate stock solution was introduced into the oxidant wells. The locations of the oxidant infusion pilot test wells are provided on Figure 1 in Attachment 1.
  - Oxidant was introduced into the oxidant wells 15 times over the course of the pilot test.
  - The oxidant solution was diluted during each event to obtain an in-situ concentration of approximately 10%.

A photographic log of field activities is presented in Attachment 5.

ARCADIS is currently in the process of evaluating the data collected during the pilot tests and determining a path forward for remediation at the site.

2.0 Summary of Notable Modifications to the Corrective Measures Plan

ARCADIS completed the pre-pilot test drilling, pilot test installation, and the high vacuum extraction and oxidant infusion pilot tests following the procedures identified in the CMP, the CMP Addendum, and the Request for Parameter Modifications letter with some substantial deviations. These deviations listed below and are described in more detail in the following sections.

- Original location of the southern pilot test area (around BH-16) was moved approximately seven feet north,
- The HVE well and vacuum monitoring points were installed to a greater depth than originally proposed,
- The oxidant infusion open boreholes were converted to wells, and
- The pilot tests were terminated prior to the proposed schedule.

Relocation of the Southern Pilot Test Area

Due to the identification of a utility trench, the HVE well (HVE-1), the HVE vacuum monitoring points (VP-1 through VP-6), the southern oxidant well (OX-1), and the southern soil boring locations (SS-1 through SS-12) were moved approximately 7 feet north of their original proposed locations. Additionally, HVE monitoring point VP-1, installed at soil sample location SS-1, was moved approximately 2 feet east of the proposed location due to the close proximity to the gas pipeline on the west property boundary. The revised and proposed well locations are depicted on Figures 1 and 2, respectively, in Attachment 1.

Extended HVE and Vacuum Monitoring Points Installation Depths

The proposed depth for the HVE well and corresponding vacuum monitoring points was 18 feet below ground surface (bgs). During the drilling event, elevated photoionization detector (PID) readings were observed to a depth of 24 feet. The HVE well and vacuum monitoring points were therefore installed to a depth of 24 feet, screened from 14 to 24 feet, corresponding to the zone of highest observed PID readings. Soil boring and well construction logs are included in Attachment 4.

A soil sample was collected from HVE-1 at a depth of 25 feet bgs to vertically delineate soil impacts at HVE-1. The analytical results indicated that soil impacts were delineated to below site-specific soil saturation (Csat) levels. Analytical data are summarized in Table 1 of Attachment 2.

Oxidant Infusion Boreholes Converted to Wells

The oxidant infusion boreholes were originally proposed as open 6-inch diameter boreholes. During drilling, however, the boreholes collapsed due in part to the presence of large silt lenses, and were therefore converted to oxidant wells with permanent subgrade infrastructure. The wells were constructed from 2-inch diameter Schedule 40 PVC riser pipe with 2-inch diameter, 10-foot long PVC, and 0.010-inch continuous slot screens. Soil boring and well construction logs are included in Attachment 4.

Pilot Test Not Conducted for Full Proposed Timeframe

The HVE pilot test was shut down after only two months of operation, the original timeline for the pilot test was three to six months. During the pilot test air flow could not be sustained from the formation. Air had to be entrained from the surface to dewater the HVE well and keep the well screen exposed. Positive pressure was observed in the vacuum monitoring points when water levels rose due to the lack of airflow into HVE-1 and the inability to keep the HVE-1 well screen exposed. . Additionally, vacuum propagation as observed in the vapor monitoring points was inconsistent and asymmetrical. Performance monitoring data for the HVE well and vacuum monitoring points are presented in Figures 3a through 3g in Attachment 1.

In addition, the HVE system was also temporarily shut down from July 6, 2011 through July 20, 2011. This shut down was in response to what appeared to be elevated levels of vinyl chloride (VC) in the ambient air. The health and safety plan (HASP) for the pilot test called for monitoring the presence of VC using a Drager Chip Measurement System (CMS). Initial readings using the CMS indicated elevated levels of VC above the action level defined in the HASP (the Occupational Safety and Health Administration's [OSHA's] Permissible Exposure Limit [PEL] of 1 part per million [ppm]). Ambient air samples were subsequently collected and submitted to Air Toxics Laboratory in Folsom, California for quantitative analysis. Pending the analytical results, the vacuum extraction system was shut down. When analytical results showed VC levels were below the PEL, the HVE system was restarted.

Further investigation revealed that the elevated levels of tetrachloroethene (PCE) and trichloroethene (TCE) were being recorded as VC by the CMS.

The oxidant pilot test was also concluded early due to the discovery of DNAPL and silt lenses. The presence of notable silt lenses did not conform to the site conceptual model and has a substantial affect on the fluid flow and distribution. A summary of oxidant performance data for OX-1 and OX-2 is included in Tables 2 and 3, respectively, in Attachment 2.

3.0 Discovery, Analysis, and DNAPL Recovery

What appeared to be DNAPL was first observed at the site during the pre-pilot test drilling on June 6, 2011 in soil boring SS-11 at depths of 11.8 feet bgs and 16 to 18.5 feet bgs as depicted on the soil boring logs in Attachment 4.

The existence of the DNAPL like substance was discovered in HVE-1 on July 7, 2011 when the HVE well was bailed dry during start up activities for the HVE pilot test. This substance was later discovered in VP-3 on July 21, 2011 and VP-5 on July 29, 2011 when the vapor monitoring points were bailed dry as part of the HVE pilot test. The screen interval for HVE-1, VP-3, and VP-5 is 14 feet to 24 feet bgs. Soil boring logs for SS-11, HVE-1, VP-3, and VP-5 are included in Attachment 4. Photos of the substance recovered are included in Attachment 5.

Data Analysis

Two samples of the DNAPL substance (one from VP-3 and one from VP-5) were collected on August 4, 2011 and sent to TAL for analysis of volatile organic compounds (VOCs) following USEPA Method 8260 and to Zymax Forensics Laboratory for analysis of C3 through C44 and specific gravity. The analytical results indicated that the substance was indeed DNAPL, composed primarily of chlorinated constituents. Overall, greater than 99% of the material is a combination of tetrachloroethene (PCE), trichloroethene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA). Toluene is less than 0.1%. Further analysis of the results indicated that the DNAPL in both VP-3 and VP-5 was likely from the same source. Results of the NAPL analysis are included in Table 4 in Attachment 2. Laboratory analytical results for the DNAPL analysis are in provided in Attachment 6. James Moore of IEPA was notified of the potential existence of DNAPL on August 2, 2011. At this point Mr. Moore was informed of our intent to continue the pilot test and by using HVE system as a means of extracting the potential DNAPL substance via vacuum.

DNAPL Recovery

Recovery of DNAPL has been conducted eight times using a bailer and/or a peristaltic pump on July 7, July 29, August 4, August 25, August 26, September 2, September 8, and September 29, 2011. Approximately 0.7 liter (L) of DNAPL has been recovered from HVE-1, 3.6 L from VP-3, and 3.4 L from VP-5. Amounts of DNAPL recovered from each well during each event are summarized in Table 5 in Attachment 2.

4.0 Anticipated Next Steps

ARCADIS anticipates the completion of the post-pilot test soil borings in the area of the northern oxidant infusion well pilot test locations (around OX-2) to determine how far the oxidant (sodium permanganate) propagated into the subsurface. Soil borings will be installed adjacent to the pre-pilot test soil borings and soil samples will be collected at corresponding depths.

An alternate oxidant, such as sodium persulfate or Fenton's reagent, may be evaluated for use at the site. If additional pilot test activities are proposed, an extension will be requested to prepare the pilot test report and the report prepared when those activities are complete. If an additional pilot test alternative is not proposed and completed the pilot test completion report will be prepared and submitted to the IEPA as currently planned.

Closing

Feel free to contact us at (248) 994-2263 if you want additional information or would like to discuss this further.

Sincerely,

ARCADIS G&M of Michigan, LLC

Mark Klemmer
Principal Engineer

Stephen Vasas, PG
Senior Geologist

Betty Locey, PhD, DABT
Principal Scientist

Copies:
Mr. David Craig, Detrex Corporation

Illinois Environmental Protection Agency
Bureau of Land
Class V Injection Well Inventory Form

1. Date Prepared: 04/29/2011 2. County: Cook

3. Prepared by: Jeanine Smith

Company/Agency: ARCADIS US, Inc.

Phone Number: (248) 994-2240

4. IEPA Site Number: 0311860003

☐ Indicate here if a number has not been previously assigned by the Bureau of Land and provide the Township name: _____

5. Facility Transaction (Check One):

☑ First Time Entry ☐ Modify Entry

6. Facility Name: Detrex Corporation

Facility Contact: David Craig

Facility Phone Number: ~~(248) 358-5800~~ 708.345.3806

Facility Address: 2537 West Le Moyne

City: Melrose Park

State: IL Zip Code: 60160

7. Owner: Detrex Corporation

Owner's Organization: Detrex Corporation

Owner's Phone Number: (248) 358-5800

Owner's Address: 24901 Northwestern Highway

City: Southfield

State: MI Zip Code: 48075

8. Ownership (Check One) ☑ Private ☐ Public ☐ State ☐ Federal

☐ Other (specify) _____

9. Injection Fluid Information

Description of fluid: 10% Sodium Permanganate (100 grams per liter [g/L])

Is all of the fluid to be injected generated at this facility (Check One)?

☐ Yes ☑ No

If no, indicate the name and address of the facility(s) where the fluid is generated: Carus Corporation 315 Fifth Street, P.O. Box 599, Peru, Illinois 61354

This Agency is authorized to require this information under the Illinois Environmental Protection Act 415 ILCS 5/39. Disclosure of this information is required and failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

IL532-2043 LPC443

10. Distance to closest drinking water well (in feet): 2,050

If the distance is 200 feet or less, please include the date of completion of the drinking water well: _____

Ownership of the drinking water well: ☑ Public ☐ Private

11. Well Information"

A. Well Code	B. Total Wells this code	C. Well Status	D. Well Location Latitude Degree Minute Seconds	Longitude Degree Minute Seconds	E Well Transaction
5X26	2	UC	53 12 59.22017	076 09 42.79834	A

12. Comments (optional): Location is approximate anticipated location of southern well.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner: Jon P Craig Date: 05.24.11

Operator: Jon P Craig Date: 05.24.11

IL532-2043 LPC 443

ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS G&M of Michigan, LLC
10559 Citation Drive
Suite 100
Brighton
Michigan 48116
Tel: 810 225-1910
Fax: 810 229-8837
www.arcadis-us.com

ENVIRONMENT

Ms. Takako Halteman and Ms. Amy Boley
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794

Subject:
Request for Extension – Pilot Test Report
Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park
IEPA Site No.: 0311860003

Date:
December 29, 2011

Contact:
Betty Locey, PhD, DABT

Phone:
(248) 994-2263

Email:
Betty.Locey@arcadis-us.com

Our ref:
SFE04017.0011

Dear Ms. Halteman and Ms Boley:

ARCADIS respectfully submits this letter requesting an extension for the Pilot Test Report for the Detrex Melrose Park Facility located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois on behalf of the Detrex Corporation (Detrex).

As described in ARCADIS' October 17, 2011 letter to the Illinois Environmental Protection Agency (IEPA) requesting modification to the Corrective Measures Plan (CMP), non-aqueous phase liquid (DNAPL) was identified in one of the Pilot Test areas. As a result, some planned activities had to be modified and Post Pilot Test data were not collected until December 7th and 8th, 2011.

As discussed by Mr. David Craig of Detrex and Ms. Takako Halteman of IEPA during a call on November 29th 2011, Detrex requests an extension on the Pilot Test Report[1] submittal to provide time to fully evaluate data and consider alternative approaches. As discussed by Ms. Takako Halteman and Ms. Betty Locey on December 29th 2011, the Report will be submitted to IEPA on, or before, March 15th, 2012.

Please feel to contact us at (810) 225-1919 if you want additional information or would like to discuss this further.

Sincerely,

ARCADIS G&M of Michigan, LLC

Stephen Vasas, PG
Senior Geologist

Betty Locey, PhD, DABT
Principal Scientist

Copies:
Mr. David Craig, Detrex Corporation

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[1] Originally to be submitted December 29th 2011.

Imagine the result

Detrex CORPORATION
24901 NORTHWESTERN HWY • SOUTHFIELD, MI 48086-5111 • (248) 358-5800 • FAX (248) 799-7192

August 29, 2012

Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794
Via: email (Takako.halteman@illinois.gov)

RE: Phase II Corrective Measures Plan extension request
Detrex Corporation
2537 Lemoyne Ave
Melrose Park, IL
Site number: 0311860003

Ms. Halteman:

As per our phone conversation of August 28, 2012, Detrex Corporation would like to respectfully request extending the submission date of our Phase II Corrective Measures Plan (CMP) to December 15, 2012. The extension is needed to allow our new consultant the needed time to come up to speed on the project.

Detrex Corporation recently reviewed proposals from three different consultants (Arcadis, Pioneer and Huff & Huff) for remediation of our site. After careful consideration the contract for the remediation project was awarded to Huff and Huff on August 27th. The planned treatment will involve the use of microscale Emulsified Zero Valent Iron (EZVI).

In general ZVI reacts with the HVOCs to reduce them into ethenes and ethanes. The reaction is relatively quick with the majority of the reduction occurring within the first couple of months. It is my understanding that any excess micro scale iron will remain available for reaction for at least three years. Nano scale iron is being avoided as the cost is considerably more and it does not have the longevity of the micro scale iron. In addition, as the emulsified vegetable oil is hydrophobic it seeks out the CVOCs, increasing contact with the iron. The vegetable oil also provides a food source for microorganisms in the soil to grow. I have attached some literature regarding the use of ZVI/EZVI as the treatment method.

Prior to treatment Huff & Huff will collect additional data from the site using a Membrane Interface Probe (MIP). Data obtained from the MIP will be converted into three dimensional images to give us a better idea of where the CVOCs reside. A workplan for sampling will be submitted for review, however, to keep things moving along we will likely go forward with the investigation once the work plan has been submitted (if additional data is deemed necessary we

will remobilize). As the MIP is a direct push technology there will be limited waste generated; however, any waste that is generated will be properly handled and disposed.

Our current long term plans are to cease operations (shortly after the end of the year), decontaminate the storage areas and obtain closure of the permit, sell the property to LaMantia Plastics (they have expressed interest in the purchase of the property), demo the building and then begin remediation. As such, remediation will likely not begin until spring of next year. Demoing the building will allow us to use soil mixing rather than injection to deliver the EZVI into the soil. In addition to being easier to implement, mixing will ensure better comingling of the soil and EZVI by avoiding short circuiting of EZVI due to injection. This will ensure a more thorough reduction and help eliminate concerns for rebound.

Detrex would like to thank you in advance for your help and consideration in providing an extension to the submission of our CMP. If you have any questions, or would like to set up a conference call or meeting with our new consultant, please feel free to give me a call (248.358.5800 ext. 131).

Sincerely,

David Craig
Manager of Environmental and Safety Compliance

Huff & Huff, incorporated
environmental engineers
and consultants

915 Harger Road, Suite 330
Oak Brook, IL 60523
Phone (630) 684-9100
Fax (630) 684-9120
Website: http://huffnhuff.com

Via email: Takako.halteman@illinois.gov

November 20, 2012

Ms. Takako Halteman
Bureau of Land, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794

Re: RFI Work Plan Supplement-Revised
Detrex Corporation
2537 Lemoyne Ave
Melrose Park, IL
Site Number: 0311860003

Dear Ms. Halteman:

Huff & Huff, Inc. has been retained by Detrex to proceed toward remediation of the above referenced site, as David Craig of Detrex Corporation (Detrex) indicated in his August 29, 2012 letter to you. Prior to remediation, we would like to gain an even better definition on where contaminant levels are present above the soil saturation level. This will be important when designing the treatment program. To further assist us in this effort, we are proposing to utilize a Membrane Interface Probe (MIP) to track the contaminant real time. This will allow us to prepare a three-dimensional model of where the contaminant levels exceed the soil saturation values. The three-dimensional model will include historical data to provide as complete as picture as possible.

Figure 1 is a Site Location Map depicting the Detrex property, surrounded by industrial properties. Figure 2 presents the identified Solid Waste Management Units (SWMUs) for this property. The railroad spur on the north side where tank cars were unloaded is a SMWU, as is the loading dock area located on the southwest side of the property. Figure 3 depicts the surficial and subsurface soil results above the soil saturation objectives, which are concentrated in these two SWMUs.

Geology/Hydrogeology

The site is underlain with a fill material primarily of sand and gravel, with varying amounts of silt and extending between 1 and 4 ft below ground surface (bgs). Beneath the fill is a silt and clay formation from glacial origin, which is estimated to be 48 feet in thickness. There are discontinuous sandy clay, and sand lenses encountered in the predominantly clay material. Bedrock is present at approximately 55 feet bgs based on boring DM-2.

Groundwater is encountered between 1.5 and 7.5 ft bgs, within the silt and clay unit. Groundwater transport seems to be occurring primarily between 8 and 13 ft bgs. Based on the low hydraulic conductivity, the groundwater has been previously determined to be Class 2 Groundwater.

Remedial Objectives

The remedial objectives (ROs) are the site specific soil saturation (C_{sat}) values approved for this site[1], with the use of engineered barriers and groundwater use restrictions. These objectives are listed below:

Depth	0-3 ft	>3 ft
1,1,1-Trichloroethane, mg/kg	1,570	2,240
Tetrachloroethylene, mg/kg	425	436
Trichloroethylene, mg/kg	1,767	2,550

Based on the extensive data collected at the site, the trichloroethylene (TCE) is the primary contaminant. 1,1,1-trichloroethane (TCA) has been detected above its ROs at two locations, and PCE has been found in six locations above its ROs.

Membrane Interface Probe (MIP) Investigation

The goal of the MIP investigation is to better delineate the areas that exceed the ROs listed above. There are two Figure 4s depicting the TCE results across the site, one with the previous results shown and one without the previous results. TCE is the primary contaminant that does not meet the ROs, as noted above. Based on the historic analytical results it is apparent that additional vertical delineation is necessary. The highest TCE concentrations with depth are present in the truck dock area, extending from 4 to 17 feet below ground surface. The MIP will provide output in micro-volts (uV), and a good correlation between the MIP results and TCE concentrations can be expected as TCE is the dominant constituent at this site.

[1] Letter from Stephen F. Nightingale, IEPA to David Craig, Detrex, January 6, 2010.

The rationale for the locations for the MIP investigation is presented in Table 1. MIP borings are numbered with 100 series, and where nearby a previous boring, the same last two digits were utilized as the previous borings, so the MIP borings are not sequential. All MIP borings will be extended down to a depth of 24 feet below grade, unless data indicate that contamination potentially exists at concentrations exceeding ROs below this depth. When conditions warrant, sampling will be extended up to a depth of 30 feet below grade.

MIP sampling is first planned to be completed at locations adjacent to six historic boreholes having analytical results (PCE or TCE) above the ROs. These MIP borings (101, 109, 113, 114, 116, and 117) are planned to compare historical analytical results directly with the MIP data.

North Side: Our plan is to start along the north side along the railroad spur, where access has historically been restricted by the thick scrub vegetation. This vegetation has been removed, which will allow a hand cart or track-rig Geoprobe unit to move freely in this area. From the previous result north the railroad tracks, there is a need to go deeper in portions of this area. A total of eight MIP borings will be installed (101, 102, 103, 104, 109, 119, 121, 122). As the railroad track is depressed by three feet, the surface nearby the track will be called 3 ft below bgs, and the MIP will collect data from the surface to 24 ft bgs, or 21 feet total. MIP 104 and MIP 119 are located on the loading dock adjacent to the railroad spur where TCE concentrations were previously detected to determine if levels of TCE warranting treatment have migrated beneath the loading dock, and will extend to 24 ft bgs unless the earlier MIP borings along the railroad spur suggest contaminants above the RO are present deeper. MIP 102 is in the northwest corner of the property, and will also extend to 24 ft bgs. This MIP boring is immediately northwest of the three ASTs along the west side of the property. The goal in this area is to define the vertical extent of RO exceedences and also the extent to the east. Two of the soil borings, MIP 101 and MIP 109 will be adjacent to existing borings to previous borings where analytical results can be directly compared the MIP data.

Building: MIP borings are proposed at six locations in the building (105, 107, 111, 118, 123, 135), starting with MIP 105 at the location in the center of the former hazardous waste container storage area, south of this point is 123, 107 is immediately east of the inside AST diked area, and the remaining three MIP borings (111, 118, and 135) will border the Truck Dock area, an area with known contaminant levels above the ROs, to define the extent of RO exceedences to the north and east of the Truck Dock area. MIP boring 123 is planned for further investigation of the southeast portion of the building. The remaining MIP borings within the building will extend to 24 ft, unless the first borings indicate source material has extended deeper.

Truck Dock: MIP borings are planned at five locations to address the Truck Dock area (113, 114, 116, 134, and 137). Three of the five MIP borings will be placed adjacent to existing soil

borings (BH1, BH3, and APG-04), and can be used to help correlate the MIP results to the analytical results.

West Side: MIP borings are planned at seven locations on the west side of the site (106, 108, 112, 115, 117, 120, 124, and 136). MIP 124, 115, and 120 are located north, west, and south of BH17 to better define the contaminant levels in this area. MIP 106 is directly west of the three ASTs. MIP boring 108 is adjacent to BH16, where PCE and TCE were found above the C_{sat} value from 12 to 14 ft. TCE levels at the BH16 location were above 5.7 mg/kg from ground surface to depths of 30 ft bgs. MIP boring 117 is adjacent to BH17, where PCE was found above the C_{sat} value from 4 to 6 ft and TCE was present from the surface to 14 ft at concentrations above 1 mg/kg. This MIP location will serve to correlate the MIP results to the previous analytical. MIP 136 will be located near previous borings BH13 and BH36 where elevated TCE levels were detected from the surface to 12 ft bgs. MIP 112 will be in the southwest corner and will also be drilled to 24 ft bgs to verify the levels at this corner of the property. There are sufficient nearby borings to indicate C_{sat} concentrations will not be present below this depth.

Other: The advantage of the MIP technology is the real time information obtained. The above borings total 26 locations on the 0.33 acre site, which will provide excellent coverage. However, if an unexpected high level of contamination is discovered, additional MIP investigation will be conducted. Any additional locations will be based on the results obtained in the field.

Soil Analytical

There exists significant soil analytical data on this site already, and six of the MIP borings will be placed adjacent to previous soil borings that can be utilized for developing a correlation between MIP readings and contaminant concentrations. As remediation will be in those areas above the C_{sat} concentrations, the focus for confirming analytical results will be at those locations that are believed to be just below the C_{sat} levels. Areas that are obviously well below the C_{sat} based on the MIP do not need to be confirmed. Those areas where free product is suspected are planned to be actively remediated. However, as the areas of free product at select locations are based on analytical data which is 17 to 19 years old, assessment of current soil conditions in the free product areas is necessary. It is difficult to pre-identify the MIP borings and depths where soil samples will be collected. However, we would commit to a minimum of ten soil borings with a minimum of two soil samples per soil boring, again focusing on those locations which are believed to be at or above RO concentrations. An additional three borings with two samples per boring are planned in an area of C_{sat} exceedance. A minimum of 26 additional soil analytical results will be obtained. Samples will be collected for select halogenated volatile organic compounds (HVOCs) by Method 5035 using disposable 5-gm coring sampling devices and analyzed by 8260B, as outlined in SW846. Analyses will be for the following compounds:

- PCE
- TCE
- 1,1,1-Trichloroethane
- Cis-1,2-dichlorethylene (cis-DCE)
- Vinyl chloride

PROCEDURES

MIP: The MIP procedures will be in accordance with ASTM Standard D 7352-07, *Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe (MIP).* Chlorinated solvents will be detected utilizing an electron capture detector (ECD), as well as a photoionization detector (PID) and flame ionization detector (FID) on the unit. Preparation/conditioning and procedures for startup are outlined within this Standard, and will be followed. The MIP probe is also equipped with an integrated electrical conductivity (EC) array to provide indication of general soil particle size, to help determine zones of sands, silts, and clays.

Soil Sampling: Soil borings will be advanced using either a hand cart, track-mounted, or truck-mounted GeoProbe system to collect soil samples. The GeoProbe system pneumatically advances a 2-inch diameter core sampler to the desired sample depth. Core samplers will be used, which are lined with a plastic sleeve for collecting the soil sample. The plastic sleeve is removed from the core sampler with the soil sample inside. After the soil sample is collected in the appropriate sample container, the plastic sleeve is discarded to prevent cross-contamination. The only part of the core sampler that is reused is the tip, which will be decontaminated as discussed in a later section.

Field Screening: Samples will be assessed for the presence of COCs after laboratory sample collection.

- Samples will be visually inspected for soil type and color, water content, and contaminant-related materials;

- A PID with 11.7eV lamp will be used to screen a portion of each sampling interval for the presence of HVOCs, using a closed-cup protocol. A portion of the soil sample will be placed in a plastic ziplock bag. The ziplock bag will be set aside for a minimum of 15 minutes in a warmed area, to allow the concentration of volatiles in the headspace to come into equilibrium with the concentration of volatiles in the soil. A small portion of the baggie will be opened and the PID probe will be inserted into the headspace. PID responses will be provided in parts per million (ppm) readings.

  The sample's peak PID response will be recorded as the PID reading for the sample. The PID meter has a detection range from 1 ppm to 2,000 ppm, and is calibrated to read in

equivalent ppm of benzene. This headspace method allows detection of volatiles at relatively low detection levels, and the method is reproducible.

The portion of the soil used for field screening will not be sent to the laboratory for analysis. A separate, undisturbed portion of each sampling interval will be collected in laboratory-provided containers.

QA/QC Samples: Field QA/QC will include the collection and/or designation of field blanks, trip blanks, and field duplicates.

- One trip blank will be included with each cooler;
- One rinsate blank will be collected for every 10 samples analyzed using non-disposable sampling equipment;
- One duplicate will be collected for every 10 samples analyzed.

Sample Preservation

Containers. Soil and groundwater samples will be placed in containers provided by the laboratory. The soil and groundwater containers will meet the minimum quality requirements set forth in USEPA "OSWER Directive No. 9240.0-05A, Specifications and Guidance for Contaminant-Free Sample Containers."

Additives. Samples will be preserved with methanol for the high level analysis of the VOCs. The preserved VOC bottles will be provided by the laboratory, pre-weighed.

Temperature Control. Samples will be stored in coolers with ice. Samples will be placed in the coolers as soon as possible after sample collection and will remain in the coolers during transport from the field to the laboratory.

Sample Identification/Labels

Samples will be identified by sticker-labels affixed to the container. The labels will be prepared before field work begins. The information will be recorded in ink.

The information recorded on the labels will include:

- Project name
- Sample location identification
- Sample depth
- Date
- Initials of sampler

Sample Packing

The following procedures will be used to assure the integrity of sample containers during shipping:

- Careful packing of sample in coolers to prevent breakage (e.g., use of packing materials);
- Placement of each sample container in an individual plastic bag to help assure containment, prevention of cross-contamination, and protection of labels;
- Double-bagging of ice to minimize potential for water damage to labels and/or seepage into containers;
- All coolers will be properly secured to prevent tampering.
-

Sample Custody

Chain-of-custody will begin as soon as a sample is collected. Once sample labels are placed on sample containers, the containers will be documented on a chain-of-custody form. The chain-of-custody form will accompany the samples until they are analyzed; the form will be sealed in a plastic bag and be placed in the inside of the sample cooler.

The laboratory will provide the blank forms and will return the original completed forms with the analytical results.

Equipment Decontamination

Any equipment in contact with soil samples will be decontaminated before each use. Decontamination will be performed on site, in an area located away from the sampling activities. All decontamination waters will be captured and containerized.

Decontamination of sampling equipment will be performed in the following steps:

1. Tap water and Alconox wash and scrub
2. Tap water rinse
3. Distilled water rinse
4. Methanol rinse
5. Distilled water rinse
6. Thorough air drying

Decontamination of reusable personal protective equipment will be the same as decontamination of sampling equipment. One-time use equipment, such as latex gloves, will be disposed of with soil cuttings.

Investigation-Derived Waste Management

The following general guidelines will be followed for management of investigation and remediation-derived waste:

- Soil cuttings will be contained in 55-gallon drums.
- Decon water will be collected in 55-gallon drums.
- Disposable personal protective equipment will be placed with the soil cuttings.
- Both the soil and water drums will be labeled as *Hazardous Waste* and a start date of accumulation clearly marked on each drum, along with a unique identifier for tracking purposes, the owner name, contents, and contact name and phone number.
- Samples will be collected from both the soil and water drums for characterization for disposal.

Documentation

Field documentation will be sufficient to:

- Permit another professional to understand what tasks were performed;
- Identify the procedures, equipment, and materials used in sufficient detail to allow reproducibility of results; and
- Identify other evidence, as appropriate, that supports the findings.
-

Each document will include the following information, at a minimum:

- Project identifier;
- Date (and time as appropriate);
- Location / work area, including exact sample locations;
- Names of personnel involved;
- Activities performed and order in which they are performed;
- Field measurement data;
- Equipment calibration / maintenance;
- Types of equipment and construction materials; and
- Observations regarding potential contamination.

Closing

Huff & Huff, Inc. is prepared to mobilize to the site as soon as possible upon the Agency's review and approval of this RFI Work Plan Supplement. We believe the MIP information will prove invaluable in designing a cost effective remedy for this site, and we look forward to working with you toward a successful remediation. Should the Agency have any questions or comments, we would welcome an opportunity to meet in Springfield to discuss the approach outlined herein to expedite moving forward toward remediation.

Sincerely;

James E. Huff, P.E.

cc. D. Craig, Detrex Corporation

R:\Detrex\Remedial Investigataion 2012\Remedial Investigation Plan 092112 .doc

TABLE 1
DETREX MEMBRANE INTERFACE PROBE
BORING KEY

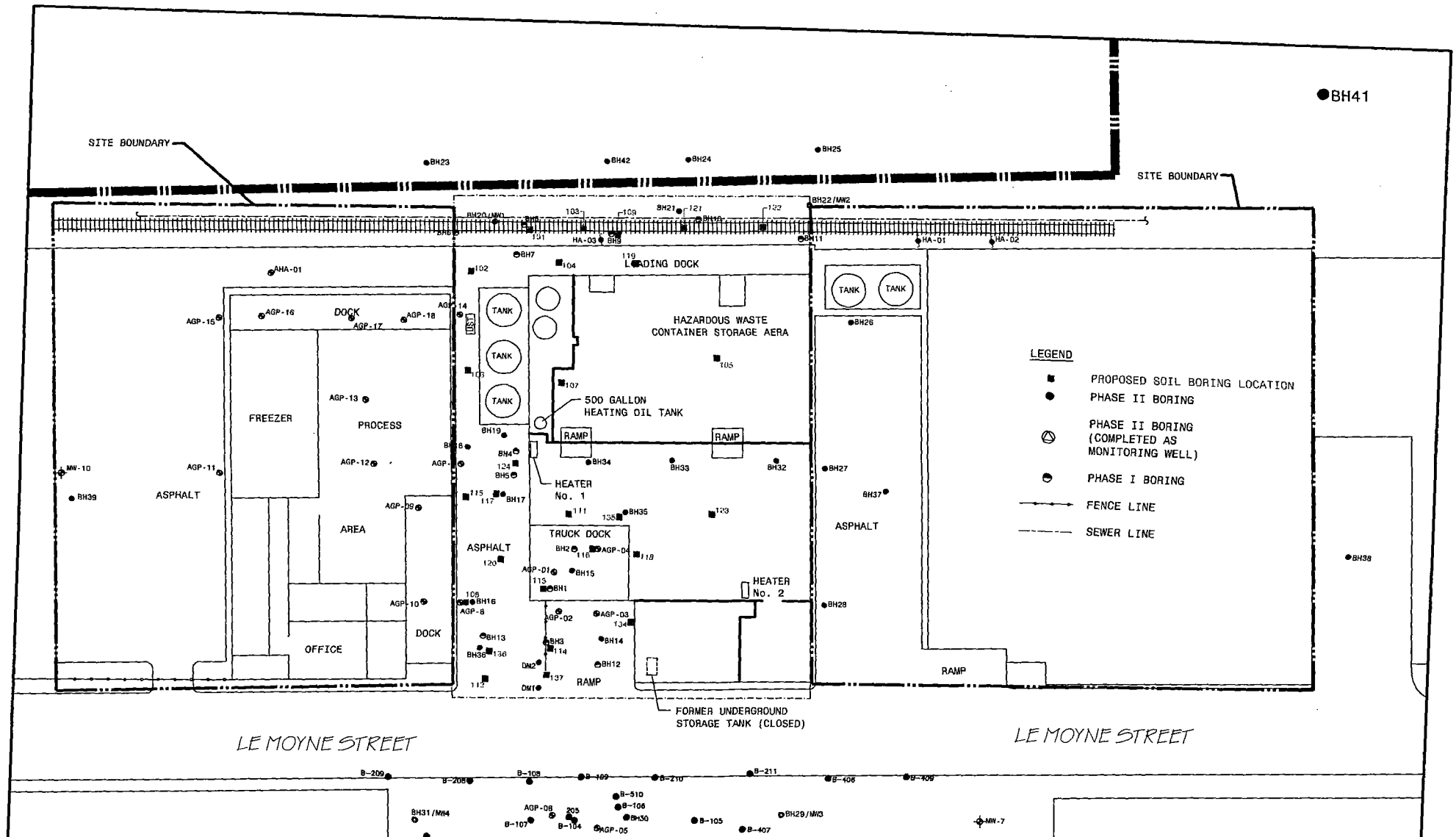
Location	Boring Number	Depth Interval, ft	Minimum Depth bgs, ft [c/]	Rationale
North Side	101 [a/]	3 to 24	24	Define depth at BH8, along rail spur [b/]
	102	0 to 24	24	Verify no source from ASTs, northwest of ASTs
	103	3 to 24	24	Define extent between BH8 and BH9, along rail spur [b/]
	104	1 to 24	24	Define source from rail line to south, on loading dock
	109 [a/]	3 to 24	24	Define depth at BH9. along rail spur [b/]
	119	1 to 24	24	Define source from rail line to south, on loading dock
	121	3 to 24	24	Define east edge of source material, along rail spur [b/]
	122	3 to 24	24	Verify no source east of 121, along rail spur [b/]
Building	105	1 to 24	24	Investigate Haz Waste container storage
	107	1 to 24	24	Investigate deeper within building
	111	1 to 24	24	Investigate north of truck dock
	118	1 to 24	24	Investigate east of truck dock
	123	1 to 24	24	Investigate SE portion of building
	135	1 to 24	24	Investigate truck dock migration
Truck Dock	113 [a/]	1 to 24	24	Verify source material does not extend to depth
	114 [a/]	3 to 24	24	Verify source material does not extend to depth
	116 [a/]	2 to 24	24	Verify source material does not extend to depth [b/]
	134	2 to 24	24	Verify truck dock material does not extend to east
	137	2 to 24	24	Verify truck dock material does not extend to south
West Side	106	0 to 24	24	Verify no source from ASTs, west of ASTs
	108 [a/]	0 to 24	24	Verify extent of free product (TCE & PCE) at BH16, 12-14 ft
	117 [a/]	1 to 24	24	Define extent at BH17
	112	1 to 24	24	Verify extent of source material to southwest
	115	1 to 24	24	Verify extent west of BH17
	120	1 to 24	24	Verify extent south of BH17
	124	1 to 24	24	Determine presence/absence of free product
	136	1 to 24	24	Verify extent to the west

a/ Boring is planned for placement adjacent to historic soil boring with RO exceedance.

b/ Railroad spur area starts at -3 feet bgs, and the area of the truck dock within the building varies to -3 ft bgs.

c/ Minimum depth will be based on results of source area MIP borings and determined based on field results.

Revised 11-19-12



BASE MAP BY ARCADIS
CADFILE: DETREX SBLM

FIGURE 4
PROPOSED SOIL BORING LOCATIONS
DETREX CORPORATION
MELROSE PARK, ILLINOIS

K-4
2012 Semi-Annual GW Monitoring Reports

2nd QTR 2012

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 FACILITY IDENTIFICATION

Name: Detrex Corp Sovent & Env Svc.

Street Address: 2537 W. Le Moyne

City: Melrose Park

County: Cook

Site No. (IEPA): 0311860003

Site No. (USEPA): ILD074424938

2.0 OWNER INFORMATION

Name: Detrex Corporation

Mailing Address: 24901 Northwestern Highway

Suite 410

Southfield, Michigan 48075-5111

Contact Name: David Craig

Contact Title: Risk Management

Phone No.: 248-358-5800 ext. 131

3.0 OPERATOR INFORMATION

4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report; Phase
☒ Other (describe):
Semi-Annual Groundwater Monitoring Report
Date of Submittal 7/13/12

IEPA Permit Log No. B-113R
Date of Last IEPA Letter on Project July 3, 2012
Log No. of Last IEPA Letter on Project B-113R-CA-21
Does this submittal include groundwater information: ☒ Yes ☐ No

5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Semi-annual groundwater monitoring report providing the results of the 2nd quarter 2012 routine sampling event.

6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Semi-Annual Groundwater Monitoring Report - 2nd Quarter 2012, dated 7/13/12

7.0 CERTIFICATION STATEMENT - ***(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below).*** The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ 7/5/2012 Date

Professional's Name: Stephen Vasas

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

LICENSED PROFESSIONAL GEOLOGIST
STEPHEN MICHAEL VASAS
196-001227
ILLINOIS

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

_____
Signature of Laboratory Responsible Officer — Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

_____
Name and Title of Laboratory Responsible Officer

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: Robert W. Currie 07.05.12 (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: Robert W. Currie 07.05.12 (Date)

Title: Mr. Robert Currie, Vice Preseident, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street
Suite 2400
Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

2417 Bond Street

University Park, Illinois 60484

Name and Title of Laboratory Responsible Officer

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

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A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

Operator Signature: _____ _____ (Date)

Title: Mr. Robert Currie, Vice President, Corporate Counsel, Secretary and Treasurer

7.2 **PROFESSIONAL CERTIFICATION** *(if necessary)* - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: _____ _____ Date:

Professional's Name: Stephen Vasas Professional's Seal:

Professional's Address: 520 South Main Street

Suite 2400

Akron, Ohio 44311

Professional's Phone No.: 330-434-1995, ext. 168

7.3 **LABORATORY CERTIFICATION** *(if necessary)* - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory Test America, Inc.

Michael J. Healy 7-5-12
Signature of Laboratory Responsible Officer Date

Mailing Address of Laboratory

Michael J. Healy, Lab Director
Name and Title of Laboratory Responsible Officer

2417 Bond Street

University Park, Illinois 60484

Illinois
Environmental
Protection Agency

Bureau of Land
1021 North Grand Avenue East
Box 19276
Springfield, IL 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: Detrex Corp Sovent & Env Svc. Site ID #: 0311860003
Facility Address: 2537 W. Le Moyne, Melrose Park Fed ID #: ILD074424938

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

X LPC-160 Forms

Groundwater
___ Quarterly – Indicate one: 1 2 3 4
X Semi-Annual
___ Annual
___ Biennial

Leachate
___ Quarterly – Indicate one: 1 2 3 4
___ Semi-Annual
___ Annual
___ Biennial

___ Groundwater Data (without LPC-160 Forms)
___ Quarterly – Indicate one: 1 2 3 4
___ Annual ___ Semi-Annual ___ Biennial

___ Well Construction Information
___ Well Construction Forms, Boring Logs and/or Abandonment Forms
___ Well Survey Data (e.g., Stick-up Elevation Data)

___ Notice of Statistically Significant Evidence of Groundwater Contamination (35 Ill. Adm. Code 724.198)

___ Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))

___ Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 Ill. Adm. Code 724.199(i))

___ Gas Monitoring Reports

___ Other (identify) _____

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Detrex Corporation
0311860003 – Cook County
ILD074424938
Log No.: B-113R
Permit CA
RCRA - Permit

Semiannual Groundwater Monitoring Report 2nd Quarter 2012

Detrex Melrose Park Facility
Melrose Park, Illinois

July 13, 2012

ARCADIS

Jeanine Smith
Project Life Scientist

Stephen Vasas, PG
Senior Geologist

Betty Locey, PhD, DABT
Project Director

Semiannual Groundwater Monitoring Report
2nd Quarter 2012

Detrex Melrose Park Facility
Melrose Park, Illinois

Prepared for:
Detrex Corporation

Prepared by:
ARCADIS G&M of Michigan, LLC
10559 Citation Drive, Suite 100
Brighton,
Michigan 48116
Tel 810.229.8594
Fax 810.229.8837

Our Ref.:
SFE04017.0014.00001

Date:
July 13, 2012

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Table of Contents

1. **Introduction** 1

2. **Background Information** 1

3. **Description of Field Activities** 3

4. **Laboratory Analysis** 4

5. **Results** 4

   5.1 Groundwater Elevations and Apparent Flow 4

   5.2 Comparison to Class II Groundwater Remedial Objectives 5

   5.3 Constituent Distribution 6

6. **Request for Reduction in Constituents of Concern** 6

7. **Anticipated Future Activities** 6

8. **References** 7

Tables

Table 1 Groundwater Elevation Data

Table 2 Summary of 2nd Quarter 2012 Groundwater Analytical Results

Table 3 Summary of All Groundwater Analytical Results

Figures

Figure 1 Site Location Map

Figure 2 Site Layout Map

Figure 3 Groundwater Elevations, 2nd Quarter 2012

Figure 4 Groundwater Analytical Results, 2nd Quarter 2012

Figure 5 Trichloroethene Isoconcentration Contours

Figure 6 cis-1,2-Dichloroethene Isoconcentration Contours

Figure 7 1,1-Dichloroethene Isoconcentration Contours

Figure 8 1,1,1-Trichloroethane Isoconcentration Contours

Appendices

A Laboratory Analytical Reports, Validation Report, and Electronic Data Submittal

B Previous Groundwater Flow Maps – 2007 through 2011

1. Introduction

ARCADIS prepared this Semiannual Groundwater Monitoring Report on behalf of Detrex Corporation (Detrex) to summarize the results of groundwater monitoring activities conducted during the 2nd quarter of 2012 at the Detrex Melrose Park Facility site (Detrex property and limited portions of adjacent properties). The Detrex property is located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois (see Figure 1).

This report provides a description of field activities and presents analytical data collected at the Site. Comparisons of analytical data to the Illinois Environmental Protection Agency's (IEPA's) Tiered Approach to Corrective Action Objectives (TACO) for Class II Groundwater Remedial Objectives (ROs) are also provided. In addition to this report, ARCADIS submitted the analytical data in electronic format to Mr. Bur Filson of the IEPA for incorporation into the Illinois Storet database on July 12, 2012.

This report provides groundwater information consistent with IEPA's format and includes information requested in IEPA's July 9, 2009 letter to Detrex.

2. Background Information

The Detrex property is located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois (see Figure 1) and is comprised of approximately 0.33 acres. Detrex started operations at this location in 1974. Except for the railway siding, the entire Detrex property is covered by the building or paved parking areas (see Figure 2). A former railroad track is located immediately behind the Detrex building to the north. The railroad track is no longer in use and is overgrown with trees and other plants.

Detrex began operations at this location in 1974. The Detrex building was constructed in 1956. Detrex leased the building from Clauss Industrial until they purchased the building in 1998 from Richard R. LaReno. Detrex specialized in the sale of halogenated solvents, cleaning equipment, and other related products.

The property is zoned "G – Industrial" and is surrounded by properties used for either commercial or industrial purposes. The future use of the Detrex property will continue to be industrial. Properties in the immediate vicinity of the Detrex property include other single-story, light industrial warehouse-type buildings similar to Detrex's, as well as a car dealership and former button factory. Nearby properties include the following:

- South of the Detrex property: B&G Sales, Inc. (B&G Sales; the former Handy Button property; 1740/1750 North 25th Avenue)

- West of the Detrex property:
  - Formerly Outback Sales (formerly Finish Line; 2555 West Le Moyne Street)
  - Dynamic Fastener (formerly Sitex; 2575 West Le Moyne Street)
  - Midwest REM Enterprises (2601 West Le Moyne Street)

- North of the Detrex property: Al Piemonte Ford (2500 West North Avenue)

- Northeast of the Detrex property: United States Post Office (1824 North 25th Avenue)

- East of the Detrex property:
  - LaMantia Plastics (2525 West Le Moyne Street)
  - Enviro Tech International, Inc. (1800 North 25th Avenue) (leased from LaMantia Plastics)

Chlorinated volatile organic compounds (VOCs) are either known to have been used or were likely to have been used at several properties listed above.

The closest residential properties are approximately 800 to 900 feet east of the Detrex property. The closest public school to the Detrex property is approximately 2,100 feet to the southeast. The population of the village of Melrose Park is 20,900. Additional detail on local conditions can be found in the *Phase III Summary of Environmental Conditions Report* dated May 5, 2008 (ARCADIS U.S., Inc. 2008).

The Detrex facility is regulated under the Resource Conservation and Recovery Act (RCRA) and currently operates under a Part B Permit. The RCRA Permit Application was submitted by the Detrex Corporation, the legal name of the owner/operator. However, the facility formally operated under the name Detrex Corporation Solvents and Environmental Services Division. Their RCRA Part B Permit No. 0311860003 and United States Environmental Protection Agency (USEPA) ID No. ILD 074424938 (permit) were reissued by the IEPA in October 2003 pursuant to Section 3004(u) of RCRA and 35 Illinois Administrative Code (IAC) 724.201. The current permit will expire in October 2013.

The facility is permitted to receive waste codes U080, U121, U210, U226, U228, D039, D040, F001, and F002. No reclamation equipment is, or has ever been, operated at this facility. The facility is used to collect and ship waste material to other RCRA treatment, storage, and disposal facilities (TSDFs). The waste brought into the facility for temporary storage is received in Department of Transportation (DOT)-approved containers and ultimately shipped to other RCRA TSDFs in the containers received. Based on Detrex's records, there is and has never been combining/commingling or treatment of wastes at this facility. There are no records of any releases of waste, and it is unlikely that waste contributed to contamination at the site.

During years of operation, soil and groundwater at the Detrex and adjacent properties have been impacted during routine activities at the facility. Detrex is actively pursuing resolution of environmental issues and attempting to close their RCRA permit. Phase I, Phase II, and Phase III RCRA Facility Investigations (RFIs) have been conducted at the facility.

On-site and off-site impacts potentially attributable to the facility may have come from releases occurring during transfers of the degreasing products. Products received at the facility include trichloroethene (TCE); 1,1,1-trichloroethane (1,1,1-TCA); and tetrachloroethene (PCE). Products are unloaded from bulk truck tankers at the loading dock at the southwestern corner of the building. Historically, products were also delivered by railroad tank cars and were unloaded from the railroad spur north of the building. The Site layout is depicted on Figure 2.

3. Description of Field Activities

ARCADIS conducted groundwater monitoring and sampling activities on May 1 and 2, 2012 for all existing site-related monitoring wells. Prior to sampling, depth-to-water measurements were collected using an electronic water-level indicator. Approximately three well volumes were purged from each monitoring well prior to sampling using a new disposable high density polyethylene (HDPE) bailer for each well. Groundwater quality parameters were measured, including temperature, pH, and specific conductance, and visual observations of color of water and relative turbidity were made.

Monitoring Wells MW-3, MW-4, and MW-7, located on the Former Handy Button property, appear to have been abandoned during remediation activities conducted by Handy Button's consultant. Monitoring Well MW-6 was abandoned on June 14, 2010.

A duplicate sample was collected from Monitoring Well MW-2 on May 2, 2012. In addition, a trip blank sample was submitted for analysis with the samples for each sampling day, and an equipment blank was submitted for analysis on May 1, 2012. Monitoring well locations are shown on Figure 2.

4. Laboratory Analysis

Groundwater samples collected by ARCADIS were submitted to TestAmerica Laboratories located in University Park, Illinois (TestAmerica), an IEPA-approved laboratory, along with appropriate chain-of-custody documentation. The samples were analyzed for the 10 VOCs identified as groundwater constituents of concern (COCs) for the site. These COCs include benzene; chloroethane; chloroform; 1,1-dichloroethane (1,1-DCA); 1,1,-dichloroethene (1,1-DCE); cis-1,2-dichloroethene (cis-DCE); TCE; 1,1,1-TCA; PCE; and vinyl chloride. COCs were previously identified and agreed upon during discussions between Detrex, ARCADIS, and the IEPA.

COCs were evaluated using USEPA Method 8260B. Laboratory analytical results were validated by ARCADIS following a Tier II data validation. All data were deemed usable. Laboratory data sheets are included in Appendix A. Appendix A also contains the electronic data reporting files that were submitted to Mr. Filson.

5. Results

The following sections present the new data and discuss measured groundwater elevations, apparent flow, groundwater quality, and constituent distribution.

5.1 Groundwater Elevations and Apparent Flow

Groundwater elevations measured on May 1, 2012 (with the exception of May 2, 2012, which were gauged on May 2, 2012) ranged from 622.71 feet above mean sea level (feet amsl) at Monitoring Well MW-8 to 629.46 feet amsl at Monitoring Well MW-10, and depth to water below ground surface (bgs) ranged from 6.98 feet bgs (MW-10) to 9.13 feet bgs (MW-8). Depth-to-water measurements and groundwater elevations, including historical data, are presented in Table 1.

The apparent direction of groundwater flow based on the slope of the potentiometric surface was variable, with high points at Monitoring Wells MW-2, MW-9, MW-10, and MW-12 (see Figure 3). Previous groundwater elevation and flow maps also indicate variable groundwater flow (see Appendix B).

Historically, groundwater conditions at the site indicate low permeabilities (low conductivities) and low hydraulic gradients. Historical data are summarized below.

- Hydraulic Conductivities: Analysis of slug test data resulted in hydraulic conductivity values ranging from 2.92 x 10^{-8} centimeters per second (cm/sec) to 2.05 x 10^{-6} cm/sec, which is within the expected range for the fine-grained lacustrine and glacial deposits present at the site.

- Soil Permeability: Soil permeability test results from samples collected within the silty clay material ranged from 1.30 x 10^{-8} cm/sec to 6.70 x 10^{-7} cm/sec. Results from samples collected from the predominantly clay material ranged from 9.60 x 10^{-9} cm/sec to 1.90 x 10^{-8} cm/sec.

This results in groundwater flow being influenced by local variations in geology or fill material; however, hydraulic conductivities limit regional flow (long distance).

5.2 Comparison to Class II Groundwater Remedial Objectives

Groundwater samples were collected from 12 monitoring wells. Monitoring well locations are depicted on Figure 2. Analytical results from the 2nd quarter 2012 sampling event are provided in Table 2. A summary of historical data is provided in Table 3. The laboratory analytical reports are provided in Appendix A.

COCs were not detected in the groundwater samples collected from Monitoring Wells MW-8, MW-12, MW-13, MW-15, and MW-16. Although 1,1-DCA was detected at monitoring Wells MW-1, MW-2, MW-11, and MW-14, concentrations were below the Class II Groundwater Ingestion Remedial Objectives (ROs). Benzene, chloroethane and chloroform were not detected in the groundwater samples collected in May 2012.

1,1-DCE was detected at four locations: MW-1, MW-2, MW-11, and MW-14; however, it was not above the RO in the groundwater sample collected from MW-14. Cis-DCE and TCE were detected at seven locations: MW-1, MW-2, MW-5, MW-9, MW-10, MW-11, and MW-14; each exceeded the applicable RO. PCE was detected at one location, MW-1,at a concentration which exceeded applicable RO. 1,1,1-TCA was detected at four locations: MW-1, MW-2, MW-11, and MW-14; however, only MW-2 exceeded the applicable RO. Vinyl chloride was detected at two locations: MW-10 and MW-14; only MW-10 exceeded the applicable RO.

Detected concentrations of COCs were compared to the Class II Groundwater Ingestion ROs, as approved in the IEPA's July 18, 1996 letter to Detrex (Log No. BA-113-CA-2; IEPA, 1996). Figure 4 provides the 2nd quarter 2012 analytical results from May 2012, and indicates concentrations of COCs exceeding the Class II Groundwater Ingestion ROs. Concentrations of 1,1-DCE, cis-DCE, 1,1,1-TCA, PCE, TCE and vinyl chloride exceed the Class II Groundwater Ingestion ROs in at least one sample.

5.3 Constituent Distribution

Data for six of the COCs could not be used to generate isoconcentration maps due to an insufficient number of detections. Isoconcentration maps depicting the possible distribution of select COCs in groundwater were only developed for TCE, cis-DCE, 1,1-DCE, and 1,1,1-TCA.. Figures 5 through 8 show isoconcentrations for TCE, cis-DCE, 1,1-DCE, and 1,1,1-TCA, respectively.

Data are summarized in Tables 2 and 3. Groundwater impacts have been delineated to below Class II Groundwater Ingestion ROs to the north of the Detrex property on the Al Piemonte Ford property with Monitoring Wells MW-13, MW-15, and MW-16, which were installed on June 14 and 15, 2010. In addition, one monitoring well was installed to the east of the Detrex property on the LaMantia property (MW-12) and one monitoring well was installed to the south of the Detrex property in the Le Moyne Street right-of-way (MW-11).

6. Request for Reduction in Constituents of Concern

Detrex and ARCADIS respectfully request that benzene be excluded from the 10 site-related COCs. Benzene has not been detected in samples collected from monitoring wells since 2007. Benzene was only detected in Monitoring Well MW-5 and in the sample collected from soil boring A-HA-4, which was located adjacent to Monitoring Well MW-5. Impacts at these locations are not likely attributable to Detrex operations. Therefore, it is unlikely that the detections of benzene in groundwater are related to Detrex operations, and benzene should be eliminated at a site-related COC.

7. Anticipated Future Activities

Semiannual groundwater monitoring will occur in the fourth quarter of 2012, between October and December. Groundwater monitoring will include all existing site-related monitoring wells. The groundwater monitoring report for the fourth quarter of 2012 will

be submitted to the IEPA by January 15, 2013, consistent with the schedule that IEPA setup for the site.

8. References

ARCADIS U.S., Inc. 2008. *Phase III Summary of Environmental Conditions Report for Detrex Corporation Facility Located in Melrose Park, Illinois*. May 5.

Detrex Corporation. 1994. Melrose Park, Illinois, RCRA Part B Permit No. 0311860003 and USEPA ID No. ILD074424938, issued by IEPA, September.

Illinois Environmental Protection Agency. 1996. Letter to Detrex Corporation. Log No. B-113-CA-2. July 18.

Illinois Environmental Protection Agency. 2007. Tiered Approach to Cleanup Objectives (TACO). Illinois Administrative Code Title 35, Part 742. Final: June 5.

Illinois Environmental Protection Agency. 2009. Letter to Detrex Corporation. Log No. B-113R-CA-8 and 9. July 9.

ARCADIS

Tables

Table 1. Groundwater Elevation Data, Melrose Park Facility, Detrex Corporation
Melrose Park, Illinois

Monitoring Well	Date Measured	TOC Elevation (feet)	Depth to Groundwater (feet)		Groundwater Elevation (feet)	Well Depth (feet)
MW-1	10/9/95	631.67	14.44	*	617.23	14.72
	10/16/95	631.67	11.34	*	620.33	14.72
	10/31/05	631.67	6.02	*	625.65	14.72
	11/10/95	631.67	5.27		626.40	14.72
	8/26/97	631.67	4.02		627.65	14.59
	5/21/04	631.67	3.90		627.77	14.60
	4/27/07	631.62	3.51		628.11	14.82
	9/11/07	631.62	5.02		626.60	14.82
	3/5/08	631.62	3.71		627.91	14.82
	3/14/08	631.62	3.75		627.87	14.82
	11/20/09	631.62	4.06		627.56	14.80
	6/15/10	631.62	3.86		627.76	14.50
	11/23/10	631.62	5.62		626.00	14.77
	5/24/11	631.52	3.91		627.61	14.87
	11/9/11	631.52	4.94		626.58	14.50
	5/2/12	631.52	3.74		627.78	14.62
MW-2	10/9/95	631.76	dry	*	dry	14.72
	10/16/95	631.76	14.65	*	617.11	14.72
	10/31/95	631.76	12.48	*	619.28	14.72
	11/10/95	631.76	11.39	*	620.37	14.72
	8/26/97	631.76	3.68		628.08	14.58
	5/21/04	631.76	2.19		629.57	14.58
	4/27/07	631.76	NM		NM	NM
	9/11/07	631.76	3.40		628.36	14.58
	3/5/08	631.76	1.93		629.83	14.58
	3/14/08	631.76	2.03		629.73	14.58
	11/20/09	631.76	2.16		629.60	14.17
	6/15/10	631.76	2.01		629.75	14.30
	11/23/10	631.56	2.14		629.42	14.74
	5/24/11	631.56	2.69		628.87	14.83
	11/9/11	631.56	2.06		629.50	14.57
	5/2/12	631.56	2.30		629.26	14.61
MW-3	10/9/95	633.13	dry	*	dry	14.65
	10/16/95	633.13	dry	*	dry	14.65
	10/31/95	633.13	dry	*	dry	14.65
	11/10/95	633.13	dry	*	dry	14.65
	8/26/97	633.13	6.99		626.14	14.52
	5/21/04	633.13	6.72		626.41	14.52
	4/27/07	633.14	6.13		627.01	14.75
	9/11/07	633.14	6.82		626.32	14.75
	3/5/08	633.14	6.84		626.30	14.75
	3/14/08	633.14	7.13		626.01	14.75
	11/19/09		Well destroyed			
	6/15/10		Well destroyed			
	11/22/10		Well destroyed			
	5/23/11		Well destroyed			
	11/7/11		Well destroyed			
	5/2/12		Well destroyed			

See notes on page 4.

Table 1. Groundwater Elevation Data, Melrose Park Facility, Detrex Corporation
Melrose Park, Illinois

Monitoring Well	Date Measured	TOC Elevation (feet)	Depth to Groundwater (feet)		Groundwater Elevation (feet)	Well Depth (feet)
MW-4	10/9/95	632.50	dry	*	dry	14.55
	10/16/95	632.50	dry	*	dry	14.55
	10/31/95	632.50	13.29	*	619.21	14.55
	11/17/95	632.50	11.29	*	621.21	14.55
	8/26/97	632.50	NM		NM	NM
	5/24/04	632.50	4.35		628.15	14.36
	4/27/07	632.50	3.42		629.08	14.80
	9/11/07	632.50	5.01		627.49	14.80
	3/5/08	632.50	4.73		627.77	14.80
	3/14/08	632.50	4.78		627.72	14.80
	11/19/09		Well destroyed			
	6/15/10		Well destroyed			
	11/22/10		Well destroyed			
	5/23/11		Well destroyed			
	11/7/11		Well destroyed			
	5/2/12		Well destroyed			
MW-5	10/9/95	630.62	7.09	*	623.53	14.61
	10/16/95	630.62	4.83		625.79	14.61
	10/31/95	630.62	4.00		626.62	14.61
	11/10/95	630.62	3.74		626.88	14.61
	8/26/97	630.62	3.44		627.18	14.74
	5/21/04	630.62	2.71		627.91	14.75
	4/27/07	630.56	2.80		627.76	15.05
	9/11/07	630.56	4.63		625.93	15.05
	3/5/08	630.56	2.81		627.75	15.05
	3/14/08	630.56	2.86		627.70	15.05
	11/19/09	630.56	3.57		626.99	15.00
	6/15/10	630.56	3.01		627.55	14.70
	11/23/10	630.51	4.03		626.48	14.94
	5/23/11	630.51	2.88		627.63	15.04
	11/9/11	630.51	3.70		626.81	14.75
	5/1/12	630.51	3.08		627.43	12.80
MW-6	10/9/95	634.48	4.23		630.25	14.65
	10/16/95	634.48	4.31		630.17	14.65
	10/31/95	634.48	3.21		631.27	14.65
	11/17/05	634.48	2.43		632.05	14.65
	8/26/97	634.48	5.04		629.44	9.25
	5/21/04	634.48	5.64		628.84	9.28
	4/27/07	634.48	NM		NM	NM
	9/12/07	634.66	4.79		629.87	9.28
	3/5/08	634.66	frozen		frozen	NM
	3/14/08	634.66	4.75		629.91	9.28
	11/19/09	634.66	4.94		629.72	9.50
	6/15/10		Abandoned			
	11/22/10		Abandoned			
	5/23/11		Abandoned			
	11/7/11		Abandoned			
	5/2/12		Abandoned			

See notes on page 4.

Table 1. **Groundwater Elevation Data, Melrose Park Facility, Detrex Corporation Melrose Park, Illinois**

Monitoring Well	Date Measured	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Well Depth (feet)
MW-7	4/27/07	632.05	5.45	626.60	12.88
	9/11/07	632.05	5.85	626.20	12.88
	3/5/08	632.05	5.92	626.13	12.88
	3/14/08	632.05	5.99	626.06	12.88
	11/19/09		Well destroyed		
	6/15/10		Well destroyed		
	11/22/10		Well destroyed		
	5/23/11		Well destroyed		
	11/7/11		Well destroyed		
	5/2/12		Well destroyed		
MW-8	4/27/07	631.94	9.42	622.52	14.67
	9/11/07	631.94	8.25	623.69	14.67
	3/5/08	631.94	9.77	622.17	14.67
	3/14/08	631.94	9.65	622.29	14.67
	11/19/09	631.94	9.11	622.83	14.96
	6/15/10	631.94	8.97	622.97	14.70
	11/22/10	631.84	9.60	622.24	14.94
	5/23/11	631.84	9.12	622.72	14.99
	11/7/11	631.84	8.85	622.99	14.73
	5/1/12	631.84	9.13	622.71	14.76
MW-9	4/27/07	633.38	4.51	628.87	15.00
	9/11/07	633.38	5.72	627.66	15.00
	3/5/08	633.38	4.81	628.57	15.00
	3/14/08	633.38	NM	NM	NM
	11/19/09	633.38	5.12	628.26	14.99
	6/15/10	633.38	4.14	629.24	14.74
	11/22/10	633.23	6.18	627.05	14.94
	5/23/11	633.23	4.71	628.52	15.03
	11/7/11	633.23	5.54	627.69	14.75
	5/1/12	633.23	4.89	628.34	14.80
MW-10	4/27/07	636.44	6.15	630.29	14.66
	9/11/07	636.44	7.25	629.19	14.66
	3/5/08	636.44	6.30	630.14	14.66
	3/14/08	636.44	6.61	629.83	14.66
	11/19/09	636.44	7.09	629.35	14.95
	6/15/10		Access denied		
	11/23/10		Access denied		
	6/7/11	636.44	6.71	629.73	14.94
	11/7/11	636.44	7.08	629.36	14.71
	5/1/12	636.44	6.98	629.46	14.77
MW-11	6/23/10	632.42	6.26	626.16	14.74
	11/23/10	632.42	6.79	625.63	14.93
	5/24/11	632.42	6.57	625.85	15.02
	11/9/11	632.42	6.48	625.94	14.71
	5/1/12	632.42	6.62	625.80	14.78

See notes on page 4.

Table 1. Groundwater Elevation Data, Melrose Park Facility, Detrex Corporation Melrose Park, Illinois

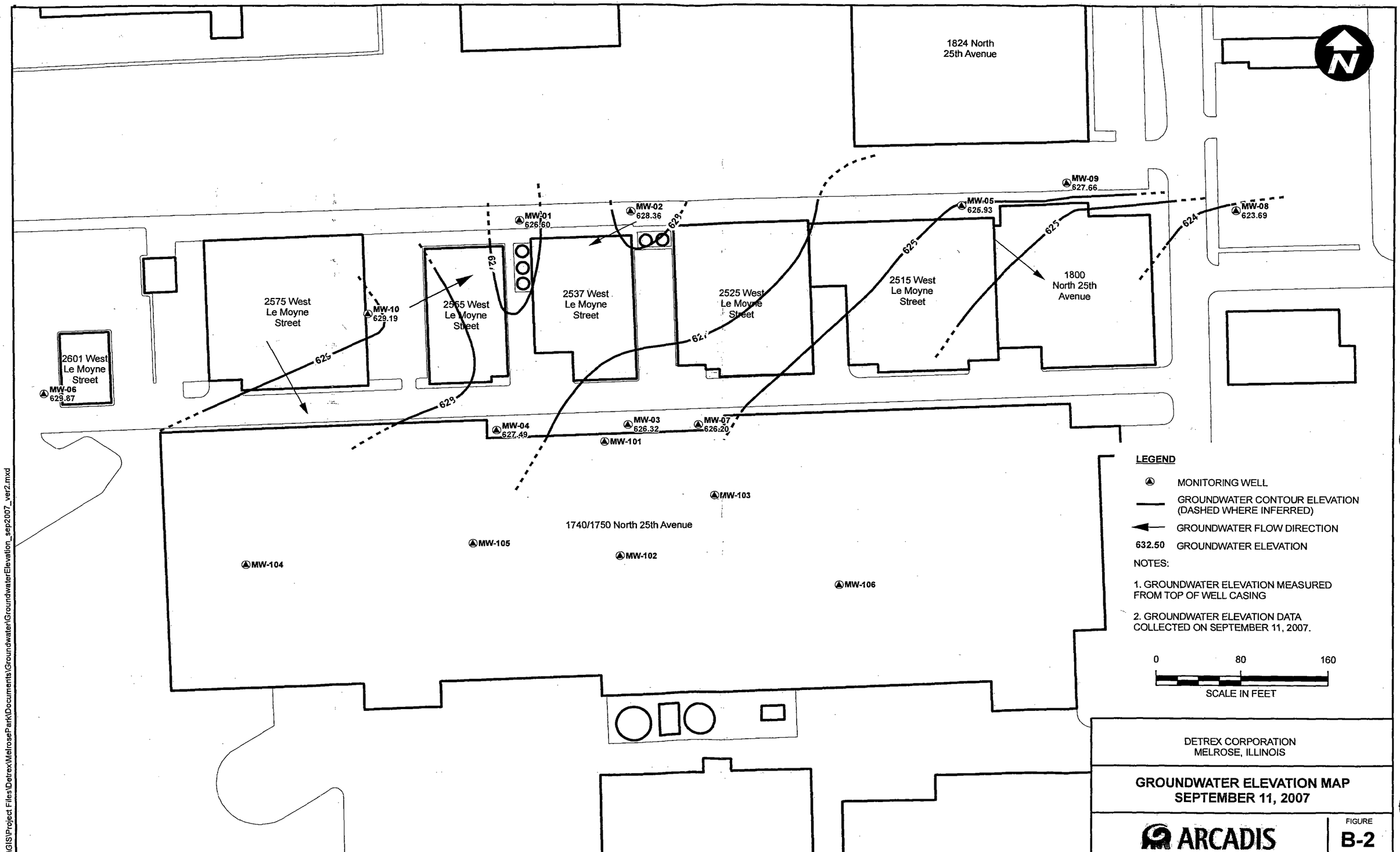
Monitoring Well	Date Measured	TOC Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Well Depth (feet)
MW-12	6/23/10	633.74	6.40	627.34	14.80
	11/22/10	633.74	6.75	626.99	15.02
	5/23/11	633.74	6.21	627.53	14.61
	11/9/11	633.74	5.75	627.99	14.40
	5/1/12	634.19	4.81	629.38	14.28
MW-13	6/23/10	632.63	7.85	624.78	20.02
	11/22/10	632.63	7.84	624.79	20.23
	5/24/11	632.63	4.15	628.48	20.04
	11/7/11	632.63	4.44	628.19	19.75
	5/2/12	632.63	4.70	627.93	19.81
MW-14	6/23/10	634.33	7.87	626.46	19.85
	11/22/10	634.33	8.22	626.11	20.50
	5/24/11	634.33	9.98	624.35	20.13
	11/7/11	634.33	7.26	627.07	19.85
	5/2/12	634.33	6.26	628.07	19.91
MW-15	6/23/10	633.52	4.66	628.86	14.72
	11/22/10	633.52	5.40	628.12	14.86
	5/24/11	633.52	5.23	628.29	15.00
	11/7/11	633.52	8.38	625.14	14.73
	5/2/12	633.52	5.65	627.87	14.80
MW-16	6/23/10	632.54	8.34	624.20	19.80
	11/23/10	632.54	6.29	626.25	20.02
	5/24/11	632.54	5.72	626.82	20.11
	11/7/11	632.54	5.47	627.07	19.83
	5/2/12	632.54	5.55	626.99	19.91

Notes:

* Water level is not indicative of static water level due to the slow recharge of well.

NM Not measured.

TOC Top of casing.



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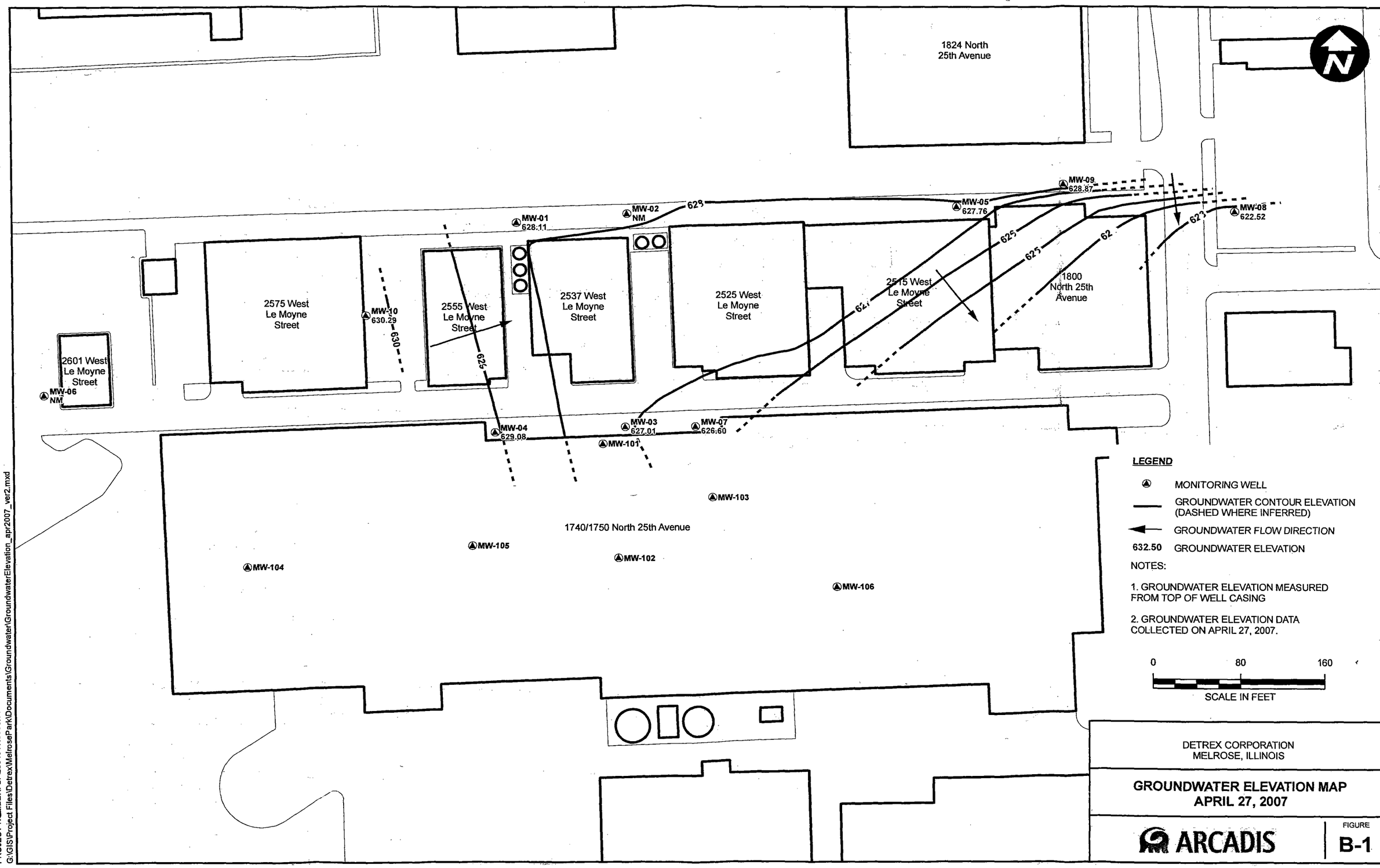

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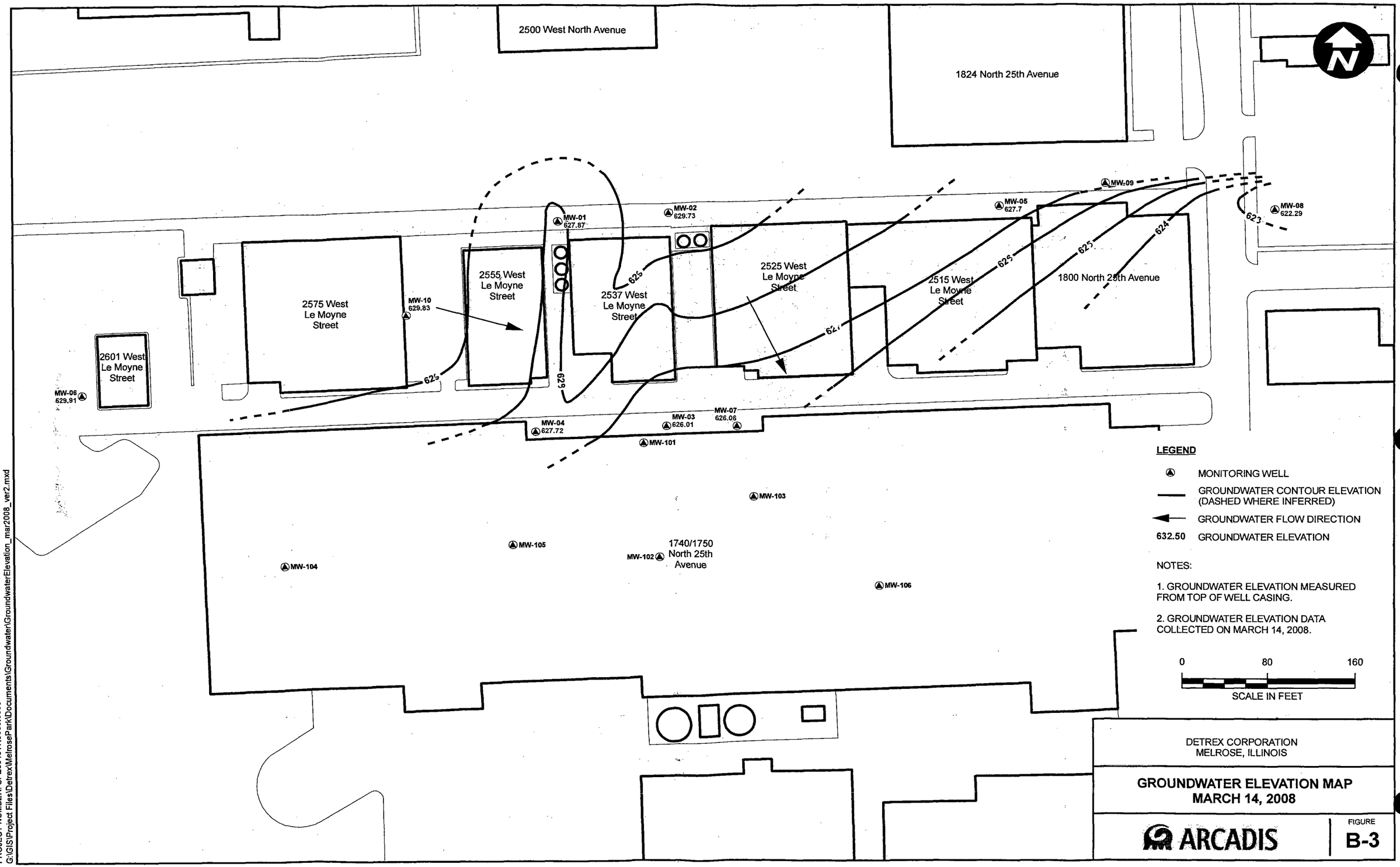

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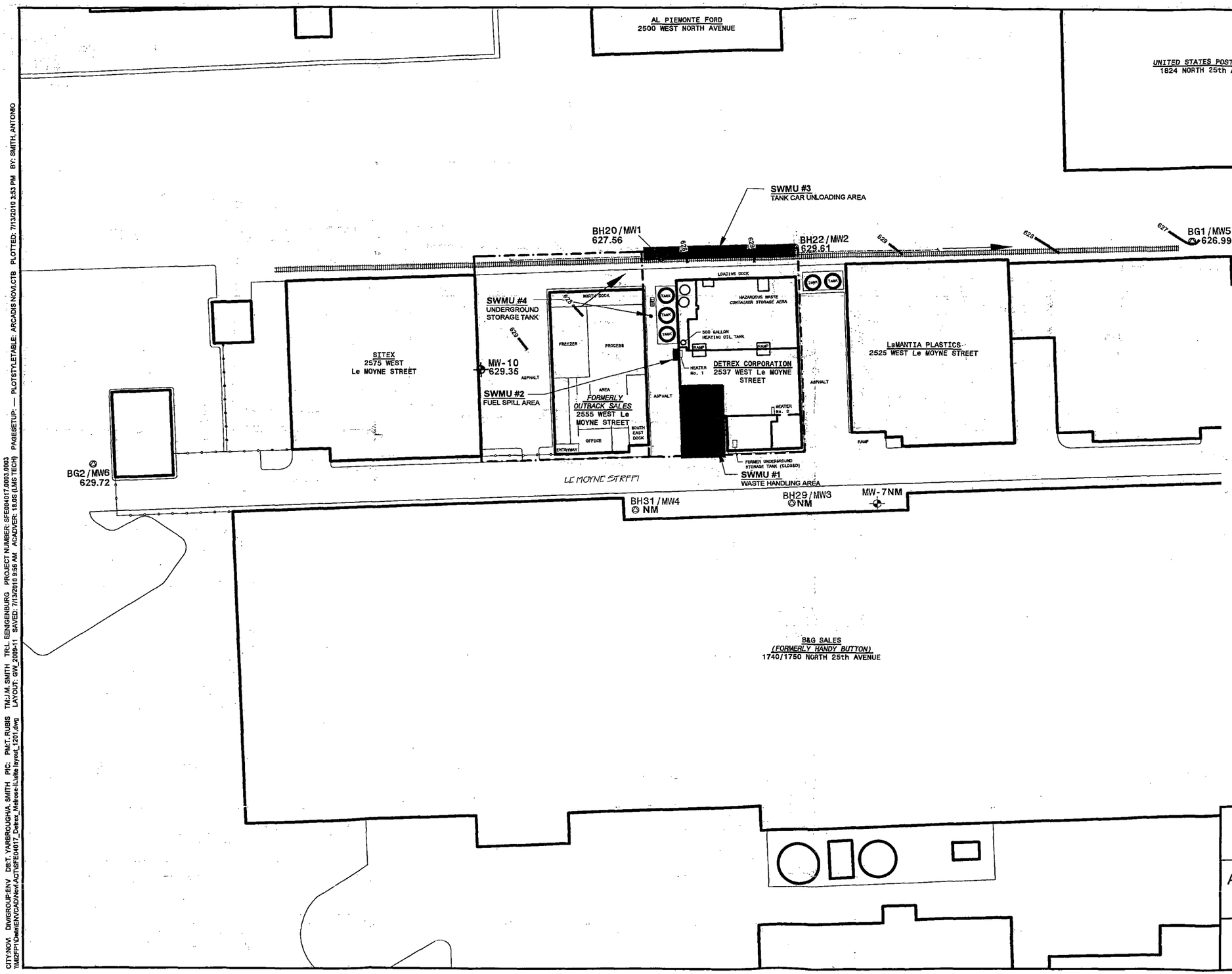

LEGEND

- PHASE II SOIL BORING (COMPLETED AS MONITORING WELL)
- PHASE III MONITORING WELL
- ABANDONED SOIL BORING OR MONITORING WELL
- 622.83 GROUNDWATER ELEVATION (MEASURED FROM TOP-OF-CASING)
- 628 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- APPARENT GROUNDWATER FLOW DIRECTION
- FENCE LINE
- SEWER LINE
- PROPERTY BOUNDARY
- SOLID WASTE MANAGEMENT UNIT (SWMU)

NOTES:

NM - NOT MEASURED; WELL NOT FOUND

0 75 150

SCALE IN FEET

DETREX CORPORATION
MELROSE PARK, ILLINOIS

APPARENT GROUNDWATER ELEVATION AND FLOW DIRECTION, NOVEMBER 19-20, 2009

ARCADIS

FIGURE B-4

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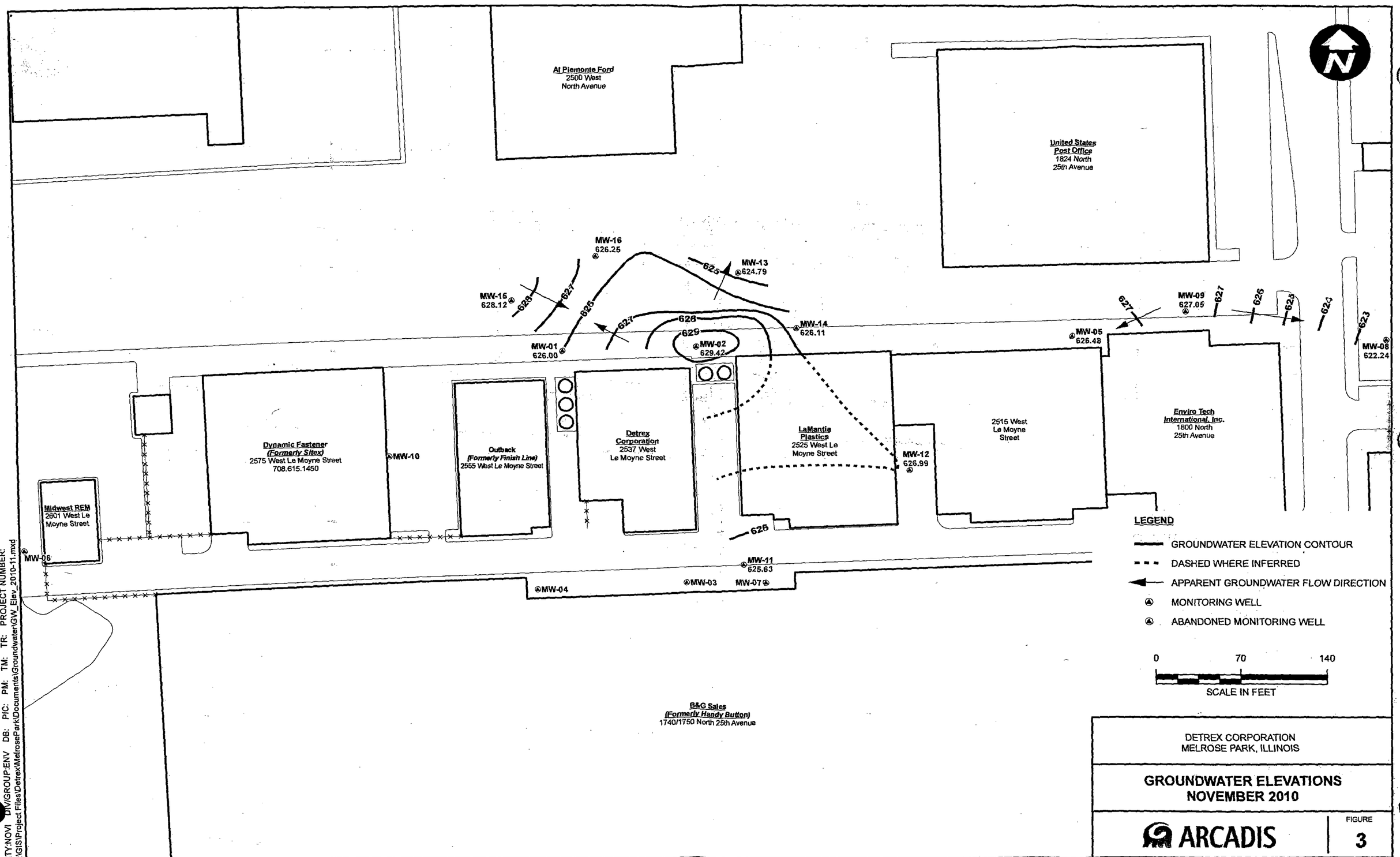
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North Avenue
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1824 North
25th Avenue
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MW-13
624.79
MW-15
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MW-01
626.00
MW-02
629.42
MW-14
626.11
MW-05
626.48
MW-09
627.05
MW-08
622.24
Dynamic Fastener
(Formerly Sitex)
2575 West Le Moyne Street
708.615.1450
MW-10
Outback
(Formerly Finish Line)
2555 West Le Moyne Street
Detrex
Corporation
2537 West
Le Moyne Street
LaMantia
Plastics
2525 West Le
Moyne Street
MW-12
626.99
2515 West
Le Moyne
Street
Enviro Tech
International, Inc.
1800 North
25th Avenue
Midwest REM
2601 West Le
Moyne Street
MW-06
MW-11
625.63
MW-04
MW-03
MW-07
B&G Sales
(Formerly Handy Button)
1740/1750 North 25th Avenue
LEGEND
GROUNDWATER ELEVATION CONTOUR
DASHED WHERE INFERRED
APPARENT GROUNDWATER FLOW DIRECTION
MONITORING WELL
ABANDONED MONITORING WELL
0
70
140
SCALE IN FEET
DETREX CORPORATION
MELROSE PARK, ILLINOIS
GROUNDWATER ELEVATIONS
NOVEMBER 2010
ARCADIS
FIGURE
3
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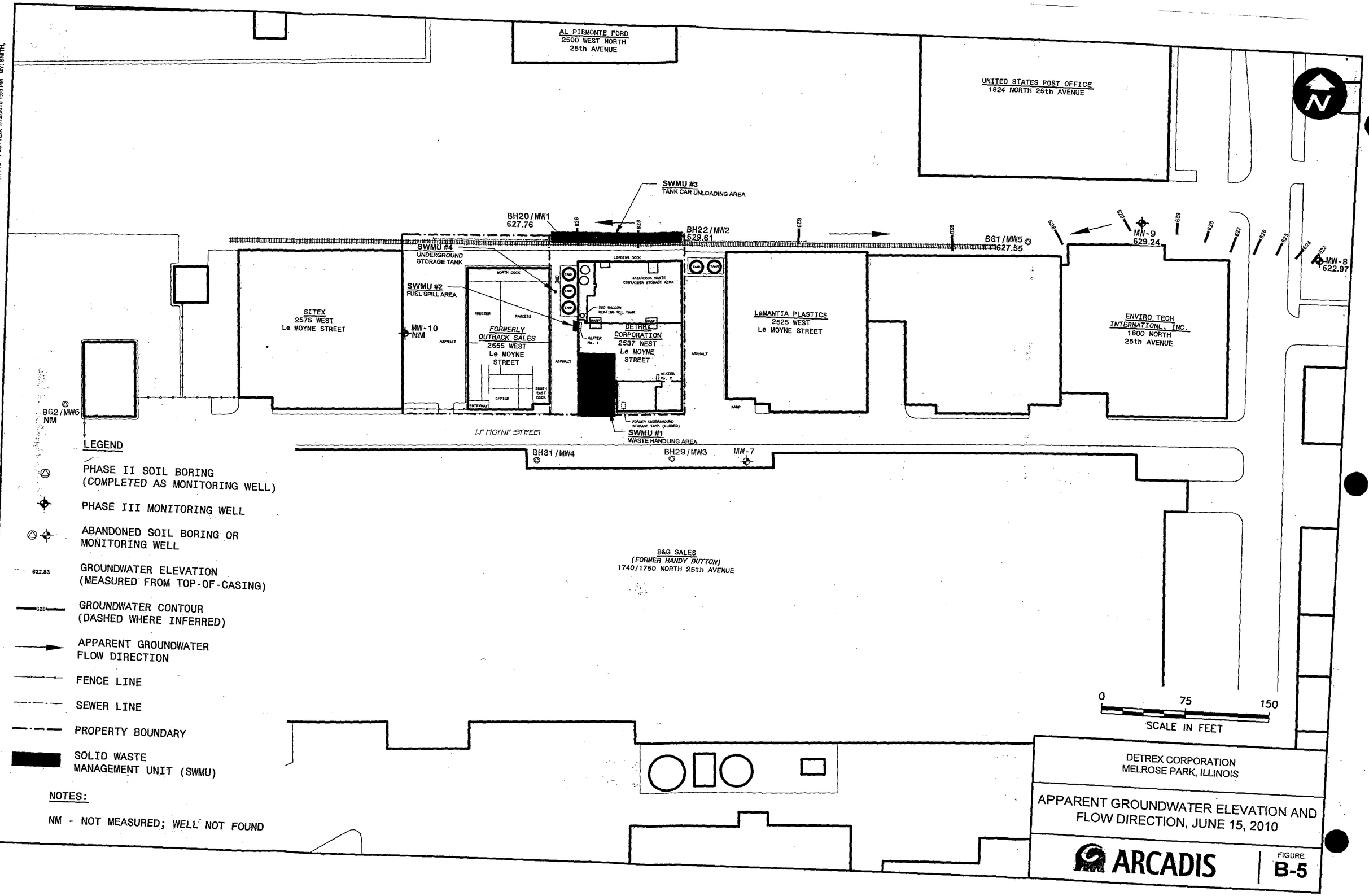
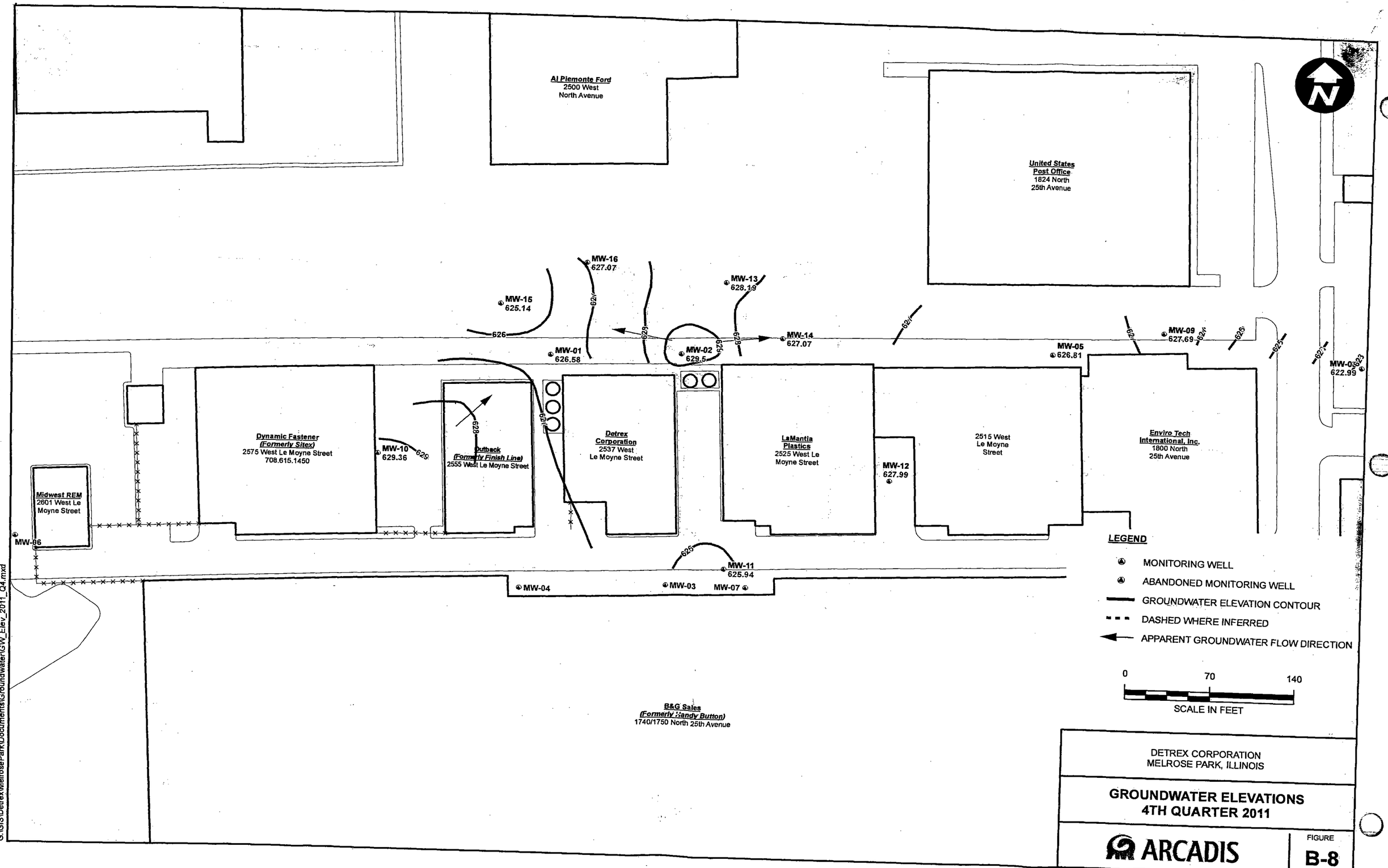


DETREX CORPORATION
MELROSE PARK, ILLINOIS

APPARENT GROUNDWATER ELEVATION AND FLOW DIRECTION, JUNE 15, 2010

ARCADIS

FIGURE
B-5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Post Office
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25th Avenue
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MW-16
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MW-15
625.14
MW-13
628.19
MW-14
627.07
MW-01
626.58
MW-02
629.5
MW-05
626.81
MW-09
627.69
MW-08
622.99
Dynamic Fastener
(Formerly Sitex)
2575 West Le Moyne Street
708.615.1450
MW-10
629.36
Outback
(Formerly Finish Line)
2555 West Le Moyne Street
Detrex
Corporation
2537 West
Le Moyne Street
LaMantia
Plastics
2525 West Le
Moyne Street
MW-12
627.99
2515 West
Le Moyne
Street
Enviro Tech
International, Inc.
1800 North
25th Avenue
Midwest REM
2601 West Le
Moyne Street
MW-06
MW-11
625.94
MW-04
MW-03
MW-07
B&G Sales
(Formerly Sandy Button)
1740/1750 North 25th Avenue
LEGEND
MONITORING WELL
ABANDONED MONITORING WELL
GROUNDWATER ELEVATION CONTOUR
DASHED WHERE INFERRED
APPARENT GROUNDWATER FLOW DIRECTION
0
70
140
SCALE IN FEET
DETREX CORPORATION
MELROSE PARK, ILLINOIS
GROUNDWATER ELEVATIONS
4TH QUARTER 2011
ARCADIS
FIGURE
B-8
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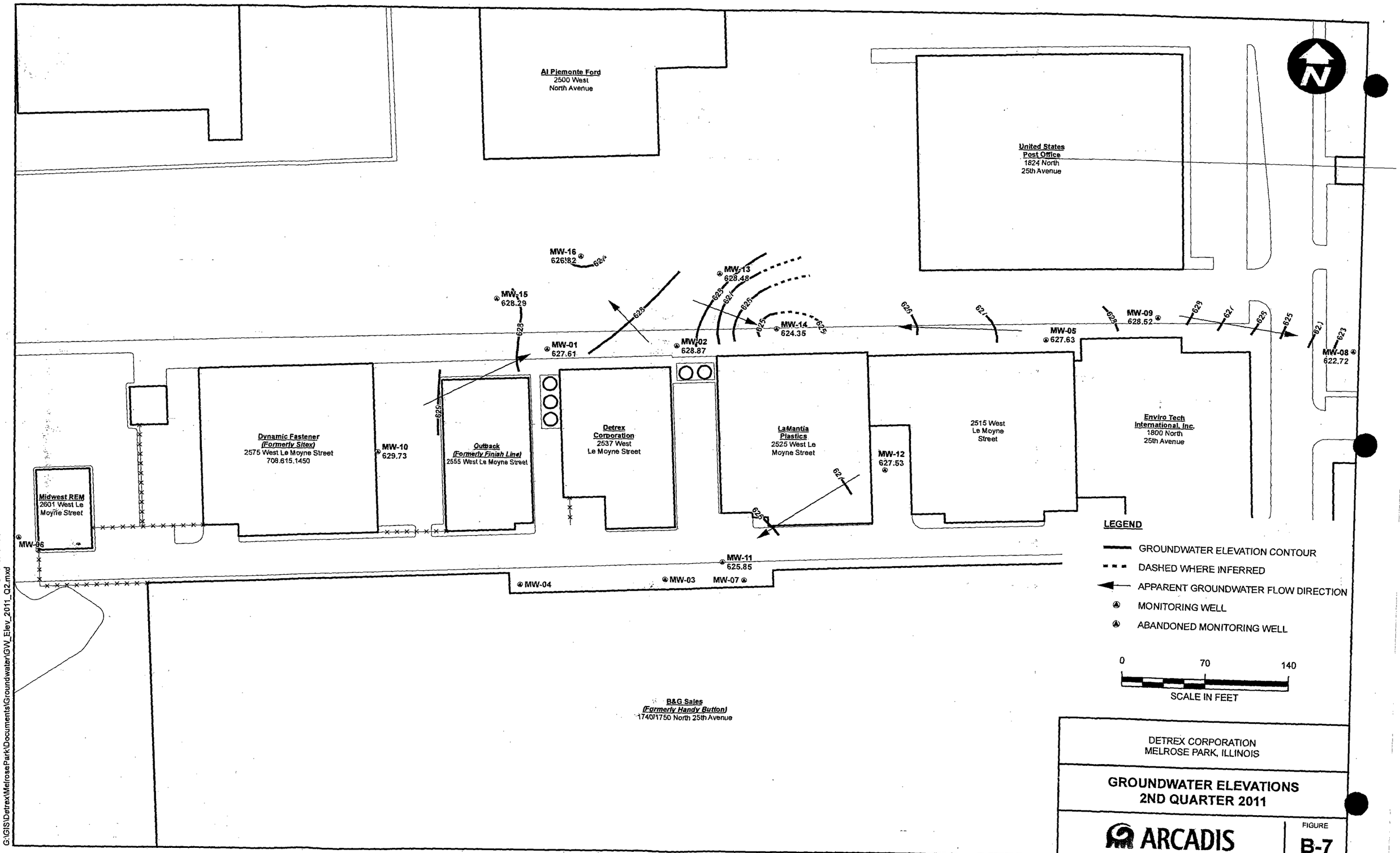

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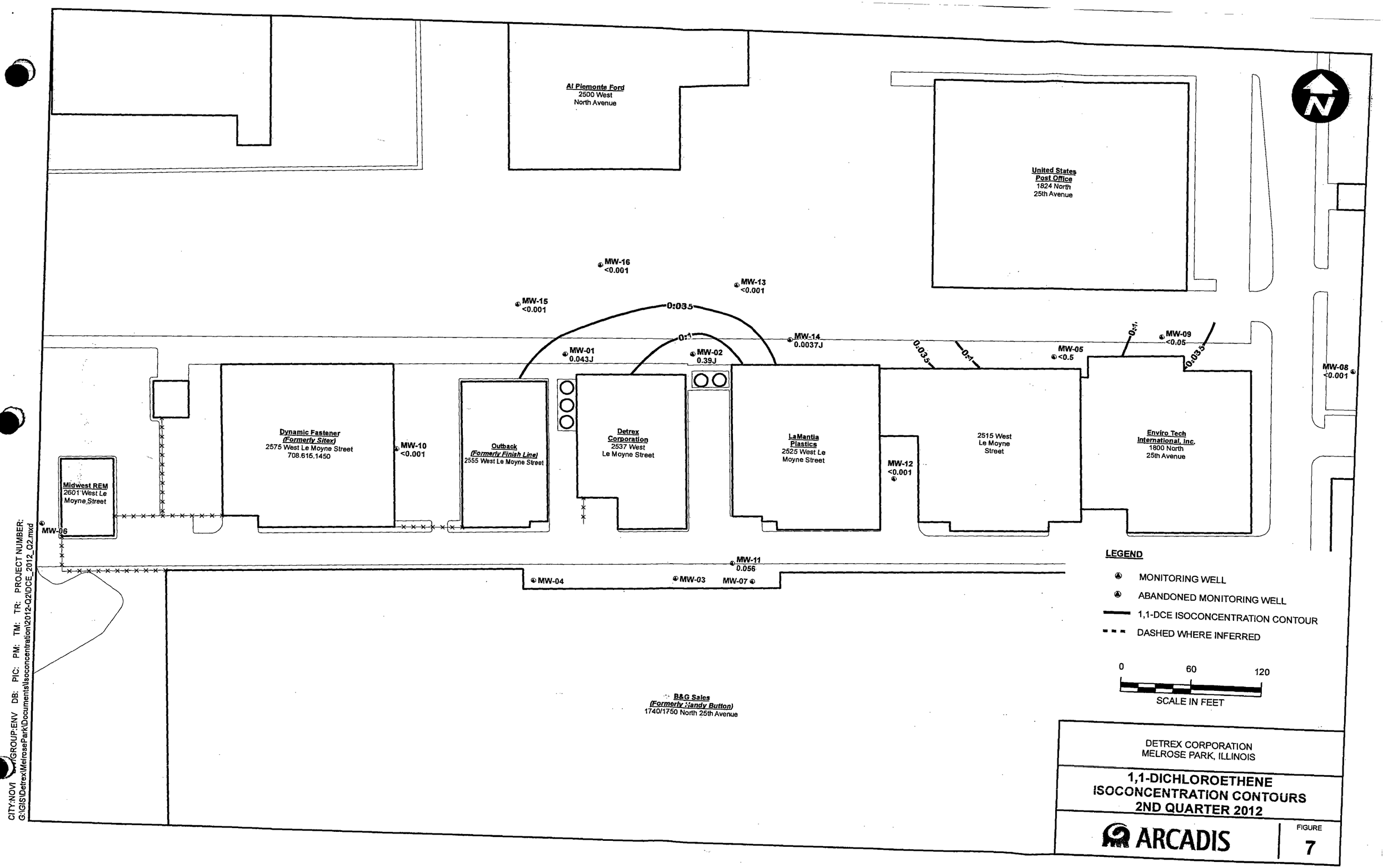
ARCADIS

Appendix B

Previous Groundwater Flow Maps – 2007 through 2011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25th Avenue
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MW-13
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MW-15
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MW-14
0.0037J
MW-01
0.043J
MW-02
0.39J
0.035
0.1
MW-05
<0.5
0.1
MW-09
<0.05
0.035
MW-08
<0.001
Dynamic Fastener
(Formerly Sitex)
2575 West Le Moyne Street
708.615.1450
MW-10
<0.001
Outback
(Formerly Finish Line)
2555 West Le Moyne Street
Detrex
Corporation
2537 West
Le Moyne Street
LaMantia
Plastics
2525 West Le
Moyne Street
MW-12
<0.001
2515 West
Le Moyne
Street
Enviro Tech
International, Inc.
1800 North
25th Avenue
Midwest REM
2601 West Le
Moyne Street
MW-06
MW-11
0.056
MW-04
MW-03
MW-07
B&G Sales
(Formerly Sandy Button)
1740/1750 North 25th Avenue
LEGEND
MONITORING WELL
ABANDONED MONITORING WELL
1,1-DCE ISOCONCENTRATION CONTOUR
DASHED WHERE INFERRED
0
60
120
SCALE IN FEET
DETREX CORPORATION
MELROSE PARK, ILLINOIS
1,1-DICHLOROETHENE
ISOCONCENTRATION CONTOURS
2ND QUARTER 2012
ARCADIS
FIGURE
7
CITY:NOVI GROUP:ENV DB: PIC: PM: TM: TR: PROJECT NUMBER:
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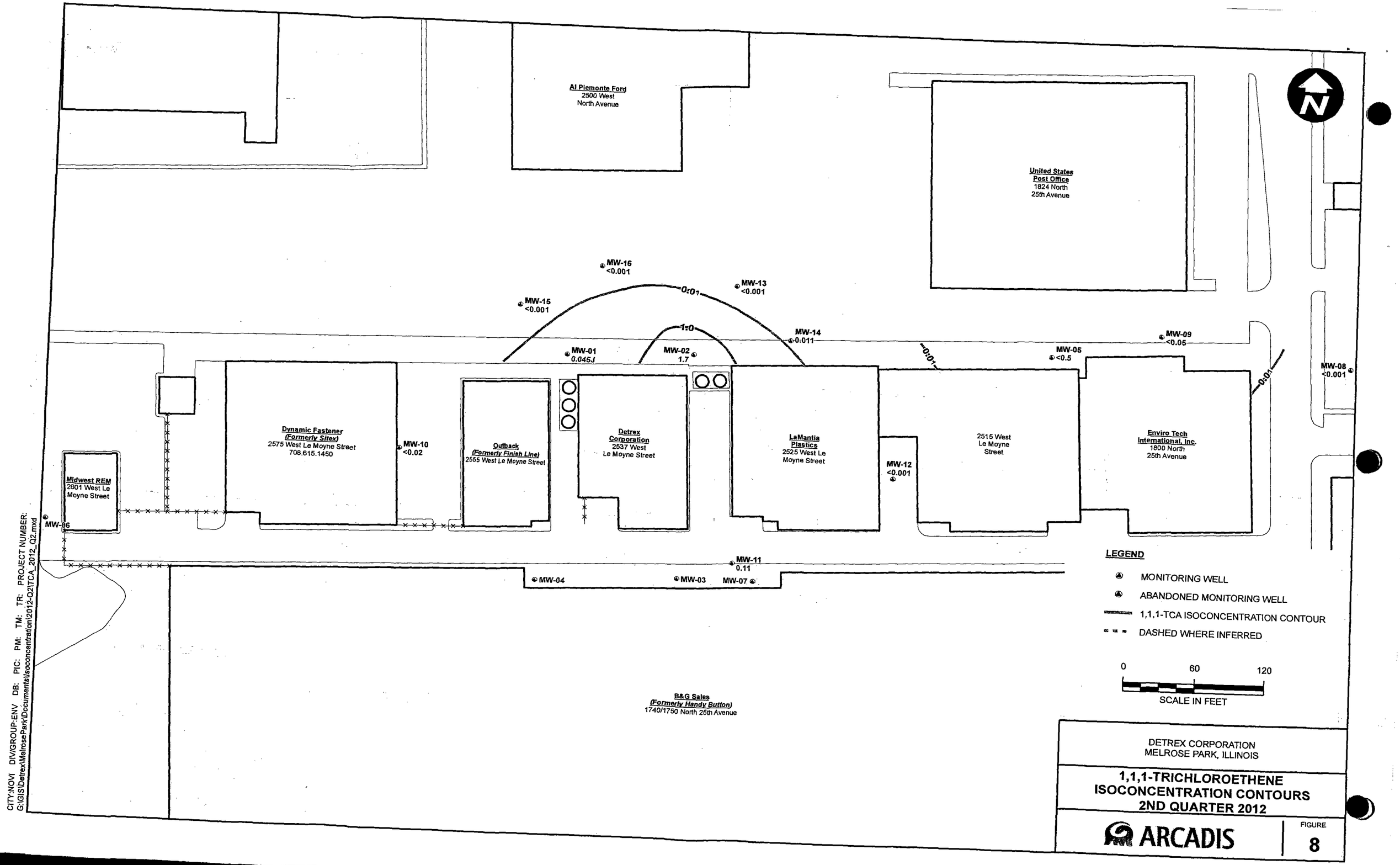
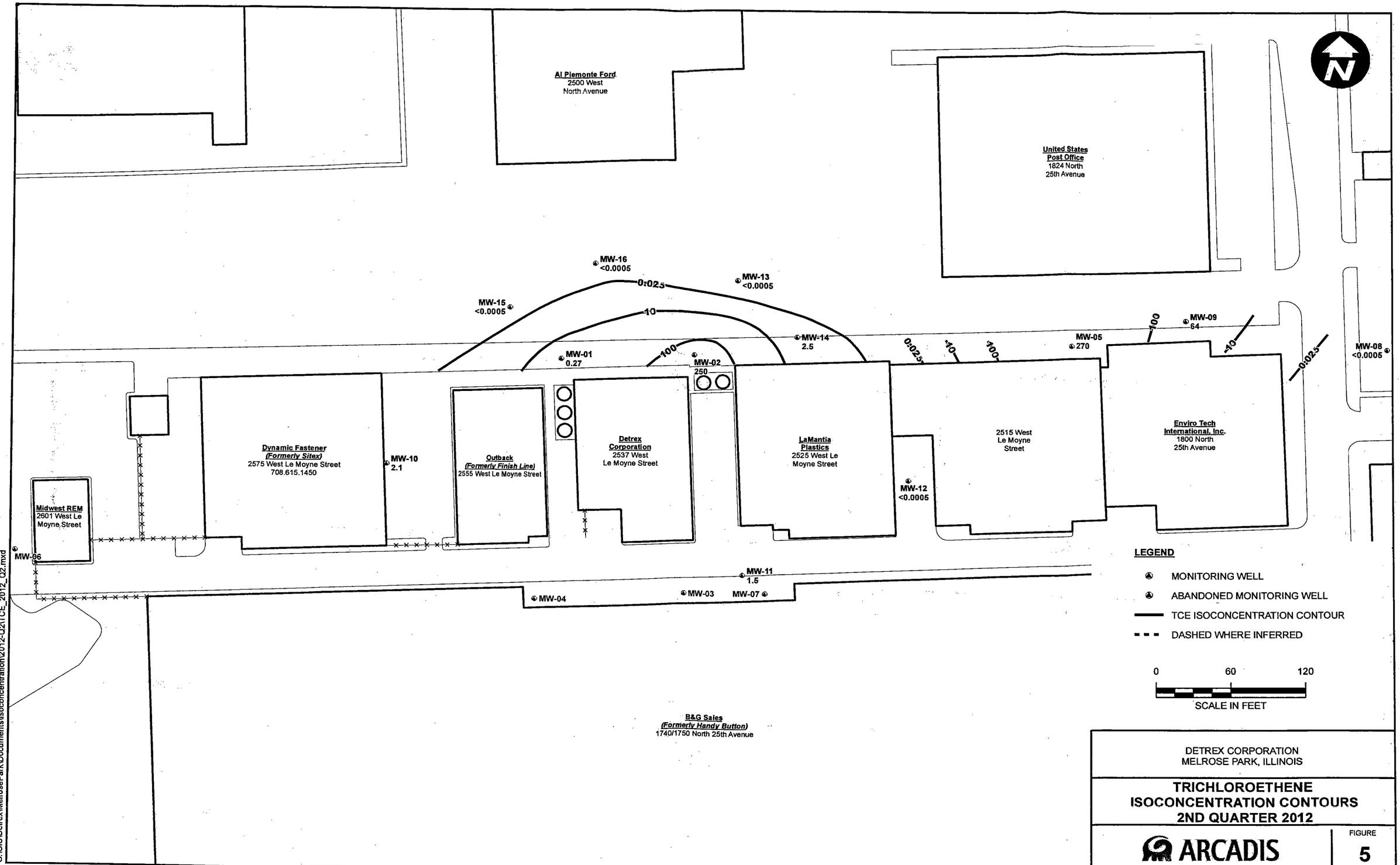


DETREX CORPORATION
MELROSE PARK, ILLINOIS

1,1,1-TRICHLOROETHENE ISOCONCENTRATION CONTOURS 2ND QUARTER 2012

ARCADIS

FIGURE
8



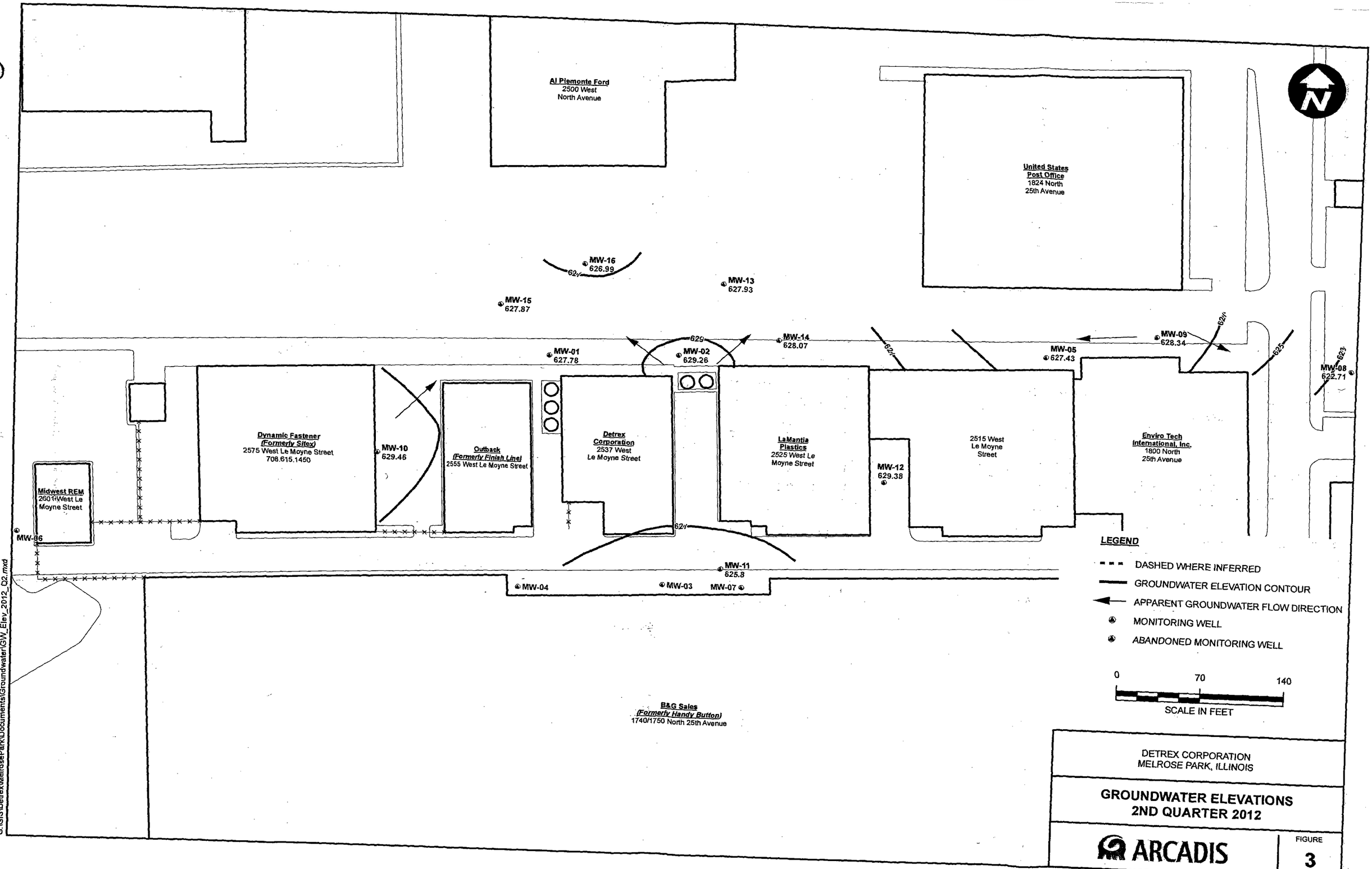
DETREX CORPORATION
MELROSE PARK, ILLINOIS

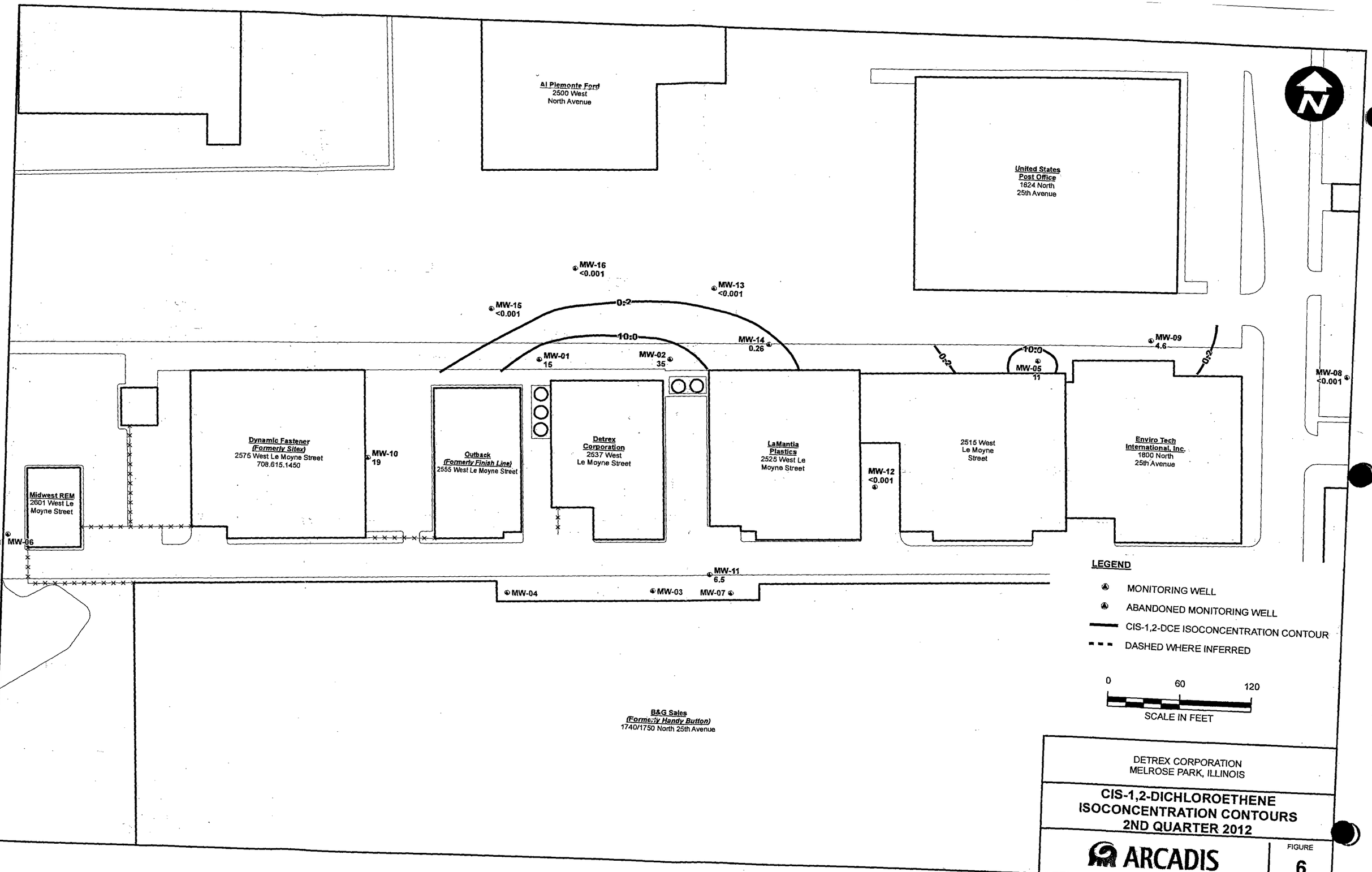
TRICHLOROETHENE ISOCONCENTRATION CONTOURS 2ND QUARTER 2012

ARCADIS

FIGURE 5

CITY:NOVI GROUP:ENV DB: PIC: PM: TM: TR: PROJECT NUMBER:
G:\GIS\Detrex\MelrosePark\Documents\Isoconcentration\2012-Q2\TCE_2012_Q2.mxd


Al Piemonte Ford
2500 West
North Avenue
United States
Post Office
1824 North
25th Avenue
MW-16
626.99
MW-13
627.93
MW-15
627.87
MW-01
627.78
MW-02
629.26
MW-14
628.07
MW-05
627.43
MW-09
628.34
MW-08
622.71
Dynamic Fastener
(Formerly Sitex)
2575 West Le Moyne Street
708.615.1450
MW-10
629.46
Outback
(Formerly Finish Line)
2555 West Le Moyne Street
Detrex
Corporation
2537 West
Le Moyne Street
LaMantia
Plastics
2525 West Le
Moyne Street
MW-12
629.38
2515 West
Le Moyne
Street
Enviro Tech
International, Inc.
1800 North
25th Avenue
Midwest REM
2601 West Le
Moyne Street
MW-06
MW-11
625.8
MW-04
MW-03
MW-07
B&G Sales
(Formerly Handy Button)
1740/1750 North 25th Avenue
LEGEND
DASHED WHERE INFERRED
GROUNDWATER ELEVATION CONTOUR
APPARENT GROUNDWATER FLOW DIRECTION
MONITORING WELL
ABANDONED MONITORING WELL
0
70
140
SCALE IN FEET
DETREX CORPORATION
MELROSE PARK, ILLINOIS
GROUNDWATER ELEVATIONS
2ND QUARTER 2012
ARCADIS
FIGURE
3
CITY:NOVI GROUP:ENV DB: PIC: PM: TM: TR: PROJECT NUMBER:
G:\GIS\Detrex\MelrosePark\Documents\Groundwater\GW_Elev_2012_Q2.mxd



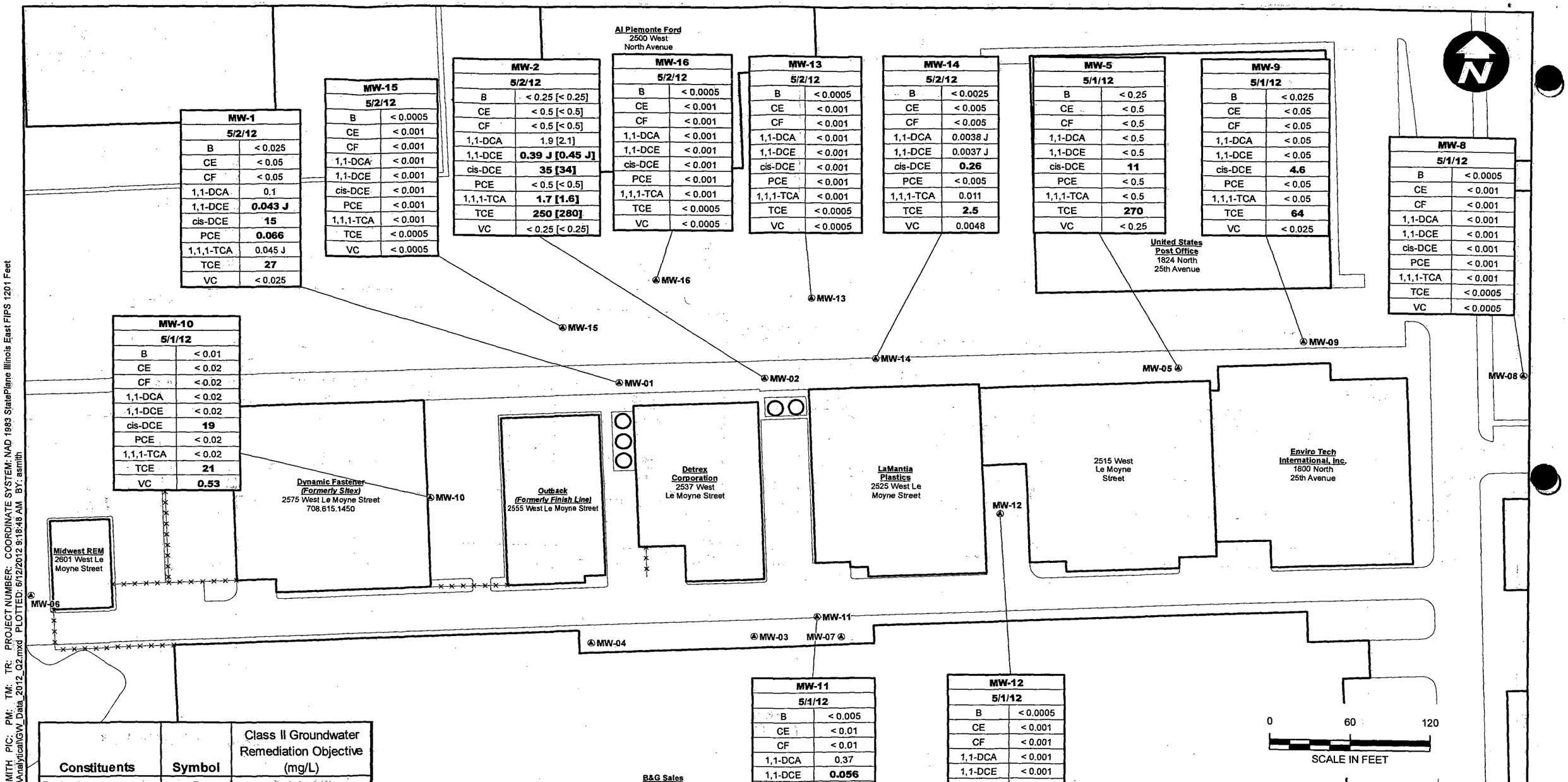
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CIS-1,2-DICHLOROETHENE ISOCONCENTRATION CONTOURS 2ND QUARTER 2012

ARCADIS

FIGURE
6

Al Piemonte Ford
2500 West
North Avenue
United States
Post Office
1824 North
25th Avenue
MW-16
MW-15
MW-13
MW-01
MW-02
MW-14
MW-05
MW-09
MW-08
MW-06
MW-10
MW-12
MW-04
MW-03
MW-11
MW-07
Midwest REM
2601 West Le
Moyne Street
Dynamic Fastener
(Formerly Silex)
2575 West Le Moyne Street
708.615.1450
Outback
(Formerly Finish Line)
2555 West Le Moyne Street
Detrex
Corporation
2537 West
Le Moyne Street
LaMantia
Plastics
2525 West Le
Moyne Street
2515 West
Le Moyne
Street
Enviro Tech
International, Inc.
1800 North
25th Avenue
B&G Sales
(Formerly Handy Button)
1740/1750 North 25th Avenue
LEGEND
MONITORING WELLS
ABANDONED MONITORING WELLS
0
70
140
SCALE IN FEET
DETREX CORPORATION
MELROSE PARK, ILLINOIS
SITE LAYOUT MAP
G:\GIS\Project Files\Detrex\MelrosePark\Documents\SiteLayout_2010.mxd
GROUP:ENV DB: PIC: PM: TM: TR: PROJECT NUMBER:



MW-1	
5/2/12	
B	< 0.025
CE	< 0.05
CF	< 0.05
1,1-DCA	0.1
1,1-DCE	**0.043 J**
cis-DCE	**15**
PCE	**0.066**
1,1,1-TCA	0.045 J
TCE	**27**
VC	< 0.025

MW-15	
5/2/12	
B	< 0.0005
CE	< 0.001
CF	< 0.001
1,1-DCA	< 0.001
1,1-DCE	< 0.001
cis-DCE	< 0.001
PCE	< 0.001
1,1,1-TCA	< 0.001
TCE	< 0.0005
VC	< 0.0005

MW-2	
5/2/12	
B	< 0.25 [< 0.25]
CE	< 0.5 [< 0.5]
CF	< 0.5 [< 0.5]
1,1-DCA	1.9 [2.1]
1,1-DCE	**0.39 J [0.45 J]**
cis-DCE	**35 [34]**
PCE	< 0.5 [< 0.5]
1,1,1-TCA	**1.7 [1.6]**
TCE	**250 [280]**
VC	< 0.25 [< 0.25]

MW-16	
5/2/12	
B	< 0.0005
CE	< 0.001
CF	< 0.001
1,1-DCA	< 0.001
1,1-DCE	< 0.001
cis-DCE	< 0.001
PCE	< 0.001
1,1,1-TCA	< 0.001
TCE	< 0.0005
VC	< 0.0005

MW-13	
5/2/12	
B	< 0.0005
CE	< 0.001
CF	< 0.001
1,1-DCA	< 0.001
1,1-DCE	< 0.001
cis-DCE	< 0.001
PCE	< 0.001
1,1,1-TCA	< 0.001
TCE	< 0.0005
VC	< 0.0005

MW-14	
5/2/12	
B	< 0.0025
CE	< 0.005
CF	< 0.005
1,1-DCA	0.0038 J
1,1-DCE	0.0037 J
cis-DCE	**0.26**
PCE	< 0.005
1,1,1-TCA	0.011
TCE	**2.5**
VC	0.0048

MW-5	
5/1/12	
B	< 0.25
CE	< 0.5
CF	< 0.5
1,1-DCA	< 0.5
1,1-DCE	< 0.5
cis-DCE	**11**
PCE	< 0.5
1,1,1-TCA	< 0.5
TCE	**270**
VC	< 0.25

MW-9	
5/1/12	
B	< 0.025
CE	< 0.05
CF	< 0.05
1,1-DCA	< 0.05
1,1-DCE	< 0.05
cis-DCE	**4.6**
PCE	< 0.05
1,1,1-TCA	< 0.05
TCE	**64**
VC	< 0.025

MW-8	
5/1/12	
B	< 0.0005
CE	< 0.001
CF	< 0.001
1,1-DCA	< 0.001
1,1-DCE	< 0.001
cis-DCE	< 0.001
PCE	< 0.001
1,1,1-TCA	< 0.001
TCE	< 0.0005
VC	< 0.0005

MW-10	
5/1/12	
B	< 0.01
CE	< 0.02
CF	< 0.02
1,1-DCA	< 0.02
1,1-DCE	< 0.02
cis-DCE	**19**
PCE	< 0.02
1,1,1-TCA	< 0.02
TCE	**21**
VC	**0.53**

MW-11	
5/1/12	
B	< 0.005
CE	< 0.01
CF	< 0.01
1,1-DCA	0.37
1,1-DCE	**0.056**
cis-DCE	**6.5**
PCE	< 0.01
1,1,1-TCA	0.11
TCE	**1.5**
VC	< 0.005

MW-12	
5/1/12	
B	< 0.0005
CE	< 0.001
CF	< 0.001
1,1-DCA	< 0.001
1,1-DCE	< 0.001
cis-DCE	< 0.001
PCE	< 0.001
1,1,1-TCA	< 0.001
TCE	< 0.0005
VC	< 0.0005

Constituents	Symbol	Class II Groundwater Remediation Objective (mg/L)
Benzene	B	0.025
Chloroethane	CE	0.0046
Chloroform	CF	0.001
1,1-Dichloroethane	1,1-DCA	3.5
1,1-Dichloroethene	1,1-DCE	**0.035**
cis-1,2-Dichloroethen	cis-DCE	**0.2**
Tetrachloroethene	PCE	**0.025**
1,1,1-Trichloroethane	1,1,1-TCA	**1**

NOTES:

1. All values are in milligrams per liter (mg/L).

2. Bold values exceed the TACO Tier 1 Class II Groundwater Remediation Objectives.

3. Duplicate results are shown in square brackets.

DETREX CORPORATION
MELROSE PARK, ILLINOIS

GROUNDWATER ANALYTICAL RESULTS 2ND QUARTER 2012

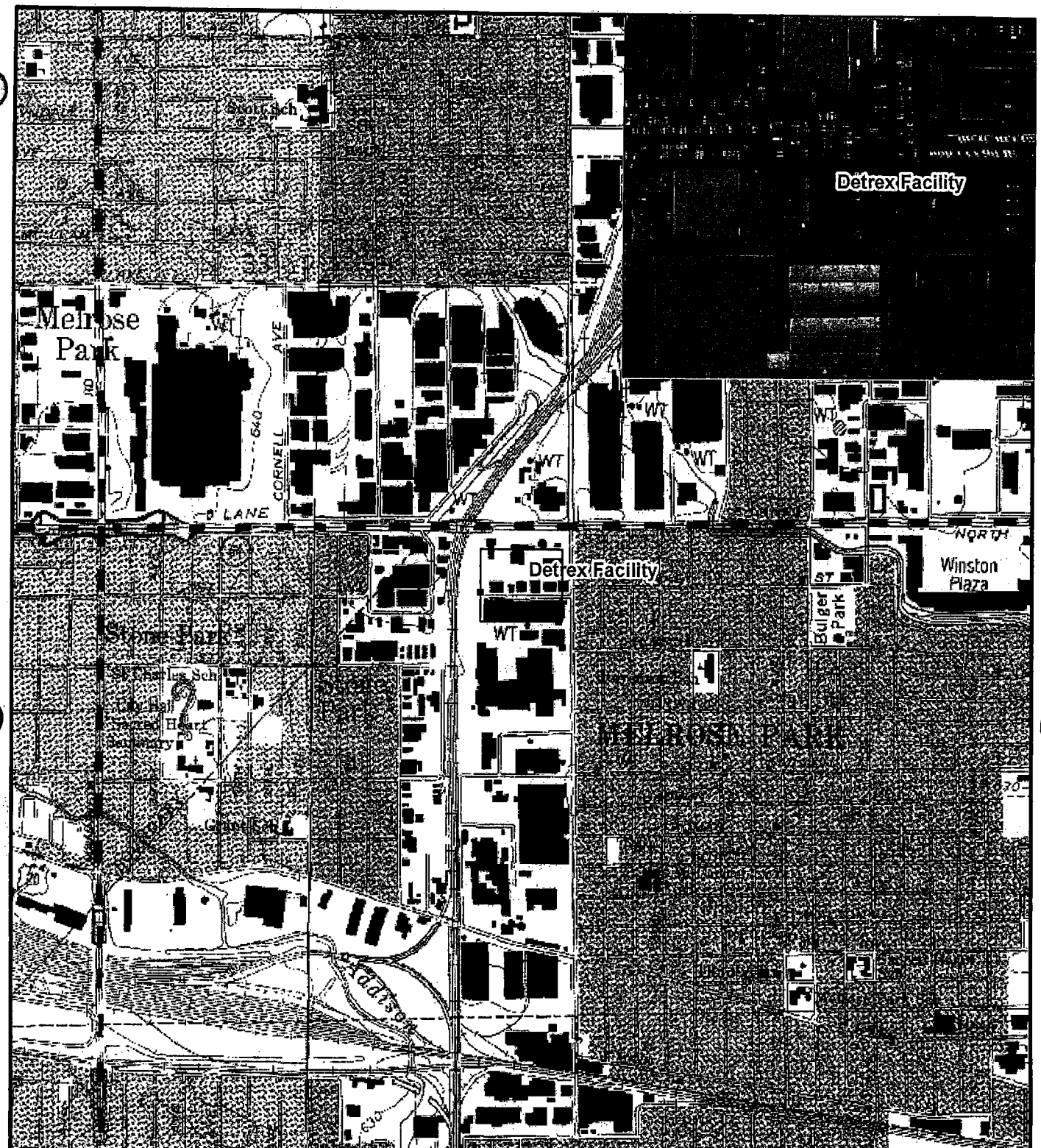
ARCADIS

FIGURE 4

CITY: KNOXVILLE DIV: ENV DB: A.SMITH PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
G:\GIS\Detrex\MelrosePark\Documents\Analytical\GW_Data_2012_Q2.mxd PLOTTED: 6/12/2012 9:18:48 AM BY: asmith

ARCADIS

Figures



Legend

- Site Location

N

Source Notes:

1,500 750 0 1,500 3,000 Feet

Topographical Map Source: United States Geological Survey 7.5 minute Digital Raster Graphics. Quadrangles used: Elmhurst, IL; 1993, and River Forest, IL; 1993.

Aerial Photo Source: Color aerial image provided by USGS. Image photographed during National Aerial Photography Program III in 2001 or 2002. Obtained through USGS website, http://seamless.usgs.gov

ArcGIS - ArcInfo 8.3

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ARCADIS
35 East Wacker Drive, Suite 1000
Chicago, IL 60601
Tel (312)263-6703 Fax (312)263-7897

Map Date:	File Name:	File Location:	Produced By:	Checked By:	Project Manager:
03/08/2004	SiteLocation.mxd	G:/GIS/Projects/Detrex/MelrosePark/	M. Eiseman	S. Vasas	PM
				Dept. Manager: PM	Geodatabase: Client.mdb
				Project Number: SF003040.0001	Figure: 1

Detrex Corporation

Site Location Map

Melrose Park, Illinois

Table 3. Summary of All Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	Data - Monitoring Wells																					
Location ID:	MW-10	MW-10	MW-10	MW-11	MW-11	MW-11	MW-11	MW-11	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-14	MW-14	MW-14
Sample ID:	MW-10	MW-10	MW-10	MW-11	MW-11	MW-11	MW-11	MW-11	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13 Dup	MW-13	MW-13	MW-13	MW-14	MW-14	MW-14
Onsite or Offsite:	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site
Property:	Outback	Outback	Outback	B&G Sales	B&G Sales	B&G Sales	B&G Sales	B&G Sales	LaMantia	LaMantia	LaMantia	LaMantia	LaMantia	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford
Sample Date:	6/7/11	11/9/11	5/1/12	6/23/10	11/23/10	5/23/11	11/9/11	5/1/12	6/23/10	11/22/10	5/23/11	11/9/11	5/1/12	6/23/10	11/22/10	6/23/10	5/24/11	11/7/11	5/2/12	6/23/10	11/22/10	5/24/11
Benzene	< 0.025	<0.025	< 0.01	< 0.1	< 0.01	< 0.010	<0.005	< 0.005	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	< 0.01	< 0.001	< 0.0005
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	< 0.050	<0.05	< 0.02	< 0.1	< 0.01	< 0.020	<0.01	< 0.01	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
Chloroform	< 0.050	<0.05	< 0.02	< 0.1	**0.0076 J**	< 0.020	<0.01	< 0.01	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
1,1-Dichloroethane	< 0.050	<0.05	< 0.02	1	0.65	0.47	0.37	0.37	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
1,1-Dichloroethene	**0.045 J**	<0.05	< 0.02	**0.18**	**0.14**	**0.073**	**0.052**	**0.056**	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	0.00029 J	< 0.001
cis-1,2-Dichloroethene	**21**	**12 D**	**19**	**17**	**9.6**	**6.5**	**5.9 D**	**6.5**	0.0022	0.00038 J	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.35**	0.027	0.023
Tetrachloroethene	< 0.050	<0.05	< 0.02	< 0.1	< 0.01	< 0.020	<0.01	< 0.01	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	< 0.050	<0.05	< 0.02	0.22	0.21	0.12	0.087	0.11	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	**21**	**15 D**	**21**	**1.7**	**2.6**	**1.7**	**1.2**	**1.5**	< 0.001	< 0.001	< 0.0005	0.00075	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	< 0.001	< 0.001
Vinyl chloride	**0.56**	**0.095**	**0.53**	< 0.1	< 0.01	< 0.010	<0.005	< 0.005	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	**2.2**	0.019	0.0084
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.038**	0.0041	0.0015
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See notes on page 5.

Table 3. Summary of All Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	Data - Monitoring Wells												Data - Temporary Wells								
Location ID:	MW-14	MW-14	MW-15	MW-15	MW-15	MW-15	MW-15	MW-16	MW-16	MW-16	MW-16	MW-16	A-HA-04	BH37	BH38	BH38	BH39	BH40	BH42	BH42	BH44
Sample ID:	MW-14	MW-14	MW-15	MW-15	MW-15	MW-15	MW-15	MW-16	MW-16	MW-16	MW-16	MW-16	HA-04	BH-GW-37	BH-GW-38	BH-GW-38D	BH-GW-39	BH-GW-40	BH-GW-42	BH-GW-42D	BH-GW-44
Onsite or Offsite:	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site
Property:	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	Ford	LaMantia	LaMantia	LaMantia	LaMantia	Outback	B&G Sales	Ford	Ford	Ford
Sample Date:	11/7/11	5/2/12	6/23/10	11/22/10	5/24/11	11/7/11	5/2/12	6/23/10	11/23/10	5/24/11	11/7/11	5/2/12	7/13/07	3/1/97	3/1/97	3/1/97	3/1/97	3/1/97	3/1/97	3/1/97	3/1/97
Benzene	<0.0005	< 0.0025	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	**0.0297**	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005	< 0.1	< 0.005	< 0.01	< 5	< 0.005	< 0.005	< 10	< 0.005
Chloroethane	<0.001	< 0.005	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.01	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	<0.001	< 0.005	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	**0.0037**	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	0.00081 J	0.0038 J	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.005	< 0.1	< 0.005	< 0.01	< 5	< 0.005	0.18	< 10	< 0.005
1,1-Dichloroethene	<0.001	0.0037 J	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	0.0091	< 0.1	< 0.005	0.013	**8.5**	< 0.005	0.033	< 10	< 0.005
cis-1,2-Dichloroethene	0.063	**0.26**	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	**4.72**	0.2	< 0.005	< 0.005	**160**	< 0.005	**1.8**	< 10	< 0.005
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0476	< 0.1	< 0.005	< 0.01	< 5	< 0.005	0.024	< 10	< 0.005
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005	< 0.1	< 0.005	< 0.01	< 5	< 0.005	0.045	< 10	< 0.005
Tetrachloroethene	<0.001	< 0.005	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	0.0061	< 0.1	< 0.005	< 0.01	< 5	< 0.005	**1.2**	< 10	< 0.005
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	<0.001	0.011	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	0.0203	< 0.1	< 0.005	< 0.01	< 5	< 0.005	1	< 10	< 0.005
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	**0.13**	**2.5**	< 0.001	< 0.001	< 0.0005	0.00057	< 0.0005	< 0.001	0.00074 J	< 0.0005	<0.0005	< 0.0005	**54.9**	**1.7**	0.007	0.016	**8.6**	**0.027**	**14**	**190 D**	< 0.005
Vinyl chloride	0.0028	0.0048	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	< 0.001	< 0.001	< 0.0005	<0.0005	< 0.0005	**0.0572**	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are in milligrams per liter (mg/L).

<	Less than.
Bold	Value exceeds Class II Groundwater Objectives.
B&G Sales	B&G Sales property (former Handy Button property, 1740/1750 N. 25th Avenue).
D	Concentration is based on a diluted sample analysis
Detrex	On the Detrex property (2537 W. Le Moyne).
DJ	Compounds at secondary dilution factor. Estimated value.
E	Value exceeded calibration range of GC/MS instrument.
E of 25th	Well located in parking lot East of N. 25th Avenue.
Ford	Al Piemonte Ford property (2500 W. North Avenue).
J	Estimated below the reporting limit but above the method detection limit.
LaMantia	LaMantia Plastics property (2525 W. Le Moyne).
NA	Not available.
Off-site	Off the Detrex property.
On-site	On the Detrex property.
Outback	Outback Sales property (2555 W. Le Moyne).
Post Office	U.S. Post Office property (1824 N. 25th Avenue).
REM	Midwest REM Enterprises (2601 W. Le Moyne).
TACO	Tiered Approach to Corrective Action.
UJ	Result is considered not detected but estimated due to QC deficiencies.

Table 3. Summary of All Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	Data - Monitoring Wells																					
Location ID:	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-03	MW-03	MW-04	MW-04	MW-04	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05
Sample ID:	MW2 (Dup)	MW-2	MW-2 (Dup)	MW-2	MW-2 (Dup)	MW-2	MW-2 (Dup)	MW-2	MW-2 (Dup)	MW3	MW-03	MW4	MW4	MW-04	MW5	MW5	MW5 D	MW-05	MW-05 DUP-01	MW-05	MW-05	MW-5
Onsite or Offsite:	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site
Property:	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	B&G Sales	B&G Sales	B&G Sales	B&G Sales	B&G Sales	LaMantia	LaMantia	LaMantia	LaMantia	LaMantia	LaMantia	LaMantia	LaMantia
Sample Date:	6/15/10	11/23/10	11/23/10	5/24/11	5/24/11	11/9/11	11/9/11	5/2/12	5/2/12	5/24/04	4/27/07	11/1/95	5/24/04	4/27/07	11/1/95	5/24/04	5/24/04	4/27/07	4/27/07	11/19/09	6/15/10	11/23/10
Benzene	< 1	< 1	< 1	< 0.50	< 0.50	<0.13	<0.1	< 0.25	< 0.25	< 0.001	< 0.005	NA	< 0.001	< 0.005	NA	< 1	< 2	0.0387 J	0.0156 J	< 0.5	< 1	< 1
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	< 0.005	< 0.005	NA	NA	NA
Chloroethane	< 1	< 1	< 1	< 1.0	< 1.0	<0.25	<0.2	< 0.5	< 0.5	< 0.001	< 0.01	NA	< 0.001	< 0.01	NA	< 1	< 2	0.132 J	< 0.01 J	< 0.5	< 1	< 1
Chloroform	< 1	< 1	< 1	< 1.0	< 1.0	<0.25	<0.2	< 0.5	< 0.5	< 0.001	< 0.001	NA	< 0.001	< 0.001	NA	< 1	< 2	0.0097 J	0.0103	< 0.5	< 1	< 1
1,1-Dichloroethane	2.5	3.3	3.5	2.6	3	3.7	3.9	1.9	2.1	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	4.38 J	0.0212 J	< 0.5	< 1	< 1
1,1-Dichloroethene	< 1	0.61 J	0.67 J	< 1.0	0.66 J	0.56	0.6	0.39 J	0.45 J	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	0.0615 J	0.0606	< 0.5	< 1	< 1
cis-1,2-Dichloroethene	38	43	47	34	40	43	44 D	35	34	0.014	0.0064	< 0.005	< 0.001	< 0.005	< 10	15	17 D	18.6 J	23.4 J	24	21	23
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0018	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	0.0608 J	0.172 J	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 10	< 5	< 1	< 0.005	< 0.005	NA	NA	NA
Tetrachloroethene	< 1	< 1	< 1	< 1.0 UJ	8.3 J	0.16 J	0.17 J	< 0.5	< 0.5	< 0.001	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	0.0207 J	0.0179	< 0.5	< 1	< 1
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.001	< 0.005	NA	< 0.001	< 0.005	NA	< 1	< 2	0.0065 J	< 0.005 J	NA	NA	NA
1,1,1-Trichloroethane	< 1	1.3	1.4	< 1.0	< 1.0	1.1	1.4	1.7	1.6	0.0017	< 0.005	< 0.005	< 0.001	< 0.005	< 10	< 1	< 2	0.0693 J	0.0617	< 0.5	< 1	< 1
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.001	< 0.005	NA	< 0.001	< 0.005	NA	< 1	< 2	0.0211 J	0.0118 J	NA	NA	NA
Trichloroethene	520	340	380	400	350	310 D	330 D	250	280	0.099	0.1	< 0.005	< 0.001	< 0.005	110	300 E	380 D	291 J	308 D	500	640	410
Vinyl chloride	< 1	< 1	< 1	< 0.50	< 0.50	0.062 J	0.075 J	< 0.25	< 0.25	0.0022	< 0.002	NA	< 0.001	< 0.002	NA	< 1	< 2	0.215 J	0.24	0.5	< 1	0.49 J
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.002	NA	NA	< 0.002	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA	NA

See notes on page 5.

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Table 3. Summary of All Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	Data - Monitoring Wells																						
Location ID:	MW-05	MW-05	MW-05	MW-06	MW-06	MW-06	MW-07	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-09	MW-09	MW-09	MW-09	MW-09	MW-9	MW-9	MW-10	MW-10
Sample ID:	MW-5	MW-5	MW-5	MW6	MW6	MW6	MW-07	MW-08	MW-08	MW-8	MW-8	MW-8	MW-8	MW-8	MW-09	MW-09	MW-09	MW-9	MW-9	MW-9	MW-9	MW-10	MW-10
Onsite or Offsite:	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site
Property:	LaMantia	LaMantia	LaMantia	REM	REM	REM	B&G Sales	E of 25th	E of 25th	E of 25th	E of 25th	E of 25th	E of 25th	E of 25th	Post Office	Post Office	Post Office	Post Office	Post Office	Post Office	Post Office	Outback	Outback
Sample Date:	5/23/11	11/9/11	5/1/12	11/1/95	5/24/04	11/19/09	4/27/07	4/27/07	11/20/09	6/15/10	11/22/10	5/23/11	11/7/11	5/1/12	4/27/07	11/19/09	6/15/10	11/22/10	5/23/11	11/7/11	5/1/12	4/27/07	11/19/09
Benzene	<0.50	<0.1	<0.25	NA	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.005	<0.1	<0.2	<0.1	<0.10	<0.05	<0.025	<0.005	<0.05
Carbon tetrachloride	NA	NA	NA	<0.005	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	<0.005	NA
Chloroethane	<1.0	<0.2	<0.5	NA	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	<0.01	<0.05
Chloroform	<1.0	<0.2	<0.5	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0023**	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	**0.0027**	<0.05
1,1-Dichloroethane	<1.0	<0.2	<0.5	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	<0.005	<0.05
1,1-Dichloroethene	<1.0	<0.2	<0.5	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	**0.0467**	**0.057**
cis-1,2-Dichloroethene	**21**	**13**	**11**	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**3.5**	**6.6**	**5**	**6.2**	**3.2**	**4.7**	**4.6**	**27.6**	**30**
trans-1,2-Dichloroethene	NA	NA	NA	<0.005	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	0.0438	NA	NA	NA	NA	NA	NA	0.27	NA
Methylene chloride	NA	NA	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	<0.005	NA
Tetrachloroethene	<1.0	<0.2	<0.5	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	0.0055	<0.05
Toluene	NA	NA	NA	NA	<0.001	NA	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	NA	NA	NA	NA	NA	NA	<0.005	NA
1,1,1-Trichloroethane	<1.0	<0.2	<0.5	<0.005	<0.001	<0.001	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.005	<0.1	<0.2	<0.1	<0.20	<0.1	<0.05	<0.005	<0.05
1,1,2-Trichloroethane	NA	NA	NA	NA	<0.001	NA	<0.005	<0.005	<0.001	<0.001	<0.001	<0.0005	0.00034 J	<0.0005	**32.1**	**64**	**54**	**58**	**43**	**60 D**	**64**	**34.5**	**34**
Trichloroethene	**440**	**240 D**	**270**	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	0.0025	<0.1	<0.2	<0.1	<0.10	<0.05	<0.025	**0.681**	**0.81**
Vinyl chloride	<0.50	**0.18**	<0.25	NA	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	0.0006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	0.0037	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	0.0001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See notes on page 5.

Table 2. Summary of May 1 2, 2012, Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	Statistical Summary						TACO Standards			Data													
Location ID:							Groundwater Ingestion Exposure Route Groundwater Remediation Objective Class II (mg/L)	Water Solubility (mg/L)	Maximum Detect Exceeds Standards (Yes/No)	MW-01	MW-02	MW-02	MW-05	MW-08	MW-09	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16
Sample ID:										MW-1	MW-2	MW-2 (Dup)	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16
Onsite or Offsite:										on-site	on-site	on-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site	off-site
Property:	Detection Frequency	Maximum Non-Detect (mg/L)	Minimum Detect (mg/L)	Arithmetic Average (mg/L)	Maximum Detect (mg/L)	Maximum Detect Location				Detrex	Detrex	Detrex	LaMantia	E of 25th	Post Office	Outback	B&G Sales	LaMantia	Ford	Ford	Ford	Ford
Sample Date:										5/2/12	5/2/12	5/2/12	5/1/12	5/1/12	5/1/12	5/1/12	5/1/12	5/1/12	5/2/12	5/2/12	5/2/12	5/2/12
Benzene	0/12	0.25	ND	ND	ND	ND	0.025	1,750	No	< 0.025	< 0.25	< 0.25	< 0.25	< 0.0005	< 0.025	< 0.01	< 0.005	< 0.0005	< 0.0005	< 0.0025	< 0.0005	< 0.0005
Chloroethane	0/12	0.5	ND	ND	ND	ND	0.0046	NA	No	< 0.05	< 0.5	< 0.5	< 0.5	< 0.001	< 0.05	< 0.02	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.001
Chloroform	0/12	0.5	ND	ND	ND	ND	0.001	7,920	No	< 0.05	< 0.5	< 0.5	< 0.5	< 0.001	< 0.05	< 0.02	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.001
1,1-Dichloroethane	4/12	0.5	0.0038	0.238	2.1	MW-02 (Dup)	3.5	5,060	No	0.1	1.9	2.1	< 0.5	< 0.001	< 0.05	< 0.02	0.37	< 0.001	< 0.001	0.0038 J	< 0.001	< 0.001
1,1-Dichloroethene	4/12	0.5	0.0037	0.07	0.45	MW-02 (Dup)	**0.035**	2,250	Yes	**0.043 J**	**0.39 J**	**0.45 J**	< 0.5	< 0.001	< 0.05	< 0.02	**0.056**	< 0.001	< 0.001	0.0037 J	< 0.001	< 0.001
cis-1,2-Dichloroethene	7/12	0.001	0.26	7.61	35	MW-02	**0.2**	3,500	Yes	**15**	**35**	**34**	**11**	< 0.001	**4.6**	**19**	**6.5**	< 0.001	< 0.001	**0.26**	< 0.001	< 0.001
Tetrachloroethene	1/12	0.5	0.066	0.0509	0.066	MW-01	**0.025**	200	Yes	**0.066**	< 0.5	< 0.5	< 0.5	< 0.001	< 0.05	< 0.02	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.001
1,1,1-Trichloroethane	4/12	0.5	0.011	0.179	1.7	MW-02	**1**	1,330	Yes	0.045 J	**1.7**	**1.6**	< 0.5	< 0.001	< 0.05	< 0.02	0.11	< 0.001	< 0.001	0.011	< 0.001	< 0.001
Trichloroethene	7/12	0.0005	1.5	55.5	280	MW-02 (Dup)	**0.025**	1,100	Yes	**27**	**250**	**280**	**270**	< 0.0005	**64**	**21**	**1.5**	< 0.0005	< 0.0005	**2.5**	< 0.0005	< 0.0005
Vinyl chloride	2/12	0.25	0.0048	0.0678	0.53	MW-10	**0.01**	2,760	Yes	< 0.025	< 0.25	< 0.25	< 0.25	< 0.0005	< 0.025	**0.53**	< 0.005	< 0.0005	< 0.0005	0.0048	< 0.0005	< 0.0005

Notes:

All values are in milligrams per liter (mg/L).
Arithmetic average calculated using 1/2 of the detection limit.

<	Less than.
Bold	Value exceeds Class II Groundwater Objectives.
B&G Sales	B&G Sales property (former Handy Button property, 1740/1750 N. 25th Avenue).
D	Concentration is based on a diluted sample analysis
Detrex	On the Detrex property (2537 W. Le Moyne).
E of 25th	Well located in parking lot East of N. 25th Avenue.
Ford	Al Piemonte Ford property (2500 W. North Avenue).
J	Estimated below the reporting limit but above the method detection limit.
LaMantia	LaMantia Plastics property (2525 W. Le Moyne).
NA	Not available.
N/A	Not applicable.
ND	Not detected.
Off-site	Off the Detrex property.
On-site	On the Detrex property.
Outback	Outback Sales property (2555 W. Le Moyne).
Post Office	U.S. Post Office property (1824 N. 25th Avenue).
REM	Midwest REM Enterprises (2601 W. Le Moyne).
TACO	Tiered Approach to Corrective Action.

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Table 3. Summary of All Groundwater Data, Melrose Park Facility, Detrex Corporation, Melrose Park, Illinois

Constituents	TACO Standards				Data - Monitoring Wells															
Location ID:					MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID:					MW1	MW1	MW1	MW1	MW1	MW-1	MW-1	MW-1	MW-1	MW2	MW2	MW2 D	MW2	MW2	MW2 (Dup)	MW2
Onsite or Offsite:					on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
Property:	Class II - Groundwater Ingestion Exposure Route Groundwater Remediation Objectives (mg/L)	Water Solubility (mg/L)	Maximum Detect (mg/L)	Maximum Detect Exceeds Standards (Yes/No)	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex	Detrex
Sample Date:					11/1/95	5/24/04	4/27/07	11/20/09	6/15/10	11/23/10	5/24/11	11/9/11	5/2/12	11/1/95	5/24/04	5/24/04	4/27/07	11/20/09	11/20/09	6/15/10
Benzene	**0.025**	1750	**0.0387**	Yes	NA	< 0.1	< 0.005	< 0.05	< 0.1	< 0.1	< 0.005	<0.05	< 0.025	NA	< 0.5	< 2	< 0.005	< 0.5	< 0.2	< 0.5
Carbon tetrachloride	0.025	793	ND	No	< 0.1	< 0.1	< 0.005	NA	NA	NA	NA	NA	NA	< 10	< 0.5	< 2	< 0.005	NA	NA	NA
Chloroethane	**0.0046**	NA	**0.132**	Yes	NA	< 0.1	< 0.01	< 0.05	< 0.1	< 0.1	**0.0098 J**	<0.1	< 0.05	NA	< 0.5	< 2	**0.0527**	< 0.5	< 0.2	< 0.5
Chloroform	**0.001**	7920	**0.0295**	Yes	NA	< 0.1	< 0.001	< 0.05	< 0.1	< 0.1	< 0.010	<0.1	< 0.05	NA	< 0.5	< 2	**0.0295**	< 0.5	< 0.2	< 0.5
1,1-Dichloroethane	**3.5**	5060	**4.38**	Yes	< 0.1	< 1	0.12	0.096	0.12	0.08 J	0.11	0.096 J	0.1	< 10	1.9	2.3 D	1.97	2.3	2.5	2.8
1,1-Dichloroethene	**0.035**	2250	**8.5**	Yes	< 0.1	< 0.1	0.0234	< 0.05	< 0.1	< 0.1	0.02	<0.1	**0.043 J**	< 10	< 0.5	< 2	**0.371**	**0.44 J**	**0.46**	**0.6**
cis-1,2-Dichloroethene	**0.2**	3500	**160**	Yes	**0.48**	**5.4**	**9.58**	**7.1**	**12**	**9.2**	**9.0**	**7.3**	**15**	< 10	**25**	**28 D**	**45.1**	**40**	**48**	**40**
trans-1,2-Dichloroethene	0.5	6300	0.369	No	< 0.1	< 0.1	0.177	NA	NA	NA	NA	NA	NA	< 10	< 0.5	< 2	0.369	NA	NA	NA
Methylene chloride	0.05	13000	0.045	No	< 0.1	< 0.5	< 0.005	NA	NA	NA	NA	NA	NA	< 10	< 2.5	< 10	0.0165	NA	NA	NA
Tetrachloroethene	**0.025**	200	**1.7**	Yes	< 0.1	< 0.1	**0.0718**	**0.1**	**0.1**	**0.073 J**	**0.087**	**0.068 J**	**0.066**	< 10	< 0.5	< 2	**0.13**	< 0.5	**0.17 J**	< 0.5
Toluene	2.5	526	0.0296	No	NA	< 0.1	< 0.005	NA	NA	NA	NA	NA	NA	NA	< 0.5	< 2	0.0296	NA	NA	NA
1,1,1-Trichloroethane	**1**	1330	**2**	Yes	< 0.1	< 0.1	< 0.005	< 0.05	< 0.1	< 0.1	0.016	<0.1	0.045 J	< 10	**1.3**	**1.3 DJ**	< 0.005	**1.6**	**1.7**	**2**
1,1,2-Trichloroethane	0.05	4420	0.0276	No	NA	< 0.1	< 0.005	NA	NA	NA	NA	NA	NA	NA	< 0.5	< 2	0.0276	NA	NA	NA
Trichloroethene	**0.025**	1100	**640**	Yes	**1.6**	**16**	**31.5**	**35**	**42**	**30**	**33**	**30 D**	**27**	**59**	**170 E**	**210 D**	**230 D**	**420**	**360**	**360**
Vinyl chloride	**0.01**	2760	**0.81**	Yes	NA	< 0.1	0.0026	< 0.05	< 0.1	**0.04 J**	0.0068	<0.05	< 0.025	NA	< 0.5	< 2	**0.051**	< 0.5	< 0.2	< 0.5
Fluoranthene	1.4	0.206	0.0007	No	0.0007	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA
Fluorene	1.4	1.98	0.0037	No	< 0.002	NA	NA	NA	NA	NA	NA	NA	NA	< 0.002	NA	NA	NA	NA	NA	NA
Phenanthrene	1.05	NA	0.0012	No	0.0007	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA
Pyrene	1.05	0.135	0.0001	No	< 0.0001	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0001	NA	NA	NA	NA	NA	NA

See notes on page 5.

4th QTR 2012

SEMIANNUAL GROUNDWATER MONITORING REPORT

4th QUARTER 2012
DETREX, MELROSE PARK

2537 WEST LE MOYNE STREET
MELROSE PARK, IL
ILD 074424938
LOG NO.: B-113R

Prepared by:
Huff & Huff, Inc.

January 2013

EXECUTIVE SUMMARY

Huff & Huff, Inc. (H&H) was retained by the Detrex Corporation (Detrex) to conduct semi-annual groundwater monitoring activities for their Melrose Park, IL facility during the 4th Quarter of 2012. Historically, the facility was used for shipping and receiving waste material under the Resource Conservation and Recovery Act (RCRA) Part B Permit No. 0311860003. The facility ceased operations on October 1, 2012 and Detrex does not intend to renew the RCRA Permit for the facility.

Historic data collected by a previous consultant (Arcadis) have been included in this Report where appropriate. All existing monitoring wells (2 on-site and 10 off-site) were sampled on November 7-8, 2012. Samples were analyzed for the contaminants of concern (COCs) for the site, which include: benzene; chloroethane; chloroform; 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethene (1,1-DCE); cis-1,2-dichloroethene (cis-DCE); trichloroethene (TCE); 1,1,1-trichloroethane (1,1,1-TCA); tetrachloroethene (PCE); and vinyl chloride (VC). This Report summarizes the groundwater results for the 4th Quarter of 2012.

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY ii

LIST OF ACRONYMS iv

1. INTRODUCTION 1

2. BACKGROUND INFORMATION 2

3. DESCRIPTION OF FIELD ACTIVITIES 4

4. LABORATORY ANALYSIS 5

5. RESULTS 6

   5.1 Groundwater Elevations and Apparent Flow 6

   5.2 Comparison to Class II Groundwater Remedial Objectives 6

   5.3 Constituent Distribution 8

6. ANTICIPATED FUTURE ACTIVITIES 9

7. REFERENCES 10

TABLES

1 Groundwater Elevation Data

2 Summary of 4th Quarter 2012 Groundwater Analytical Results

3 Summary of All Groundwater Analytical Results

FIGURES

1 Site Location Map

2 Site Layout Map

3 Groundwater Elevations, 4th Quarter 2012

4 Groundwater Analytical Results, 4th Quarter, 2012

5 Trichloroethene Isoconcentration Contours

6 cis-1,2-Dichloroethene Isoconcentration Contours

7 1,1-Dichloroethene Isoconcentration Contours

8 1,1,1-Trichloroethane Isoconcentration Contours

9 Vinyl Chloride Isoconcentration Contours

APPENDICES

Appendix A – Laboratory Analytical Report

Electronic Data Submittal

Appendix B – Previous Groundwater Flow Maps – 2007 through 2012 (previous consultant)

LIST OF ACRONYMS

1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
bgs	below ground surface
°C	degrees Celsius
cis-DCE	cis-1,2-dichloroethene
COCs	Contaminants of Concern
Detrex	Detrex Corporation
feet	feet
H&H	Huff & Huff, Inc.
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
ISGS	Illinois State Geological Survey
ISWS	Illinois State Water Survey
K	hydraulic conductivity
mg/kg	milligram per kilogram
mg/L	milligram per liter
MS/MSD	matrix spike / matrix spike duplicate
MSL	mean sea level
MW	monitoring well
NFR	no further remediation
PCE	tetrachloroethene
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RO	remedial objective(s)
QA/QC	quality assurance / quality control
SOP	Standard Operating Procedures
TACO	Tiered Approach to Corrective Action Objectives [IAC Title 35, Parts 740-742]
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethene
TW	temporary well
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compounds

1. INTRODUCTION

Detrex Corporation (Detrex) retained Huff & Huff, Inc. (H&H) to prepare this Semiannual Groundwater Monitoring Report, which summarizes the results of groundwater monitoring activities conducted in the 4th Quarter of 2012 at the Detrex facility, located at 2537 West Le Moyne Street in Melrose Park, IL. Site-related monitoring wells on the Detrex property and adjacent neighboring properties were sampled on November 7-8, 2012. Samples were analyzed for the contaminants of concern (COCs) for the site, which include: benzene; chloroethane; chloroform; 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethene (1,1-DCE); cis-1,2-dichloroethene (cis-DCE); trichloroethene (TCE); 1,1,1-trichloroethane (1,1,1-TCA); tetrachloroethene (PCE); and vinyl chloride (VC). This Report summarizes the groundwater results for the 4th Quarter of 2012. Figure 1 depicts the location of the site. Figure 2 depicts the layout of the site.

In addition to this report, H&H submitted the analytical data in electronic format to Mr. Bur Filson of the Illinois EPA for incorporation into the Illinois Storet database on January 7, 2013.

2. BACKGROUND INFORMATION

The Detrex facility is located at 2537 West Le Moyne Street in Melrose Park, Cook County, Illinois and includes an area of approximately 0.33 acres. The site is comprised of a one-story industrial warehouse building with an office, a loading dock area in the southwest corner with a driveway that terminates at Le Moyne Street, and a derelict railroad spur and associated loading dock behind (north of) the building. The building was constructed in 1956 and Detrex began operations at the facility in 1974. The property is zoned for industrial use, and is surrounded by industrial and commercial properties. The following table summarizes the surrounding properties and the associated monitoring wells (if any) for each property:

SUMMARY OF SURROUNDING PROPERTIES

Direction from Detrex	Address	Current Occupant	Status	Associated Monitoring Well(s)
South	1740-1750 N. 25th Ave	B&G Sales, Inc	Active, former Handy Button property	MW-11
West	2555 W. Le Moyne St	Vacant	Unoccupied - former Outback Sales property	MW-10
West	2575 W. Le Moyne St	Dynamic Fastener	Active, former Sitex property	MW-10
West	2601 W. Le Moyne St	Midwest REM Enterprises	Active	n/a
North	2500 W. North Ave	Al Piemonte Ford	Active	MW-13; MW-14; MW-15; MW-16
Northeast	1824 N. 25th Ave	U.S. Postal Office	Active	MW-09
East	2525 W. Le Moyne St	LaMantia Plastics	Active	MW-05; MW-12
East	1800 N. 25th Ave	Enviro Tech International, Inc.	Active; leased from LaMantia Plastics	MW-09

East	?? N. 25th Ave	Mech-Tronics	Active; parking lot	MW-08

Chlorinated volatile organic compounds (VOCs) are either known to have been used or were likely to have been used at several of the properties identified in the Summary of Surrounding Properties table above. The nearest residential property is approximately 800-900 feet east of the Detrex property. The nearest public school is approximately 2,100 feet southeast. The population of the Village of Melrose Park is 25,524, as of 2011 (U.S. Census Bureau). A *Phase III Summary of Environmental Conditions Report* dated May 5, 2008 (by Arcadis) includes a more in-depth discussion on site history and site conditions.

Chlorinated solvent impacts at the Detrex facility and adjacent properties occurred during routine activities at the facility. On-site and off-site impacts that are potentially attributable to Detrex may have occurred during the transfer of degreasing products to the facility. Products received at the property have historically included TCE, 1,1,1-TCA, and PCE. Products were most recently received at the truck dock in the southwest corner of the building, and were also historically received from railroad tank cars at the railroad spur north of the building.

The Detrex facility has historically operated under the Resource Conservation and Recovery Act (RCRA), operating under a Part B Permit. The RCRA Permit Application was submitted by the Detrex Corporation, the legal name of the owner/operator. The facility formerly operated under the name Detrex Corporation Solvents and Environmental Services Division. A RCRA Permit B Permit No. 0311860003 (United States Environmental Protection Agency (USEPA) ID No. ILD 074424938) was reissued by the IEPA in October 2003 pursuant to Section 3004(u) of RCRA and 35 Illinois Administrative Code (IAC) 742.201. The current permit expires in October 2013; however, Detrex has notified IEPA that it has ceased all operations at the facility effective December 1, 2012 in anticipation of remedial activities planned to commence in 2013.

3. DESCRIPTION OF FIELD ACTIVITIES

H&H conducted groundwater monitoring and sampling activities on November 7-8, 2012 for all existing site-related monitoring wells (see Figure 2). Prior to sampling, depth-to-water measurements were collected using an electronic water-level indicator. All depth-to-water measurements were collected on November 7th and recorded after wells were allowed to equilibrate for approximately 15 minutes.

A minimum of three well-volumes of groundwater were purged from each monitoring well before sampling using an individual high-density polyethylene bailer for each well. Groundwater quality parameters were measured, including temperature, pH, specific conductivity, odor, and color/relative turbidity. Monitoring wells (MW-3, MW-4, MW-6, and MW-7) were noted to be abandoned and/or destroyed in the previous (2nd Quarter 2012) Semiannual Groundwater Monitoring Report.

The purge water from bailing was collected in buckets and placed in 55-gallon drums in the hazardous waste storage area inside of the facility. The drums were properly labeled with Hazardous Waste stickers, pending off-site disposal. The following additional samples were analyzed for quality assurance and quality control (QA/QC) purposes: a duplicate groundwater sample was collected from monitoring well MW-02; all samples collected on November 7-8, 2012 were held in a single cooler with one trip blank; and one equipment rinse blank was also collected and submitted for analysis.

4. LABORATORY ANALYSIS

Groundwater samples collected by H&H were submitted to First Environmental Laboratories, Inc. located in Naperville, IL (First), a NELAC accredited laboratory with the state of Illinois, on November 9, 2012. Chain-of-custody documentation protocols were followed, and have been included in Appendix A with the laboratory analytical results. The samples were analyzed for the following 10 VOCs identified as COCs for the site: benzene; chloroethane; chloroform; 1,1-DCA; 1,1-DCE; cis-DCE; TCE, 1,1,1-TCA, PCE, and VC. The COCs were previously identified and agreed upon during discussions between Detrex, the IEPA, and the previous consultant (Arcadis). The COCs were tested for using USEPA Method 5030B/8260B.

In the previous Semiannual Groundwater Monitoring Report (2nd Quarter of 2012), Arcadis requested the removal of benzene from the list of COCs; however, H&H was not provided information approving the removal of benzene from the COC list for this site. Therefore, benzene continues to be considered a COC for the purposes of this Report.

The rinse blank collected during the sampling event had a detection of chloroform (0.022 mg/L). However, bottled (drinking) water was used in the field to decontaminate sampling equipment and used for collection of the rinse blank. The bottled water represents the likely source of the chloroform in the rinse blank, as chloroform is a by-product of the chlorination process in commercial drinking water. No other constituents were detected in the rinse blank; and none of the groundwater samples had a chloroform result higher than that detected in the rinse blank. No COCs were detected in the trip blank.

5. RESULTS

5.1 Groundwater Elevations and Apparent Flow

Groundwater elevations were measured on November 7, 2012 and ranged from 623.19 feet above mean sea level (MSL) at MW-08 to 629.28 feet above MSL at MW-10. Depth-to-water below ground surface (bgs) ranged from 2.41 feet at MW-02 to 8.54 feet at MW-08. Depth-to-water measurements (including historic data from the previous consultant) are presented in Table 1. Figure 3 depicts the Groundwater Elevations for the 4th Quarter 2012 sampling event. As shown on Figure 3, the apparent direction of groundwater flow based on the slope of the potentiometric surface was variable, consistent with historical data from the previous consultant. Historically, groundwater conditions at the site include low permeability, low hydraulic conductivity, and low hydraulic gradient. Historical data from the previous consultant are summarized as follows:

- Analysis of slug test data indicates hydraulic conductivity values between 2.92×10^{-8} centimeters per second (cm/s) to 2.05×10^{-6} cm/s, which is within the expected range for the fine-grained lacustrine and glacial deposits present at the site.
- Soil permeability test results from samples collected within the silty clay material indicates permeability of 1.30×10^{-8} cm/s to 6.70×10^{-7} cm/s. Results from samples collected from the clay material on site ranged from 9.60×10^{-9} cm/s to 1.90×10^{-8} cm/s.

The variability of near-surface geologic materials is affecting groundwater flow locally; however, regional flow is being limited by overall low hydraulic conductivity.

5.2 Comparison to Class II Groundwater Remedial Objectives

Groundwater samples were collected from 12 monitoring wells. Figure 2 depicts the monitoring well locations. Table 2 presents the analytical groundwater results from the 4th Quarter 2012 sampling event. Table 3 presents the most recent results with the historical data

from the previous consultant. The laboratory analytical reports are included in Appendix A of this Report.

COCs which were detected at one or more locations above the laboratory reporting limit at levels below the Class II Groundwater RO include: 1,1,1-TCA;, 1,1-DCA; and chloroethane. COCs which were detected above the Class II RO at one or more locations include: benzene; 1,1-DCE; chloroform; PCE; TCE; cis-DCE; and VC. COCs were not detected in the groundwater samples collected from the following monitoring wells: MW-12, MW-13, MW-15, and MW-16. The following table summarizes the detections and highest results from the November 2012 sampling event.

Summary of Detected Constituents of Concern

Constituent	Detected in MW #s	Highest detection (mg/L)	Highest detect location	Detected above the Class II Groundwater RO
Benzene	MW-05	0.026	MW-05	MW-05
1,1,1-TCA	MW-01, MW-02, MW-02[a/], MW-05, MW-11	0.652	MW-02[a/]	none
1,1-DCA	MW-01, MW-02, MW-02[a/], MW-05, MW-11	2.950	MW-02	none
1,1-DCE	MW-01, MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-11	0.416	MW-02[a/]	MW-02, MW-02[a/], MW-05, MW-10, MW-11
Chloroethane	MW-02, MW-02[a/]	0.057	MW-02[a/]	none
Chloroform	MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-11	0.017	MW-02[a/]	MW-02, MW-02[a/], MW-05, MW-11
PCE	MW-01, MW-02, MW-02[a/], MW-05, MW-10	0.183	MW-02[a/]	MW-01, MW-02, MW-02[a/]
TCE	MW-01, MW-02, MW-02[a/], MW-05, MW-08, MW-09, MW-10, MW-11, MW-14	270.000	MW-05	MW-01, MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-11, MW-14
Cis-DCE	MW-01, MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-11, MW-14	34.900	MW-02	MW-01, MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-11
VC	MW-01, MW-02, MW-02[a/], MW-05, MW-09, MW-10, MW-14	1.480	MW-10	MW-01, MW-02, MW-02[a/], MW-05, MW-10

[a/] Refers to duplicate sample collected at MW-02.

The results were compared to the Class II Groundwater Ingestion RO (IAC Part 742 – TACO, Appendix B, Table E), as approved in the IEPA's July 18, 1996 letter to Detrex (Log No. BA-113-CA-2; IEPA 1996). Figure 4 depicts the 4th Quarter 2012 analytical results from November 2012, and indicates concentrations of COCs above the Class II Groundwater ROs.

5.3 Constituent Distribution

Figures 5 through 9 depict the isoconcentration maps for the following constituents: TCE, cis-DCE, 1,1-DCE, 1,1,1-TCA, and VC. Although benzene, 1,1-DCA, chloroethane, chloroform, and PCE were detected in one or more samples, the results were not used to generate plume maps due to an insufficient number of detections for each of these constituents.

Groundwater impacts have been delineated to below the Class II Groundwater ROs north of the Detrex property on the Al Piemonte Ford property (MW-13, MW-15, and MW-16). Groundwater impacts are concentrated within the historic railroad spur area north of Detrex, as reflected by the results at MW-01, MW-02, and MW-05.

6. ANTICIPATED FUTURE ACTIVITIES

This is the final semiannual Groundwater Monitoring Report for 2012. Detrex completely ceased operations at the site on December 1, 2012. Intensive soil investigation activities were conducted in December 2012 to confirm impacted areas. Detrex is planning to conduct remedial activities in 2013 on the property.

Semiannual groundwater sampling is anticipated for completion during 2013 as the site is not yet remediated. A Semiannual Groundwater Monitoring Report is planned for the 2nd Quarter 2013, with submission prior to July 15, 2013.

7. REFERENCES

Arcadis U.S., Inc. *Phase III Summary of Environmental Conditions Report for Detrex Corporation Facility Located in Melrose Park, IL.* May 5, 2008.

Arcadis U.S., Inc. *2nd Quarter Groundwater Monitoring Report for Detrex Corporation Facility . Located in Melrose Park, IL. May* 2012.

Detrex Corporation. Melrose Park, IL, RCRA Part B Permit No. 0311860003 and USEPA ID No. ILD074424938, issued by IEPA September 1994.

IEPA Letter to Detrex Corporation Log No. B-113-CA-2, July 18, 1996.

IEPA Letter to Detrex Corporation. Log No. B-113R-CA-8 and 9. July 9, 2009.

Illinois Administrative Code Title 35, Part 742. Final: June 5, 2007. *Tiered Approach to Cleanup Objectives* (TACO).

"Population Estimates." *United States 2011 Census.* United States Department of Commerce, 2012. 10 Dec. 2012.<http://www.census.gov/popest/data/cities/totals/2011/index.html>.

TABLE 1
GROUNDWATER ELEVATION DATA AND FIELD PARAMETERS

Monitoring Well	Date Measured	TOC Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Well Depth (ft)
MW-1	10/9/95	631.67	14.44	617.23	14.72
	10/16/95	631.67	11.34	620.33	14.72
	10/31/05	631.67	6.02	625.65	14.72
	11/10/95	631.67	5.27	626.40	14.72
	8/26/97	631.67	4.02	627.65	14.59
	5/21/04	631.67	3.90	627.77	14.60
	4/27/07	631.62	3.51	628.11	14.82
	9/11/07	631.62	5.02	626.60	14.82
	3/5/08	631.62	3.71	627.91	14.82
	3/14/08	631.62	3.75	627.87	14.82
	11/20/09	631.62	4.06	627.56	14.80
	6/15/10	631.62	3.86	627.76	14.50
	11/23/10	631.62	5.62	626.00	14.77
	5/24/11	631.52	3.91	627.61	14.87
	11/9/11	631.52	4.94	626.58	14.50
	5/2/12	631.52	3.74	627.78	14.62
	11/7/2012	631.68	4.62	627.06	14.78
MW-2	10/9/95	631.76	dry	dry	14.72
	10/16/95	631.76	14.65	617.11	14.72
	10/31/95	631.76	12.48	619.28	14.72
	11/10/95	631.76	11.39	620.37	14.72
	8/26/97	631.76	3.68	628.08	14.58
	5/21/04	631.76	2.19	629.57	14.58
	4/27/07	631.76	NM	NM	NM
	9/11/07	631.76	3.40	628.36	14.58
	3/5/08	631.76	1.93	629.83	14.58
	3/14/08	631.76	2.03	629.73	14.58
	11/20/09	631.76	2.16	629.60	14.17
	6/15/10	631.76	2.01	629.75	14.30
	11/23/10	631.56	2.14	629.42	14.74
	5/24/11	631.56	2.69	628.87	14.83
	11/9/11	631.56	2.06	629.50	14.57
	5/2/12	631.56	2.30	629.26	14.61
	11/7/2012	631.56	2.41	629.15	14.61
MW-3	10/9/95	633.13	dry	dry	14.65
	10/16/95	633.13	dry	dry	14.65
	10/31/95	633.13	dry	dry	14.65
	11/10/95	633.13	dry	dry	14.65
	8/26/97	633.13	6.99	626.14	14.52
	5/21/04	633.13	6.72	626.41	14.52
	4/27/07	633.14	6.13	627.01	14.75
	9/11/07	633.14	6.82	626.32	14.75
	3/5/08	633.14	6.84	626.30	14.75
	3/14/08	633.14	7.13	626.01	14.75
	11/19/09		Well destroyed		
	6/15/10		Well destroyed		
	11/22/10		Well destroyed		
	5/23/11		Well destroyed		
	11/7/11		Well destroyed		
	5/2/12		Well destroyed		
	11/7/12		Well destroyed		

TABLE 1
GROUNDWATER ELEVATION DATA AND FIELD PARAMETERS

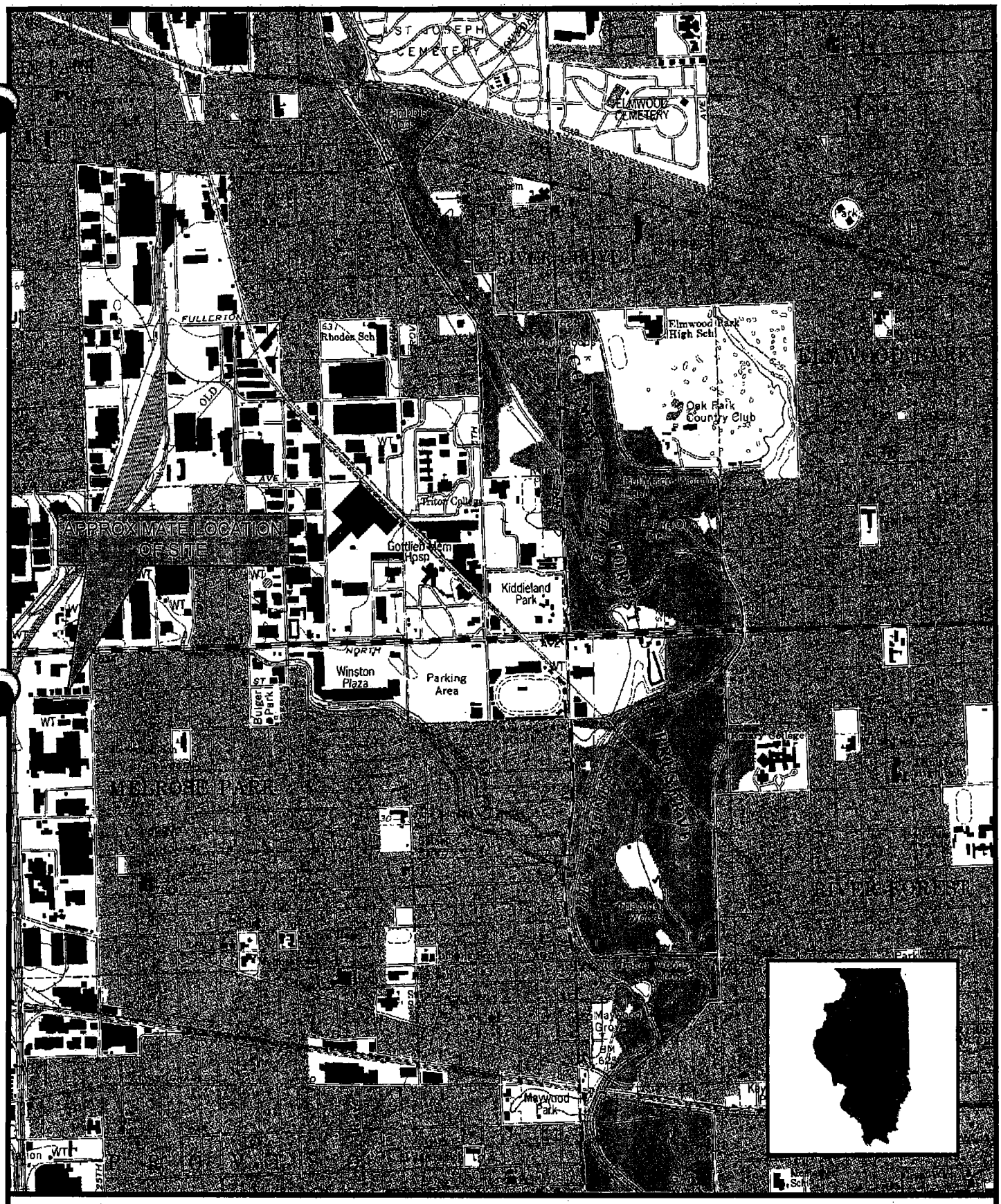
Monitoring Well	Date Measured	TOC Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Well Depth (ft)
MW-4	10/9/95	632.50	dry	dry	14.55
	10/16/95	632.50	dry	dry	14.55
	10/31/95	632.50	13.29	619.21	14.55
	11/17/95	632.50	11.29	621.21	14.55
	8/26/97	632.50	NM	NM	NM
	5/24/04	632.50	4.35	628.15	14.36
	4/27/07	632.50	3.42	629.08	14.80
	9/11/07	632.50	5.01	627.49	14.80
	3/5/08	632.50	4.73	627.77	14.80
	3/14/08	632.50	4.78	627.72	14.80
	11/19/09		Well destroyed		
	6/15/10		Well destroyed		
	11/22/10		Well destroyed		
	5/23/11		Well destroyed		
	11/7/11		Well destroyed		
	5/2/12		Well destroyed		
	11/7/12		Well destroyed		
MW-5	10/9/95	630.62	7.09	623.53	14.61
	10/16/95	630.62	4.83	625.79	14.61
	10/31/95	630.62	4.00	626.62	14.61
	11/10/95	630.62	3.74	626.88	14.61
	8/26/97	630.62	3.44	627.18	14.74
	5/21/04	630.62	2.71	627.91	14.75
	4/27/07	630.56	2.80	627.76	15.05
	9/11/07	630.56	4.63	625.93	15.05
	3/5/08	630.56	2.81	627.75	15.05
	3/14/08	630.56	2.86	627.70	15.05
	11/19/09	630.56	3.57	626.99	15.00
	6/15/10	630.56	3.01	627.55	14.70
	11/23/10	630.51	4.03	626.48	14.94
	5/23/11	630.51	2.88	627.63	15.04
	11/9/11	630.51	3.70	626.81	14.75
	5/1/12	630.51	3.08	627.43	12.80
	11/7/2012	632.39	3.67	628.72	14.68
MW-6	10/9/95	634.48	4.23	630.25	14.65
	10/16/95	634.48	4.31	630.17	14.65
	10/31/95	634.48	3.21	631.27	14.65
	11/17/05	634.48	2.43	632.05	14.65
	8/26/97	634.48	5.04	629.44	9.25
	5/21/04	634.48	5.64	628.84	9.28
	4/27/07	634.48	NM	NM	NM
	9/12/07	634.66	4.79	629.87	9.28
	3/5/08	634.66	frozen	frozen	NM
	3/14/08	634.66	4.75	629.91	9.28
	11/19/09	634.66	4.94	629.72	9.50
	6/15/10		Abandoned		
	11/22/10		Abandoned		
	5/23/11		Abandoned		
	11/7/11		Abandoned		
	5/2/12		Abandoned		
	11/7/12		Abandoned		

TABLE 1
GROUNDWATER ELEVATION DATA AND FIELD PARAMETERS

Monitoring Well	Date Measured	TOC Elevation (ft)	Depth to Groundwater Water (ft)	Groundwater Elevation (ft)	Well Depth (ft)
MW-7	4/27/07	632.05	5.45	626.60	12.88
	9/11/07	632.05	5.85	626.20	12.88
	3/5/08	632.05	5.92	626.13	12.88
	3/14/08	632.05	5.99	626.06	12.88
	11/19/09		Well destroyed		
	6/15/10		Well destroyed		
	11/22/10		Well destroyed		
	5/23/11		Well destroyed		
	11/7/11		Well destroyed		
	5/2/12		Well destroyed		
	11/7/12		Well destroyed		
MW-8	4/27/07	631.94	9.42	622.52	14.67
	9/11/07	631.94	8.25	623.69	14.67
	3/5/08	631.94	9.77	622.17	14.67
	3/14/08	631.94	9.65	622.29	14.67
	11/19/09	631.94	9.11	622.83	14.96
	6/15/10	631.94	8.97	622.97	14.70
	11/22/10	631.84	9.60	622.24	14.94
	5/23/11	631.84	9.12	622.72	14.99
	11/7/11	631.84	8.85	622.99	14.73
	5/1/12	631.84	9.13	622.71	14.76
	11/7/2012	631.73	8.54	623.19	14.65
MW-9	4/27/07	633.38	4.51	628.87	15.00
	9/11/07	633.38	5.72	627.66	15.00
	3/5/08	633.38	4.81	628.57	15.00
	3/14/08	633.38	NM	NM	NM
	11/19/09	633.38	5.12	628.26	14.99
	6/15/10	633.38	4.14	629.24	14.74
	11/22/10	633.23	6.18	627.05	14.94
	5/23/11	633.23	4.71	628.52	15.03
	11/7/11	633.23	5.54	627.69	14.75
	5/1/12	633.23	4.89	628.34	14.80
	11/7/2012	633.45	6.5	626.95	15.02
MW-10	4/27/07	636.44	6.15	630.29	14.66
	9/11/07	636.44	7.25	629.19	14.66
	3/5/08	636.44	6.30	630.14	14.66
	3/14/08	636.44	6.61	629.83	14.66
	11/19/09	636.44	7.09	629.35	14.95
	6/15/10		Access denied		
	11/23/10		Access denied		
	6/7/11	636.44	6.71	629.73	14.94
	11/7/11	636.44	7.08	629.36	14.71
	5/1/12	636.44	6.98	629.46	14.77
	11/7/2012	636.36	7.08	629.28	14.69
MW-11	6/23/10	632.42	6.26	626.16	14.74
	11/23/10	632.42	6.79	625.63	14.93
	5/24/11	632.42	6.57	625.85	15.02
	11/9/11	632.42	6.48	625.94	14.71
	5/1/12	632.42	6.62	625.80	14.78
	11/7/2012	632.07	6.73	625.34	14.43

TABLE 1
GROUNDWATER ELEVATION DATA AND FIELD PARAMETERS

Monitoring Well	Date Measured	TOC Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Well Depth (ft)
MW-12	6/23/10	633.74	6.40	627.34	14.80
	11/22/10	633.74	6.75	626.99	15.02
	5/23/11	633.74	6.21	627.53	14.61
	11/9/11	633.74	5.75	627.99	14.40
	5/1/12	634.19	4.81	629.38	14.28
	11/7/2012	633.54	5.28	628.26	14.08
MW-13	6/23/10	632.63	7.85	624.78	20.02
	11/22/10	632.63	7.84	624.79	20.23
	5/24/11	632.63	4.15	628.48	20.04
	11/7/11	632.63	4.44	628.19	19.75
	5/2/12	632.63	4.70	627.93	19.81
	11/7/2012	632.48	6.5	625.98	19.66
MW-14	6/23/10	634.33	7.87	626.46	19.85
	10/31/05	631.67	6.02	625.65	14.72
	11/10/95	631.67	5.27	626.40	14.72
	8/26/97	631.67	4.02	627.65	14.59
	5/21/04	631.67	3.90	627.77	14.60
	4/27/07	631.62	3.51	628.11	14.82
	9/11/07	631.62	5.02	626.60	14.82
	3/5/08	631.62	3.71	627.91	14.82
	3/14/08	631.62	3.75	627.87	14.82
	11/20/09	631.62	4.06	627.56	14.80
	6/15/10	631.62	3.86	627.76	14.50
	11/23/10	631.62	5.62	626.00	14.77
	5/24/11	631.52	3.91	627.61	14.87
	11/9/11	631.52	4.94	626.58	14.50
	5/2/12	631.52	3.74	627.78	14.62
	11/7/2012	631.68	4.62	627.06	14.78
MW-2	10/9/95	631.76	dry	dry	14.72
	10/16/95	631.76	14.65	617.11	14.72
	10/31/95	631.76	12.48	619.28	14.72
	11/10/95	631.76	11.39	620.37	14.72



0 500 1,000 2,000 3,000 4,000
Feet

Huff & Huff incorporated

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FIGURE 1
SITE LOCATION MAP
DETREX CORPORATION
MELROSE PARK, ILLINOIS

SOURCE: U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
RIVER FOREST QUADRANGLE

CADFILE: DETREX_TOPO

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	*Water*	*Maximum*	*Maximum detect*	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02
Date sampled	*Objective*[a/]	*Soluabiliy*	*detect*	*exceeds standards*	11/1/1995	5/24/2004	4/27/2007	11/20/2009	6/15/2010	11/23/2010	5/24/2011	11/9/2011	5/2/2012	11/8/2012	11/1/1995	5/24/2004
Constituent	*mg/L*	*mg/L*	*mg/L*	*yes or no*	*mg/L*										*mg/L*	
Benzene	*0.025*	*1750.000*	*0.039*	**Yes**	NA	<0.100	<0.005	<0.050	<0.100	<0.100	<0.005	<0.050	<0.025	<0.005	NA	<0.500
Carbon tetrachloride	*0.025*	*793.000*	*ND*	No	<0.100	<0.100	<0.005	NA	NA	NA	NA	NA	NA	NA	<10.000	<0.500
Chloroethane	*0.005*	*NA*	*0.132*	**Yes**	NA	<0.100	<0.010	<0.050	<0.100	<0.100	**0.010**	<0.100	<0.050	<0.010	NA	<0.500
Chloroform	*0.001*	*7920.000*	*0.050*	**Yes**	NA	<0.100	<0.001	<0.050	<0.100	<0.100	<0.010	<0.100	<0.050	<0.001	NA	<0.500
1,1-Dichloroethane	*3.500*	*5060.000*	*4.380*	**Yes**	<0.100	<1.000	0.120	0.096	0.120	0.080	0.110	0.096	0.100	0.087	<10.000	1.900
1,1-Dichloroethene	*0.035*	*2250.000*	*8.500*	**Yes**	<0.100	<0.100	0.023	<0.050	<0.100	<0.100	0.020	<0.100	**0.043**	0.020	<10.000	<0.500
cis-1,2-Dichloroethene	*0.200*	*3500.000*	*160.000*	**Yes**	**0.480**	**5.400**	**9.580**	**7.100**	**12.000**	**9.200**	**9.000**	**7.300**	**15.000**	**6.930**	<10.000	**25.000**
trans-1,2-Dichloroethene	*0.500*	*6300.000*	*0.369*	No	<0.100	<0.100	0.177	NA	NA	NA	NA	NA	NA	NA	<10.000	<0.500
Methylene chloride	*0.050*	*13000.000*	*0.045*	No	<0.100	<0.500	<0.005	NA	NA	NA	NA	NA	NA	NA	<10.000	<2.500
Tetrachloroethene	*0.025*	*200.000*	*8.300*	**Yes**	<0.100	<0.100	**0.072**	**0.100**	**0.100**	**0.073**	**0.087**	**0.068**	**0.066**	**0.068**	<10.000	<0.500
Toluene	*2.500*	*526.000*	*0.030*	No	NA	<0.100	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	<0.500
1,1,1-Trichloroethane	*1.000*	*1330.000*	*2.000*	**Yes**	<0.100	<0.100	<0.005	<0.050	<0.100	<0.100	0.016	<0.100	0.045	0.010	<10.000	**1.300**
1,1,2-Trichloroethane	*0.050*	*4420.000*	*0.028*	No	NA	<0.100	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	<0.500
Trichloroethene	*0.025*	*1100.000*	*640.000*	**Yes**	**1.600**	**16.000**	**31.500**	**35.000**	**42.000**	**30.000**	**33.000**	**30.000**	**27.000**	**22.300**	**59.000**	**170.000**
Vinyl chloride	*0.010*	*2706.000*	*1.480*	**Yes**	NA	<0.100	0.003	<0.050	<0.100	**0.040**	0.007	<0.050	<0.025	**0.020**	NA	<0.500

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

Table 2
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of Groundwater Results, 4th Quarter 2012

	Statistical Summary						TACO Standards			Data													
Monitoring Well ID Date sampled	*Detection Frequency*	*Maximum non-detect*	*Minimum Detect*	*Arithmatic Average*	*Maximum detect*	*Maximum detect location*	*Class II GW Objective [a]*	*Water soluability*	*Maximum detect exceeds standards (yes/no)*	MW-01 11/8/2012	MW-02 11/8/2012	MW-02 Dup 11/8/2012	MW-05 11/8/2012	MW-08 11/7/2012	MW-09 11/7/2012	MW-10 11/7/2012	MW-11 11/8/2012	MW-12 11/7/2012	MW-13 11/7/2012	MW-14 11/8/2012	MW-15 11/7/2012	MW-16 11/7/2012
Constituents	mg/L																						
Benzene	*1/12*	*0.050*	*0.026*	*0.008*	*0.026*	MW-05	*0.025*	*1,750*	*Yes*	<0.005	<0.050	<0.050	**0.026**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	*4/12*	*0.005*	*0.010*	*0.103*	*0.652*	MW-02 Dup	*1.000*	*1,330*	*No*	0.010	0.505	0.652	0.037	<0.005	<0.005	<0.005	0.113	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	*4/12*	*0.005*	*0.026*	*0.500*	*2.950*	MW-02	*3.500*	*5,060*	*No*	0.087	2.950	2.830	0.026	<0.005	<0.005	<0.005	0.584	<0.005	<0.005	<0.005	<0.005	<0.005
1,1-Dichloroethene	*6/12*	*0.005*	*0.007*	*0.077*	*0.416*	MW-02 Dup	*0.035*	*2,250*	*Yes*	0.020	**0.341**	**0.416**	**0.064**	<0.005	0.007	**0.055**	**0.078**	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroethane	*1/12*	*0.010*	*0.050*	*0.013*	*0.057*	MW-02 Dup	*0.0046*	*NA*	*Yes*	<0.010	0.050	0.057	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chloroform	*5/12*	*0.001*	*0.001*	*0.004*	*0.017*	MW-02 Dup	*0.001*	*7,920*	*Yes*	<0.001	**0.015**	**0.017**	**0.007**	<0.001	0.001	0.001	**0.005**	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	*4/12*	*0.005*	*0.007*	*0.036*	*0.183*	MW-02 Dup	*0.025*	*200*	*Yes*	**0.068**	**0.171**	**0.183**	0.021	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethene	*8/12*	*0.005*	*0.009*	*63.925*	*270.000*	MW-05	*0.025*	*1,100*	*Yes*	**22.300**	**229.000**	**251.000**	**270.000**	0.009	**40.500**	**16.700**	**1.400**	<0.005	<0.005	**0.108**	<0.005	<0.005
Cis-1,2-Dichloroethene	*7/12*	*0.005*	*0.178*	*9.545*	*34.900*	MW-02	*0.200*	*3,500*	*Yes*	**6.930**	**34.900**	**31.600**	**20.300**	<0.005	**3.920**	**19.100**	**7.150**	<0.005	<0.005	0.178	<0.005	<0.005
Vinyl chloride	*6/12*	*0.002*	*0.005*	*0.145*	*1.480*	MW-10	*0.010*	*2,760*	*Yes*	**0.020**	**0.042**	**0.046**	**0.281**	<0.002	0.005	**1.480**	<0.002	<0.002	<0.002	0.009	<0.002	<0.002

Bold indicates result above the Remedial Objective

[a] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

All results in mg/L, unless otherwise indicated.

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-03	MW-03	MW-04	MW-04	MW-04	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05	MW-05
Date sampled	*Objective*[a/]	5/24/2004	4/27/2007	11/1/1995	5/24/2004	4/27/2007	11/1/1995	5/24/2004	5/24/2004	4/27/2007	4/27/2007	11/19/2009	6/15/2010	11/23/2010	5/23/2011	11/9/2011	5/1/2012
Constituent	*mg/L*	*mg/L*		*mg/L*			*mg/L*										
Benzene	*0.025*	<0.001	<0.005	NA	<0.001	<0.005	NA	<1.000	<2.000	**0.039**	0.016	<0.500	<1.000	<1.000	<0.500	<0.100	<0.250
Carbon tetrachloride	*0.025*	<0.001	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Chloroethane	*0.005*	<0.001	<0.010	NA	<0.001	<0.010	NA	<1.000	<2.000	**0.132**	<0.01	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
Chloroform	*0.001*	<0.001	<0.001	NA	<0.001	<0.001	NA	<1.000	<2.000	**0.010**	**0.010**	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
1,1-Dichloroethane	*3.500*	<0.001	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	**4.380**	0.021	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
1,1-Dichloroethene	*0.035*	<0.001	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	**0.062**	**0.061**	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
cis-1,2-Dichloroethene	*0.200*	0.014	0.006	<0.005	<0.001	<0.005	<10.000	**15.000**	**17.000**	**18.600**	**23.400**	**24.000**	**21.000**	**23.000**	**21.000**	**13.000**	**11.000**
trans-1,2-Dichloroethene	*0.500*	0.002	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	0.061	0.172	NA	NA	NA	NA	NA	NA
Methylene chloride	*0.050*	<0.005	<0.005	<0.005	<0.005	<0.005	<10.000	<5.000	<1.000	<0.005	<0.005	NA	NA	NA	NA	NA	NA
Tetrachloroethene	*0.025*	<0.001	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	0.021	0.018	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
Toluene	*2.500*	<0.001	<0.005	NA	<0.001	<0.005	NA	<1.000	<2.000	0.007	<0.005	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	0.002	<0.005	<0.005	<0.001	<0.005	<10.000	<1.000	<2.000	0.069	0.062	<0.500	<1.000	<1.000	<1.000	<0.200	<0.500
1,1,2-Trichloroethane	*0.050*	<0.001	<0.005	NA	<0.001	<0.005	NA	<1.000	<2.000	0.021	0.012	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	**0.099**	**0.100**	<0.005	<0.001	<0.005	**110.000**	**300.000**	**380.000**	**291.000**	**308.000**	**500.000**	**640.000**	**410.000**	**440.000**	**240.000**	**270.000**
Vinyl chloride	*0.010*	0.002	<0.002	NA	<0.001	<0.002	NA	<1.000	<2.000	**0.215**	**0.240**	**0.500**	<1.000	**0.490**	<0.500	**0.180**	<0.250

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-02 [b/]	MW-02	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]	MW-02	MW-02 [b/]
Date sampled	*Objective* [a/]	5/24/2004	4/27/2007	11/20/2009	11/20/2009	6/15/2010	6/15/2010	11/23/2010	11/23/2010	5/24/2011	5/24/2011	11/9/2011	11/9/2011	5/2/2012	5/2/2012	11/8/2012	11/8/2012
Constituent	*mg/L*																
Benzene	*0.025*	<2.000	<0.005	<0.500	<0.200	<0.500	<1.000	<1.000	<1.000	<0.500	<0.500	<0.130	<0.100	<0.250	<0.250	<0.050	<0.050
Carbon tetrachloride	*0.025*	<2.000	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	*0.005*	<2.000	**0.053**	<0.500	<0.200	<0.500	<1.000	<1.000	<1.000	<1.000	<1.000	<0.250	<0.200	<0.500	<0.500	0.050	0.057
Chloroform	*0.001*	<2.000	**0.030**	<0.500	<0.200	<0.500	<1.000	<1.000	<1.000	<1.000	<1.000	<0.250	<0.200	<0.500	<0.500	**0.015**	**0.017**
1,1-Dichloroethane	*3.500*	2.300	1.970	2.300	2.500	2.800	2.500	3.300	3.500	2.600	3.000	**3.700**	**3.900**	1.900	2.100	2.950	2.830
1,1-Dichloroethene	*0.035*	<2.000	**0.371**	**0.440**	**0.460**	**0.600**	<1.000	**0.610**	**0.670**	<1.000	**0.660**	**0.560**	**0.600**	**0.390**	**0.450**	**0.341**	**0.416**
cis-1,2-Dichloroethene	*0.200*	**28.000**	**45.100**	**40.000**	**48.000**	**40.000**	**38.000**	**43.000**	**47.000**	**34.000**	**40.000**	**43.000**	**44.000**	**35.000**	**34.000**	**34.900**	**31.600**
trans-1,2-Dichloroethene	*0.500*	<2.000	0.369	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	*0.050*	<10.000	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	*0.025*	<2.000	**0.130**	<0.500	**0.170**	<0.500	<1.000	<1.000	<1.000	< 1.0 U	**8.300**	**0.160**	**0.170**	<0.500	<0.500	**0.171**	**0.183**
Toluene	*2.500*	<2.000	0.030	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	**1.300**	<0.005	**1.600**	**1.700**	**2.000**	<1.000	**1.300**	**1.400**	<1.000	<1.000	**1.100**	**1.400**	**1.700**	**1.600**	0.505	0.652
1,1,2-Trichloroethane	*0.050*	<2.000	0.028	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	**210.000**	**230.000**	**420.000**	**360.000**	**360.000**	**520.000**	**340.000**	**380.000**	**400.000**	**350.000**	**310.000**	**330.000**	**250.000**	**280.000**	**229.000**	**251.000**
Vinyl chloride	*0.010*	<2.000	**0.051**	<0.500	<0.200	<0.500	<1.000	<1.000	<1.000	<0.500	<0.500	**0.062**	**0.075**	<0.250	<0.250	**0.042**	**0.046**

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-09	MW-09	MW-09	MW-09	MW-09	MW-09
Date sampled	*Objective* [a/]	6/15/2010	11/22/2010	5/23/2011	11/7/2011	5/1/2012	11/7/2012
Constituent	*mg/L*	*mg/L*					
Benzene	*0.025*	<0.200	<0.100	<0.100	<0.050	<0.025	<0.005
Carbon tetrachloride	*0.025*	NA	NA	NA	NA	NA	NA
Chloroethane	*0.005*	<0.200	<0.100	<0.200	<0.100	0.050	<0.010
Chloroform	*0.001*	<0.200	<0.100	<0.200	<0.100	0.050	0.001
1,1-Dichloroethane	*3.500*	<0.200	<0.100	<0.200	<0.100	0.050	<0.005
1,1-Dichloroethene	*0.035*	<0.200	<0.100	<0.200	<0.100	0.050	0.007
cis-1,2-Dichloroethene	*0.200*	**5.000**	**6.200**	**3.200**	**4.700**	**4.600**	**3.920**
trans-1,2-Dichloroethene	*0.500*	NA	NA	NA	NA	NA	NA
Methylene chloride	*0.050*	NA	NA	NA	NA	NA	NA
Tetrachloroethene	*0.025*	<0.200	<0.100	0.200	<0.100	0.050	<0.005
Toluene	*2.500*	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	<0.200	<0.100	0.200	<0.100	0.050	<0.005
1,1,2-Trichloroethane	*0.050*	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	**54.000**	**58.000**	**43.000**	**60.000**	**64.000**	**40.500**
Vinyl chloride	*0.010*	<0.200	<0.100	<0.100	<0.050	<0.025	0.005

MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
4/27/2007	11/19/2009	6/7/2011	11/9/2011	5/1/2012	11/7/2012
mg/L					
<0.005	<0.050	<0.025	0.025	<0.010	<0.005
<0.005	NA	NA	NA	NA	NA
<0.010	<0.050	<0.050	<0.050	<0.020	<0.010
0.003	<0.050	<0.050	<0.050	<0.020	0.001
<0.005	<0.050	<0.050	<0.050	<0.020	<0.005
0.047	**0.057**	**0.045**	<0.050	<0.020	**0.055**
27.600	**30.000**	**21.000**	**12.000**	**19.000**	**19.100**
0.270	NA	NA	NA	NA	NA
<0.005	NA	NA	NA	NA	NA
0.006	<0.050	<0.050	<0.050	<0.020	0.007
<0.005	NA	NA	NA	NA	NA
<0.005	<0.050	<0.050	<0.050	<0.020	<0.005
0.027	NA	NA	NA	NA	NA
34.500	**34.000**	**21.000**	**15.000**	**21.000**	**16.700**
0.681	**0.810**	**0.560**	**0.095**	**0.530**	**1.480**

MW-11	MW-11	MW-11
6/23/2010	11/23/2010	5/23/2011
mg/L		
<0.100	<0.010	<0.010
NA	NA	NA
<0.100	<0.010	<0.020
<0.100	**0.008**	<0.020
1.000	0.650	0.470
0.180	**0.140**	**0.073**
17.000	**9.600**	**6.500**
NA	NA	NA
NA	NA	NA
<0.100	<0.010	<0.020
NA	NA	NA
0.220	0.210	0.120
NA	NA	NA
1.700	**2.600**	**1.700**
<0.100	<0.010	<0.010

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-05	MW-06	MW-06	MW-06	MW-07	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-08	MW-09	MW-09
Date sampled	*Objective* [a/]	11/8/2012	11/1/1995	5/24/2004	11/19/2009	4/27/2007	4/27/2007	11/20/2009	6/15/2010	11/22/2010	5/23/2011	11/7/2011	5/1/2012	11/7/2012	4/27/2007	11/19/2009
Constituent	*mg/L*	*---mg/L---*	*mg/L*			*---mg/L---*	*mg/L*								*mg/L*	
Benzene	*0.025*	**0.026**	NA	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100
Carbon tetrachloride	*0.025*	NA	<0.005	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	<0.005	NA
Chloroethane	*0.005*	<0.010	NA	<0.001	<0.001	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.010	<0.100
Chloroform	*0.001*	**0.007**	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.100
1,1-Dichloroethane	*3.500*	0.026	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100
1,1-Dichloroethene	*0.035*	**0.064**	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100
cis-1,2-Dichloroethene	*0.200*	**20.300**	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	**3.500**	**6.600**
trans-1,2-Dichloroethene	*0.500*	NA	<0.005	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	0.044	NA
Methylene chloride	*0.050*	NA	<0.005	<0.005	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	<0.005	NA
Tetrachloroethene	*0.025*	0.021	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100
Toluene	*2.500*	NA	NA	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	<0.005	NA
1,1,1-Trichloroethane	*1.000*	0.037	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100
1,1,2-Trichloroethane	*0.050*	NA	NA	<0.001	NA	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	<0.005	NA
Trichloroethene	*0.025*	**270.000**	<0.005	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	0.000	<0.001	0.009	**32.100**	**64.000**
Vinyl chloride	*0.010*	**0.281**	NA	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	0.003	<0.100

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-13	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-16	MW-16
Date sampled	*Objective* [a/]	11/7/2012	6/23/2010	11/22/2010	5/24/2011	11/7/2011	5/2/2012	11/8/2012	6/23/2010	11/22/2010	5/24/2011	11/7/2011	5/2/2012	11/7/2012	6/23/2010	11/23/2010
Constituent	*mg/L*	---*mg/L*---	*mg/L*						*mg/L*						*mg/L*	
Benzene	*0.025*	<0.005	<0.010	<0.001	<0.001	<0.001	<0.0025	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
Carbon tetrachloride	*0.025*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	*0.005*	<0.010	<0.010	<0.001	<0.001	<0.001	<0.005	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.001	<0.001
Chloroform	*0.001*	<0.001	<0.010	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	*3.500*	<0.005	<0.010	0.000	<0.001	0.001	0.004	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
1,1-Dichloroethene	*0.035*	<0.005	<0.010	<0.001	<0.001	<0.001	0.004	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
cis-1,2-Dichloroethene	*0.200*	<0.005	**0.350**	0.027	0.023	0.063	**0.260**	0.178	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
trans-1,2-Dichloroethene	*0.500*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	*0.050*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	*0.025*	<0.005	<0.010	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
Toluene	*2.500*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	<0.005	<0.010	<0.001	<0.001	<0.001	0.011	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001
1,1,2-Trichloroethane	*0.050*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	<0.005	**2.200**	0.019	0.008	**0.130**	**2.500**	**0.108**	<0.001	<0.001	<0.001	0.001	<0.001	<0.005	<0.001	0.001
Vinyl chloride	*0.010*	<0.002	**0.038**	0.004	0.002	0.003	0.005	0.009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-11	MW-11	MW-11	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
Date sampled	*Objective* [a/]	11/9/2011	5/1/2012	11/8/2012	6/23/2010	11/22/2010	5/23/2011	11/9/2011	5/1/2012	11/7/2012	6/23/2010	11/22/2010	6/23/2010	5/24/2011	11/7/2011	5/2/2012
Constituent	*mg/L*	*mg/L*			*mg/L*						*mg/L*					
Benzene	*0.025*	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	*0.025*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	*0.005*	<0.010	<0.010	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	*0.001*	<0.010	<0.010	**0.005**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	*3.500*	0.370	0.370	0.584	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	*0.035*	**0.052**	**0.056**	**0.078**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,2-Dichloroethene	*0.200*	**5.900**	**6.500**	**7.150**	0.002	0.000	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,2-Dichloroethene	*0.500*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	*0.050*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	*0.025*	<0.010	<0.010	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	*2.500*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	0.087	0.110	0.113	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	*0.050*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	**1.200**	**1.500**	**1.400**	<0.001	<0.001	<0.001	0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	*0.010*	<0.005	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Bold indicates result above the Remedial Objective

[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected

TABLE 3
Detrex - 2537 Le Moyne Ave, Melrose Park, IL
Summary of All Groundwater Results

Monitoring Well	*Class II GW*	MW-16	MW-16	MW-16	MW-16	A-HA-04	BH37	BH38	BH38	BH39	BH40	BH42	BH42	BH44
Date sampled	*Objective* [a/]	5/24/2011	11/7/2011	5/2/2012	11/7/2012	7/13/2007	3/1/1997	3/1/1997	3/1/1997	3/1/1997	3/1/1997	3/1/1997	3/1/1997	3/1/1997
Constituent	*mg/L*	*mg/L*				*mg/L*								
Benzene	*0.025*	<0.001	<0.001	<0.001	<0.005	**0.030**	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	*0.025*	NA	NA	NA	NA	<0.005	<0.100	<0.005	<0.010	<5.000	<0.005	<0.005	<10.000	<0.005
Chloroethane	*0.005*	<0.001	<0.001	<0.001	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	*0.001*	<0.001	<0.001	<0.001	<0.001	**0.004**	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	*3.500*	<0.001	<0.001	<0.001	<0.005	<0.005	<0.100	<0.005	<0.010	<5.000	<0.005	0.180	<10.000	<0.005
1,1-Dichloroethene	*0.035*	<0.001	<0.001	<0.001	<0.005	0.009	<0.100	<0.005	0.013	**8.500**	<0.005	0.033	<10.000	<0.005
cis-1,2-Dichloroethene	*0.200*	<0.001	<0.001	<0.001	<0.005	**4.720**	0.200	<0.005	<0.005	**160.000**	<0.005	**1.800**	<10.000	<0.005
trans-1,2-Dichloroethene	*0.500*	NA	NA	NA	NA	0.048	<0.100	<0.005	<0.010	<5.000	<0.005	0.024	<10.000	<0.005
Methylene chloride	*0.050*	NA	NA	NA	NA	<0.005	<0.100	<0.005	<0.010	<5.000	<0.005	0.045	<10.000	<0.005
Tetrachloroethene	*0.025*	<0.001	<0.001	<0.001	<0.005	0.006	<0.100	<0.005	<0.010	<5.000	<0.005	**1.200**	<10.000	<0.005
Toluene	*2.500*	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	*1.000*	<0.001	<0.001	<0.001	<0.005	0.020	<0.100	<0.005	<0.010	<5.000	<0.005	1.000	<10.000	<0.005
1,1,2-Trichloroethane	*0.050*	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	*0.025*	<0.001	<0.001	<0.001	<0.005	**54.900**	**1.700**	0.007	0.016	**8.600**	**0.027**	**14.000**	**190.000**	<0.005
Vinyl chloride	*0.010*	<0.001	<0.001	<0.001	<0.002	**0.057**	NA	NA	NA	NA	NA	NA	NA	NA

Bold indicates result above the Remedial Objective

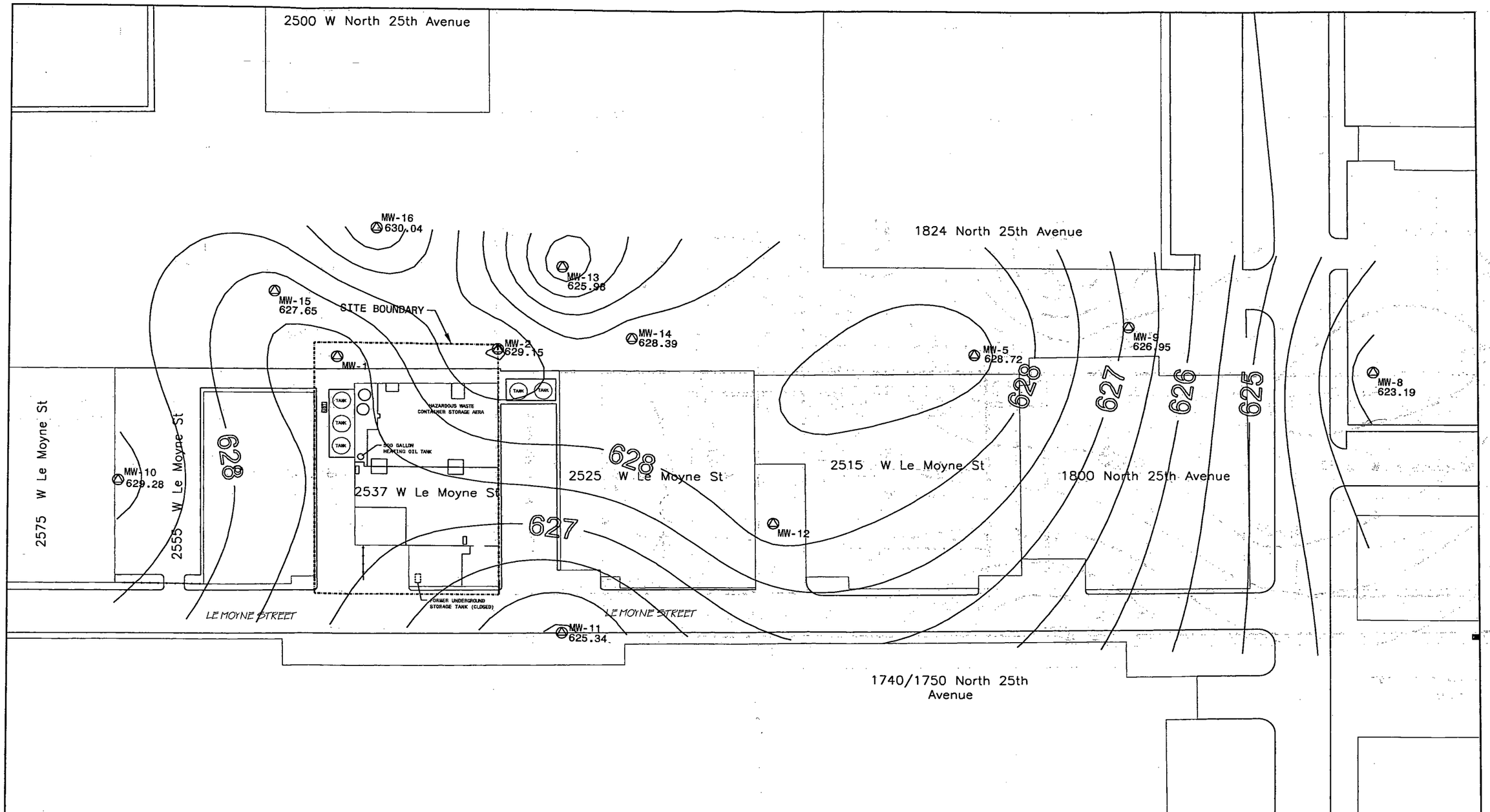
[a/] Refers to Groundwater Remedial Objectives for the Groundwater Component of the Groundwater Ingestion Route, Part 742 - TACO, Appendix B, Table E.

[b/] Refers to duplicate sample collected at MW-02.

NA - Not Available (sample not analyzed for constituent)

All results in mg/L, unless otherwise indicated.

ND - not detected



Huff & Huff, incorporated

FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CADFILE: DETREX_GW_CONTOUR_20121107

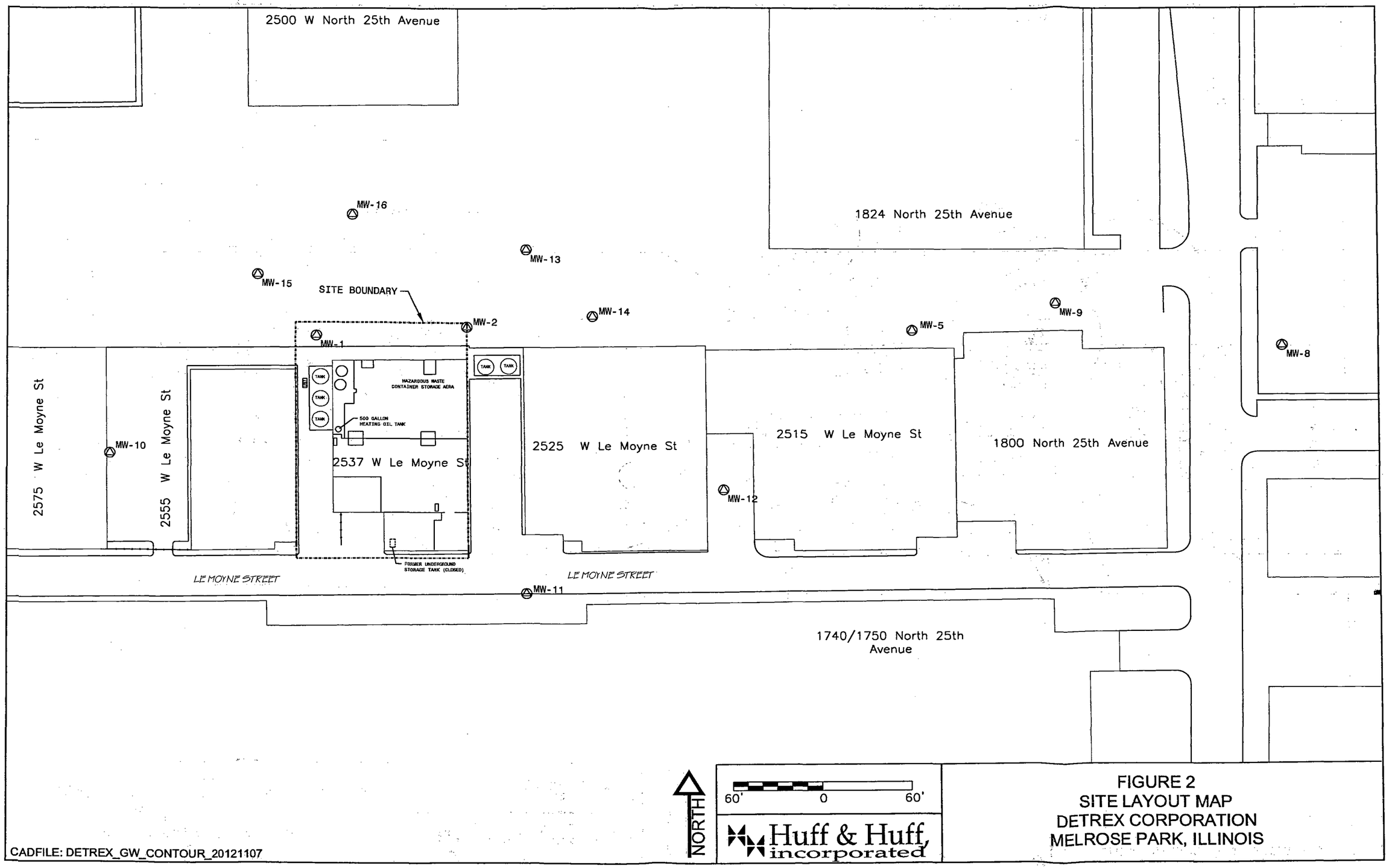


FIGURE 2
SITE LAYOUT MAP
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CADFILE: DETREX_GW_CONTOUR_20121107

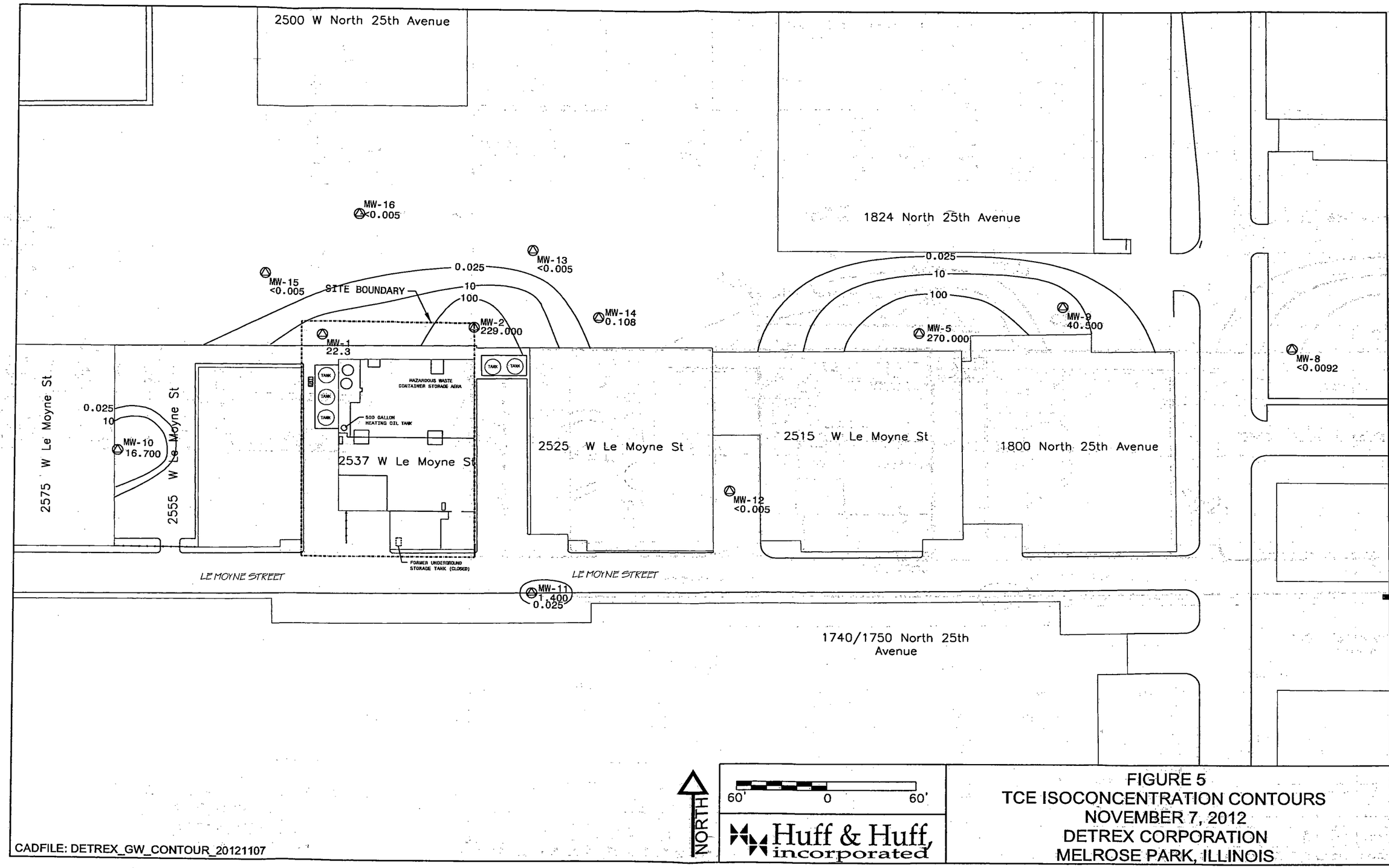
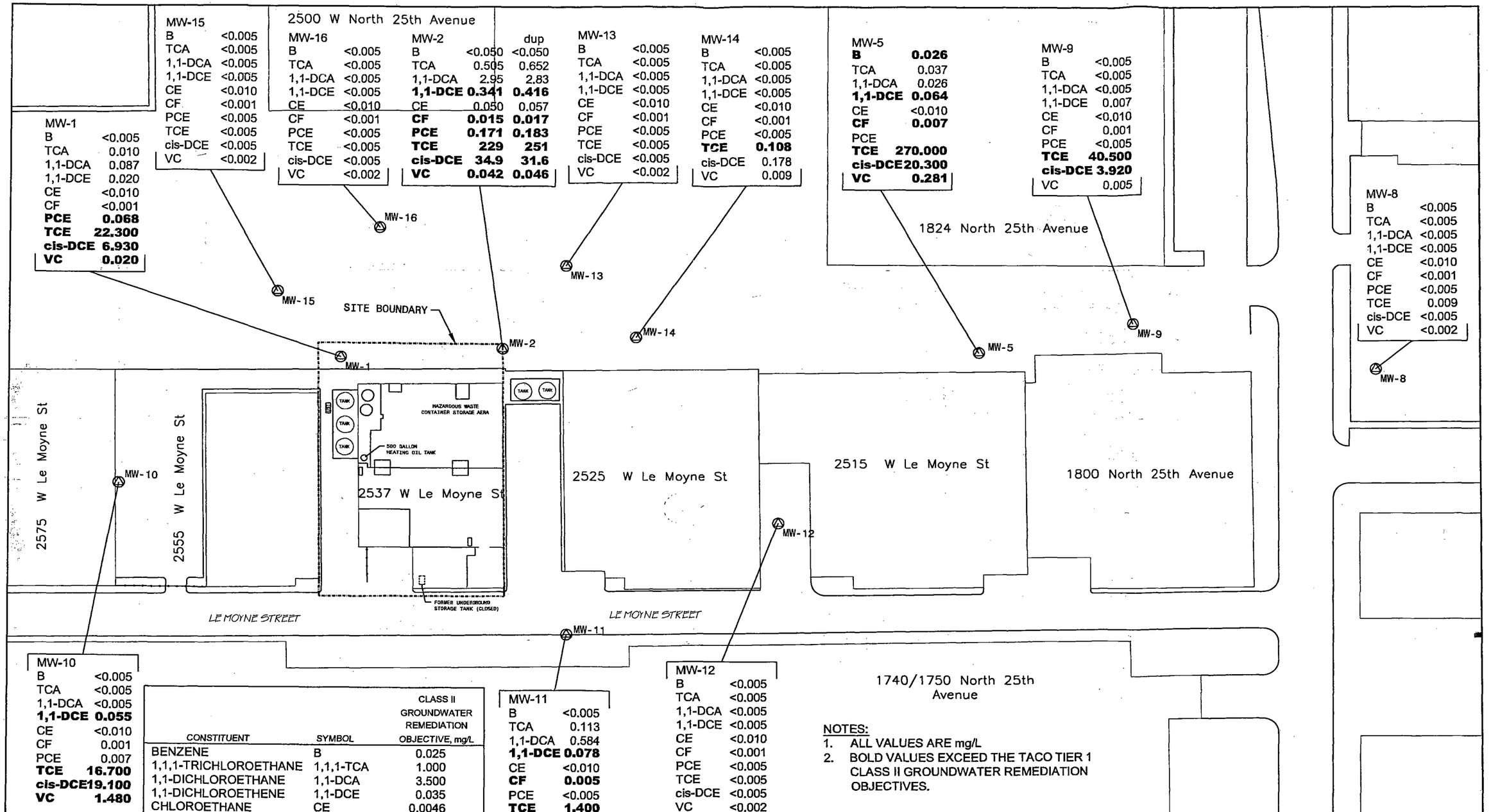


FIGURE 5
TCE ISOCONCENTRATION CONTOURS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS



CONSTITUENT	SYMBOL	CLASS II GROUNDWATER REMEDIATION OBJECTIVE, mg/L
BENZENE	B	0.025
1,1,1-TRICHLOROETHANE	1,1,1-TCA	1.000
1,1-DICHLOROETHANE	1,1-DCA	3.500
1,1-DICHLOROETHENE	1,1-DCE	0.035
CHLOROETHANE	CE	0.0046
CHOLOROFORM	CF	0.001
TETRACHLOROETHENE	PCE	0.025
TRICHLOROETHENE	TCE	0.025
cis-1,2-DICHLOROETHENE	cis-DCE	0.200
VINYL CHLORIDE	VC	0.010

FIGURE 4
GROUNDWATER ANALYTICAL RESULTS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS

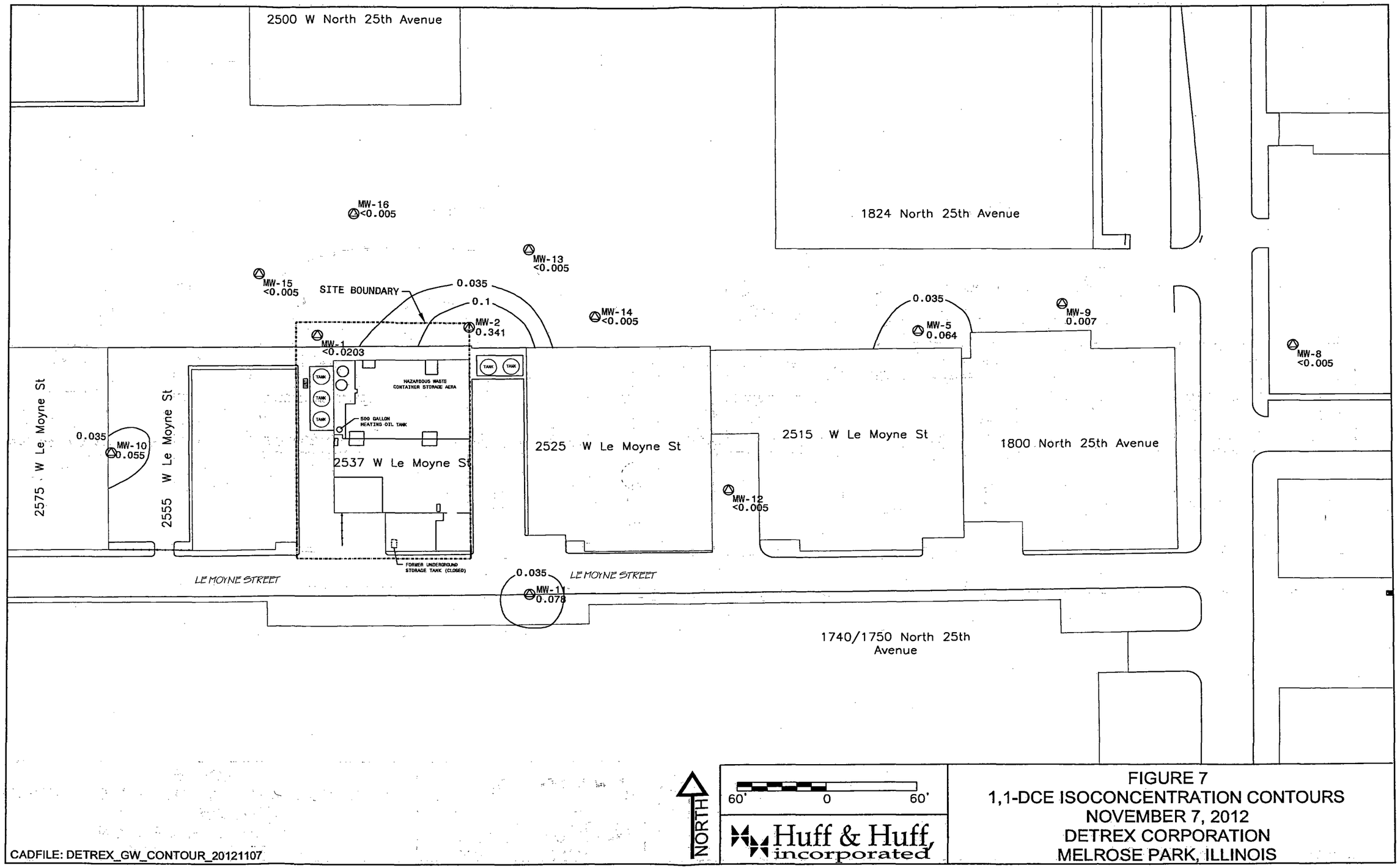


FIGURE 7
1,1-DCE ISOCONCENTRATION CONTOURS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CADFILE: DETREX_GW_CONTOUR_20121107

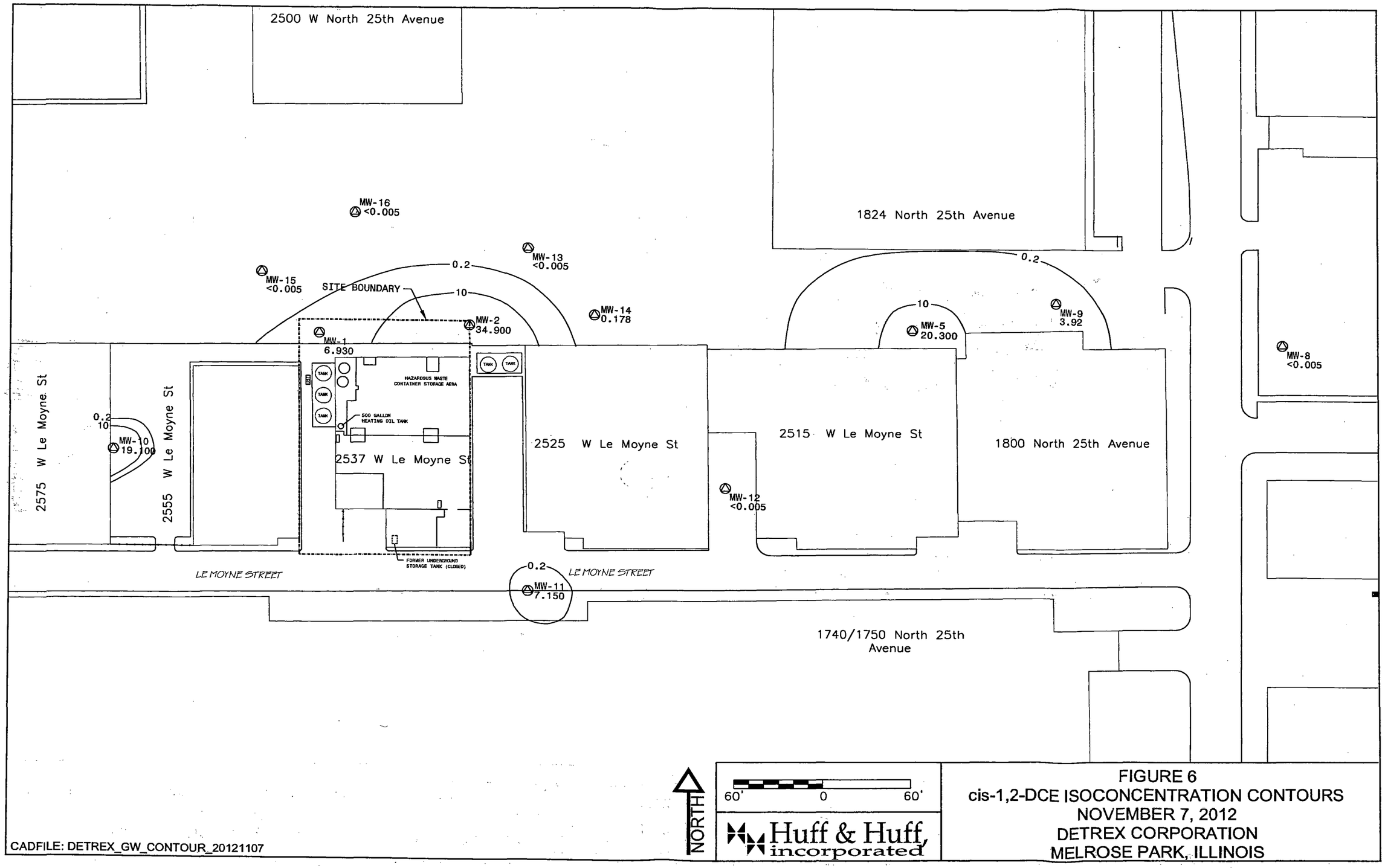
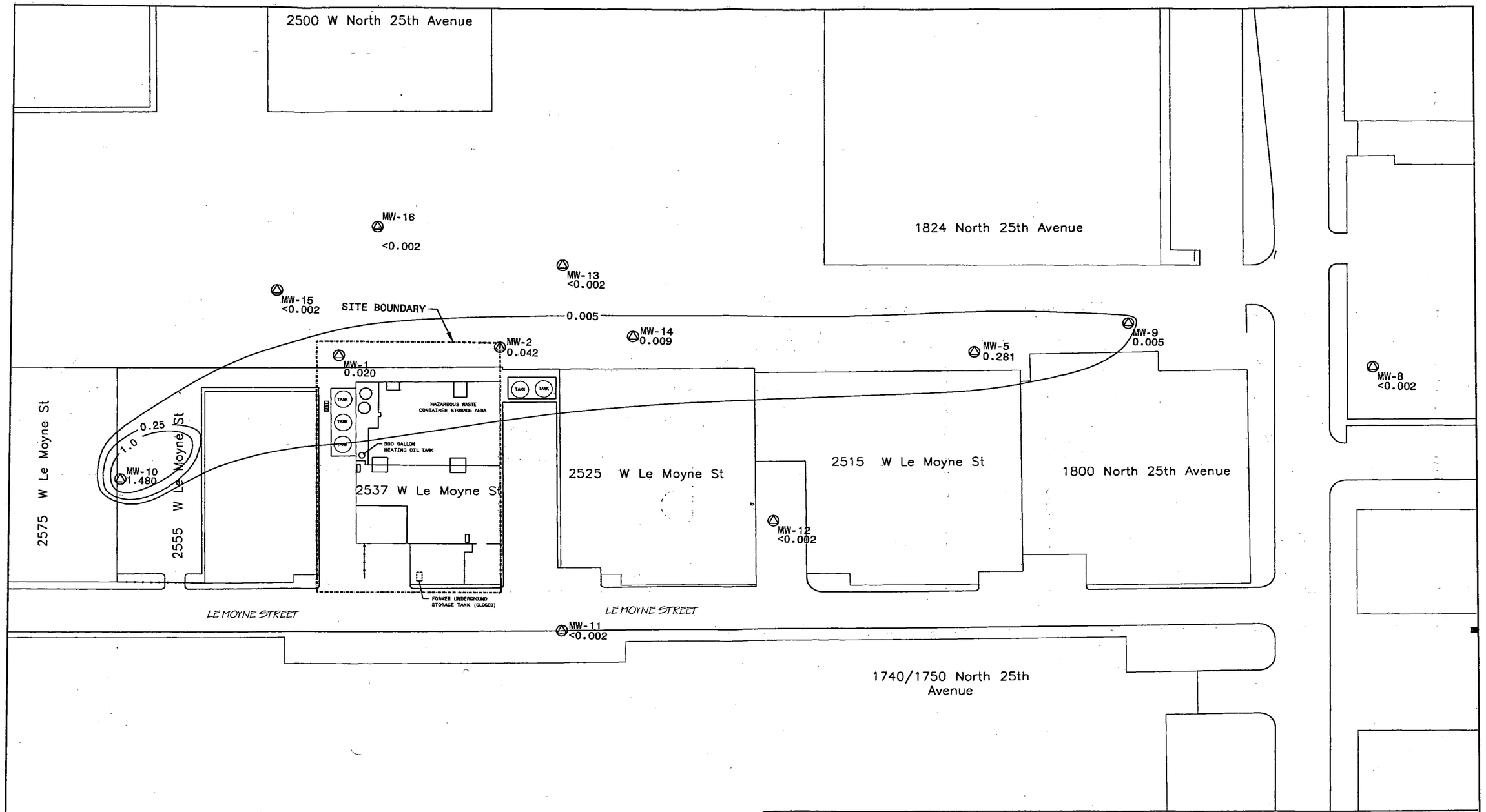


FIGURE 6
cis-1,2-DCE ISOCONCENTRATION CONTOURS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS



Huff & Huff, incorporated

FIGURE 9
VC ISOCONCENTRATION CONTOURS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CADFILE: DETREX_GW_CONTOUR_20121107

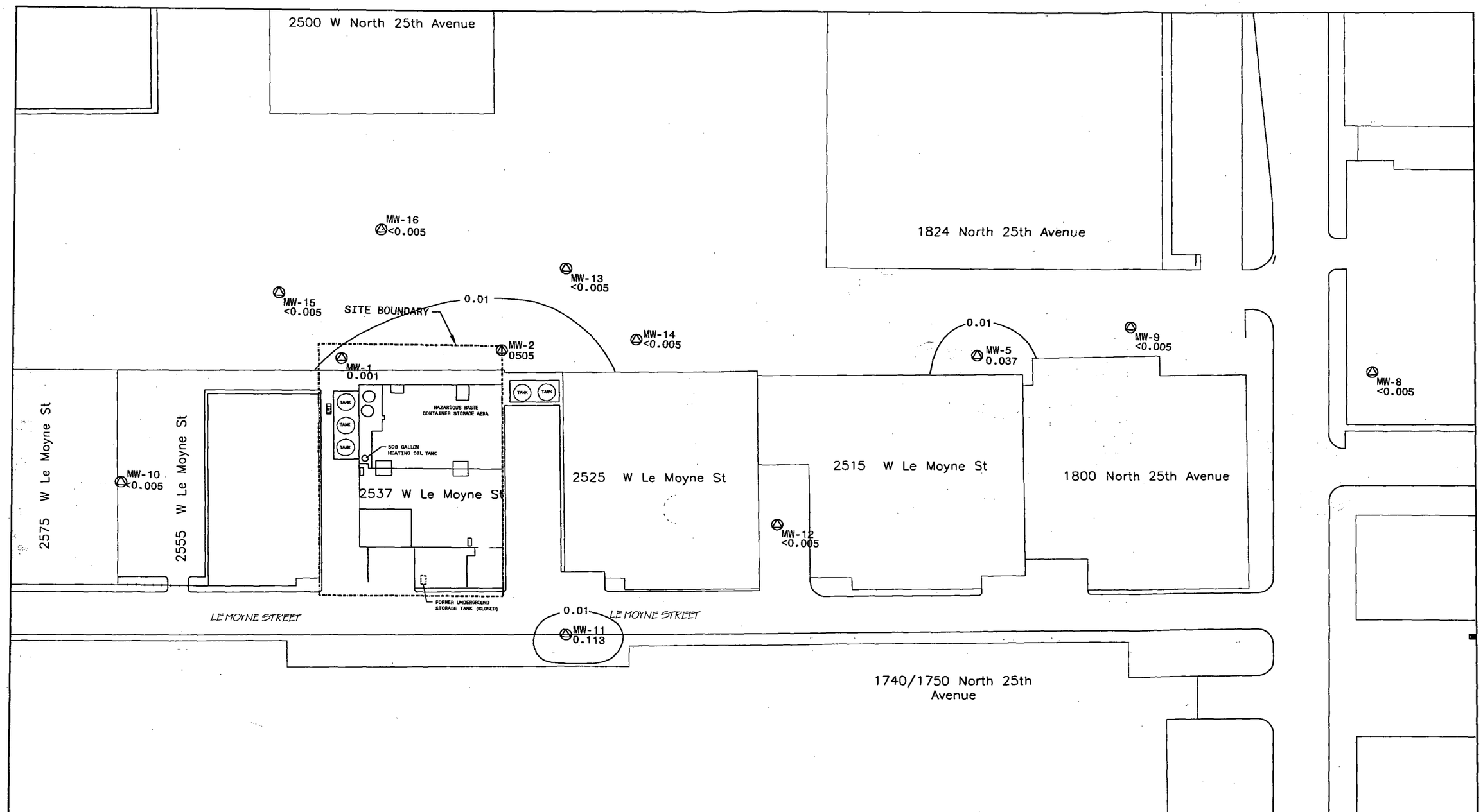


FIGURE 8
1,1,1-TCA ISOCONCENTRATION CONTOURS
NOVEMBER 7, 2012
DETREX CORPORATION
MELROSE PARK, ILLINOIS

CADFILE: DETREX_GW_CONTOUR_20121107

K-5
IEPA GMZ Approval letter

GMZ

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

217/524-3300

June 19, 2013

CERTIFIED MAIL
7012 0470 0001 2997 3611

Mr. David Craig
Detrex Corporation
24901 Northwestern Highway, Suite 410
Southfield, Michigan 48075

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: April 13, 2011; July 16, 2011
Log No.: B-113R-CA-18 and CA-22
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to two (2) documents submitted to the Illinois EPA regarding the groundwater corrective action requirements for the above referenced facility. The subject submittals were prepared and submitted on your behalf by ARCADIS. The submittals were reviewed as modification requests to the corrective action program of the facility's RCRA Renewal Permit issued October 9, 2003 (Log No. B-113R), and are listed below:

Submittal No. 1 – (Log No. B-113R-CA-18) A document entitled, "Site Investigation Completion Report", dated March 28, 2011, and received by the Illinois EPA on April 13, 2011. The March 28, 2011 submittal provides: a report on the installation of six (6) new monitoring wells; abandonment of one (1) well; a proposal for a Groundwater Management Zone (GMZ); and a proposal to exclude the groundwater ingestion pathway.

Submittal No. 2 – (Log No. B-113R-CA-22) A document entitled, "Semi-Annual Groundwater Monitoring Report, Second Quarter 2012", dated July 13, 2011, and received by the Illinois EPA on July 16, 2011. The July 13, 2011 submittal requests to remove benzene from the constituents of concern (COCs) on the groundwater monitoring list. The reports were submitted to address certain aspects of the RCRA Renewal Permit.

Soil and groundwater investigation of the facility and the surrounding off-site areas have been performed at the site since 1993 and to present date. Soil and groundwater contaminated with chlorinated constituents were identified in the vicinity of the facility and the adjacent properties. Specific to groundwater, the facility has conducted monitoring and investigation to determine the extent of contamination.

The subject submittals were reviewed by the Illinois EPA as requests to modify the groundwater portions of the RCRA corrective action program at the facility and are hereby approved with following conditions and modifications:

1. Due to the abandonment and removal of monitoring wells MW-3, MW-4, MW-6, and MW-7, they are no longer a part of the groundwater monitoring program.

2. The monitoring wells MW-11 through MW-16 have been added to the monitoring program.

3. The Illinois EPA concurs that the extent of groundwater contamination has been delineated and approves the establishment of a GMZ with the following conditions and modifications:

   a. The GMZ will be defined by wells: MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16.

   b. For any GMZ well located off-site, the facility must obtain documentation that the subject property owner acknowledges the well is designated as a GMZ well and is being used to define the effective boundary for the extent of corrective action for groundwater. Documentation must be submitted to the Illinois EPA within 120 days of the date of this letter.

   c. Groundwater monitoring at wells MW-5, MW-8, and MW-9 will not be required at this time. At this time, the wells must be maintained in accordance with 35 Ill. Adm. Code Part 920 regulations for possible sample collection if deemed necessary.

   d. The Illinois EPA requires an evaluation of a GMZ be completed a minimum of every five (5) years from the date it is established. The guidance entitled, "Re-evaluation of Groundwater Management Zones at RCRA Facilities (April 6, 2002)", must be utilized and can be found at http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/reevaluation-of-groundwater-management-zone.html.

   e. Based on the establishment of the GMZ, the program is now considered a groundwater corrective action monitoring program, rather than an interim groundwater monitoring program.

4. Benzene has been removed from the list of COCs for groundwater. Sampling for this parameter will no longer be required as of the date of this letter.

5. The request to exclude the groundwater pathway in accordance with 35 Ill. Adm. Code 742.925 cannot be approved, at this time. The Illinois EPA has identified areas where Csat limits are exceeded. The facility must meet the requirements of 35 Ill. Adm. Code 742.320 before exclusion of the groundwater pathway can be considered.

6. A completed RCRA Corrective Action Certification form must accompany all submittals made to the Illinois EPA regarding RCRA corrective action activities.

7. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:AMB/0311860003-RCRA-B113RCA18-B113RCA22-Approval.docx
AMB TBH JKM

Bcc: Bureau File
Des Plaines Region
Terri Myers
Jim Moore
Takako Halteman
Amy Boley

K-6
IEPA July 9, 2009 Letter
(Log B-113-CA-8 and 9)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

DOUGLAS P. SCOTT, DIRECTOR

217/524-3300

July 9, 2009

Certified Mail
7008 1140 0004 7343 2013

Mr. David Craig
Detrex Corporation
P.O. Box 5111
Southfield, Michigan 48086-5111

Re: 0311860003 -- Cook County
Detrex Corporation Solvent & Environmental Services
ILD074424938
Received: December 24, 2007; May 8, 2008; October 3, 2008; June 5, 2009
Log No.: B-113R-CA-8 and 9
Permit CA
RCRA - Permit

Dear Mr. Craig:

This is in response to the following four documents: (1) "Request for Meeting to Discuss Detrex Corporation Facility Located at 2537 LeMoyne Avenue in Melrose Park, Illinois", dated December 19, 2007; (2) "Phase III Summary of Environmental Conditions Report", dated May 5, 2008; (3) "Additional Information for the Detrex Corporation Facility", dated October 2, 2008; and (4) "Updated Water Well Survey Tex, Table, and Figures", dated May 12, 2009. These documents were submitted by Dr. Betty Locey of ARCADIS G&M of Michigan, LLC on behalf of Detrex Corporation (Detrex). The documents were submitted to address the corrective action required in the above-referenced facility's RCRA Part B Renewal Permit, issued on October 9, 2003 (Log No. B-113R).

Detrex's December 2007 submittal contained information regarding investigative results at the facility and requested a meeting to discuss the corrective action activities for the facility based on the previous activities and the information provided in the December 2007 submittal. A meeting was held between Detrex and Illinois EPA on February 5, 2008 to discuss the December 2007 submittal. During this meeting it was agreed that Detrex would submit a comprehensive corrective action report to Illinois EPA, which: (1) summarizes and evaluates the results of the RFI Phase III activity and previous corrective action effort; and (2) discusses the facility's plan to complete RCRA corrective action at on and off-site properties.

As agreed during the February 5, 2008 meeting, Detrex submitted the May 2008 Phase III Summary of Environmental Conditions Report, which included the results of RCRA Facility Investigation (RFI) Phase III soil and groundwater investigation conducted at the facility and the proposed Tier 2/3

evaluations of remedial objectives for the subject facility. Subsequently, as requested by Illinois EPA, the October 2, 2008 and the May 12, 2009 documents were submitted to Illinois EPA as addendums to the Phase III Summary of Environmental Conditions Report.

The four submittals mentioned and discussed above were reviewed as requests to modify the RCRA corrective action program at the Detrex facility in Melrose Park, Illinois and are hereby approved with following conditions and modifications:

1. Section 1 of the May 2008 report indicates that the facility's goals are to achieve: (1) Closure of the RCRA Permit; (2) a No Further Action (NFA) for the site; and (3) No Further Remediation (NFR) or Environmental Land Use Conditions (ELUCs) as appropriate for off-site properties. Illinois EPA has following comments:

    a. Use of an environmental land use control (ELUC) is one of the remedial options accepted by 35 Ill. Adm. Code 742: Tiered Approaches to Corrective Action Objectives (TACO) to eliminate an exposure pathway(s) by establishing restrictions on a property, which may include, but not limited to: industrial/commercial land use, an engineered barrier, access controls, groundwater use restrictions, a worker safety caution/plan, and/or use of site-specific remedial objectives.

    b. Any ELUC to be established for a property through Illinois EPA's corrective action program must be approved by Illinois EPA prior to being recorded with the appropriate government al office.

    c. Upon the completion of RCRA corrective action at the site and any affected off-site properties, Detrex will receive a No Further Action (NFA) letter regarding the RCRA corrective action for the four (4) former solid waste management units (SWMUs) required corrective action by the facility's RCRA Permit. This NFA determination is for the four SWMUs and any contamination discovered while undergoing RCRA corrective action; however it doesn't address any other potential contamination or environmental contamination that may exist within the property.

    d. Upon completion of RCRA corrective action at an off-site property, of which the contamination was originated from Detrex facility, Illinois EPA will issue a letter for the subject off-site property to indicate that the specific area of the property and the contamination associated with release from Detrex was remediated in accordance with Section 742 (TACO). However, note that this letter will not be a comprehensive No Further Remediation (NFR) letter for the property, as it only addresses a specific contamination and its affected area.

e. As for the "Closure of Permit", the facility must meet all the requirements of Section II.H of its RCRA Permit.

2. It appears as though Detrex has adequately characterized the soil contamination at this site.

3. Based on the site-specific conditions and IEPA's further evaluation of the data presented in the subject report, Illinois EPA has determined that the following site specific Soil Saturation Limits (C_{sat}) for TCE and PCE are approved ***for the Detrex property only***:

Trichloroethene (TCE) = 1767 mg/kg (surface soil; above 1-m bgs)
2550 mg/kg (subsurface soil; below 1-m bgs)

Tetrachloroethene (PCE) = 425 mg/kg (surface soil)
436 mg/kg (subsurface soil)

1,1,1-trichloroethane (1,1,1-TCA) = 1570 mg/kg (surface soil)*
2240 mg/kg (subsurface soil)*
**Default soil property values for silt are used*

Note that, as you are aware, the recent proposed amendments to the TACO regulations included various modifications, including addition of Indoor inhalation exposure route to the risk evaluation in TACO. Thus, it is highly recommended that the facility meet the default C_{sat} requirement recent proposed amendments to TACO as shown below:

Csat (mg/kg)	Outdoor Inhalation	GW Migration	Indoor Inhalation
PCE	800	310	290
111-TCA	1300	670	560
TCE	1200	650	520

4. If the facility disagrees with the C_{sat} values in Condition 3 above, the facility may choose to conduct additional evaluation. However, unless new additional field data, collected from appropriate sampling locations and depth pre-approved by Illinois EPA, is provided to Illinois EPA to modify the site-specific values, the following site-specific values for f_{oc}, the facility must utilize following values for the f_{oc}:

f_{oc} (surface soil) = 0.0086

f_{oc} (subsurface soil) = 0.013

5. At this time, Illinois EPA has determined that the soil attenuation capacity requirements of 35 Ill. Adm. Code 742.215 have been met. However, this determination may need to be re-evaluated if any new data indicates otherwise.

6. The concentration of 1,1,1-TCA detected at the facility meets the site-specific C_{sat} requirement. However, 1,1,1-TCA is still a consistent of concern for this facility and the surrounding properties. Any new analytical data to be collected must include this compound.

7. The facility's request to exclude the groundwater pathway in accordance with 35 Ill. Adm. Code 742.925 cannot be approved at this time. In accordance with Section 742.305 and 320, until the soils exceeding the site-specific C_{sat} values for TCE and PCE are remediated to below the C_{sat}, none of exposure pathways can be eliminated.

8. The investigation data and the evaluation of the soil and groundwater contamination in the on- and off-site properties included in the subject Phase III Report and the additional information submitted in October 2008 identified some highly contaminated areas (for TCE only) at the facility and off-site properties. Figures 5 thru 7 in Attachment 1 of the October 2008 submittal show the potential distribution of TCE in soil at three different subsurface elevations (the typical ground-surface elevation at Detrex facility is approximately 632.5'): 630', 620' and 610'. These figures show the facility's interpolation of the data collected to date and may not represent the accurate/actual field condition. However, the locations of the high concentrations of TCE shown in the figures are likely sources of the soil and groundwater contamination in the area.

   Based on the data provided in the subject submittals, the following areas of soil contamination associated/possibly associated with former releases and operation at the Detrex facility are identified below (Attachment D to this letter is a site map showing the locations of these areas):

   a. Soil contamination in the northern portion of the Detrex facility extending to the surrounding off-site areas (Area A);

   b. Soil contamination in the Loading Dock Area (Area B), which extends out west to the Outback property;

   c. Soil contamination in the vicinity of Outback Building, just west of Detrex property (Area C). Please note that this contamination may have originated from the Loading Dock Area (Area B) at Detrex;

   d. Soil contamination between Detrex Facility and Handy Button Facility along the LeMoyne Avenue (Area D);

e. Soil contamination in the Handy Button Property along LeMoyne Avenue (Area E); and

f. Area just East of Detrex Building in LaMantia Property (associated with Area B).

9. The facility must submit a corrective measure (CM) plan to address/remediate the areas identified in Condition 8 above. As indicated in Condition 7 above, any soils exceeding the site-specific C_{sat} limits must be remediated to at least below the C_{sat} levels (the actual remediation level is dependent on the procedures/requirements associated with developing remediation objectives for this project in accordance with 35 Ill. Adm. Code 742). The CM requirements for the Detrex facility is included in the Attachment D.3 of the facility's afore-mentioned RCRA Part B Renewal Permit. The CM plan must satisfy the requirements included in the permit. In addition, the following information must also be included:

a. A scaled site map showing the facility and the neighboring properties and their property boundaries. (each property must be clearly identified);

b. A scaled site map with the areas of soil contamination above the remedial objectives ;

c. A scaled site map with the areas of C_{sat} exceedance (at on- and off-site properties);

d. A scaled figure(s), which includes on-site and off-site properties showing: (1) the areas where Detrex intends to remediate; and (2) the contaminated areas found during the RFI where Detrex does not intend to remediate. An explanation to Item (2) based on the actual data collected to-date must be accompanied for each area surrounding the Detrex facility.

e. An estimate of the extent and the volume of contamination present in soil above applicable remedial objectives for the project;

f. Detailed descriptions and technical background and specification information for chosen remedial method(s), which should include pros and cons of utilizing the remedial method(s);

g. Time schedule and cost estimate for the proposed remedial activity and reporting;

h. Goals and objectives of the proposed remedial efforts;

i. Criteria for evaluation of the outcome of the remedial efforts; and

j. If a pilot study of one or more remedial option is proposed, then detailed technical information applicable to this project regarding all selected methods/options must be provided.

10. As you know, the proposed amendments to the TACO regulations included many changes to the current regulations. Specifically, the modifications proposed which will affect the direction of the Detrex corrective action project include (but not limited to):

    a. Addition of the indoor-Inhalation exposure route evaluation for soil and groundwater concentrations;

    b. Changes in the Tier 1 remediation objectives; and

    c. Soil saturation limits (C_{sat}) for three different exposure routes for COCs for this site: outdoor-inhalation, migration to groundwater; and indoor-inhalation.

    Due to the fact that: (1) concentrations of the TCE and other COCs are extremely high; (2) contamination has migrated to off-site properties; and (3) indoor inhalation exposure is an immediate concern at this facility and off-site areas, although it is not required at this time, it is recommended that the facility will develop a corrective measure (CM) plan to address the contaminations to meet the requirements of the proposed amendments to the TACO.

11. For the off-site properties that require remedial action, the default Tier 1 C_{sat} must be met, unless the Owner(s) of the property decides to place an ELUC to utilize TACO Tier2/Tier3 evaluation in accordance with TACO regulations. Site-specific parameters such as organic carbon fraction of soil must be confirmed to be accurate to be used for the off-site proprieties.

12. The following comments are made regarding the Proposed Remediation Objectives for Detrex site:

    a. Industrial Commercial Land Use: All remedial objectives are based on the industrial or commercial land use. This restriction must be included in an environmental land use control (ELUC) for the facility and the appropriate surrounding properties.

    b. Inhalation/ingestion (outdoor) exposure routes: It was proposed that these exposure routes be eliminated due to the fact that all affected areas are currently covered either by concrete or asphalt. As these are proposed to be an "engineered barrier" to the contaminated soil beneath, the requirements of 742.1000 must be met. In addition, an appropriate ELUC will also have to be established.

c. Soil Component of Groundwater Ingestion Exposure route: This exposure route cannot be eliminated in accordance with 35 Ill. Adm. Code Section 742.320 until all the requirements of that section are met. Once the requirements are met, then the use of the City of Melrose Pak Ordinance #321 as an institutional control to eliminate groundwater ingestion exposure route may be proposed in accordance with 35 Ill. Adm. Code 742 Subpart J.

d. Potential Indoor Inhalation Exposure Route: This exposure route will be of concern with the concentrations of contaminants in the soil and groundwater fund at this facility. In the subject report, the facility conducted a preliminary assessment comparing the results of the soil sampling with the proposed Tier 1 ROs for the indoor inhalation exposure route with TACO. The preliminary evaluation indicated that the levels of contaminants remain in the vicinity of the facility and surrounding properties exceeded the draft ROs for the industrial/commercial land use. See Condition 14 below for more comment on this exposure route.

13. The facility proposes to establish engineered barriers to eliminate the pathway for the ingestion and inhalation exposure routes. As stated in Condition 12 above, it appears that the facility intends to utilize the existing building and the paved area at the site as the engineered barrier. It must be noted that in order to utilized the existing structures as engineered barrier, all the pavement and the structures must be thoroughly inspected for any cracks or defects by a licensed structural engineer in the state of Illinois. Furthermore, the engineered barrier must be properly maintained in a future.

14. For indoor inhalation exposure pathway, the analytical data was compared to the draft remedial objectives for this exposure route in the subject submittal, which have not been formally approved by the Illinois Pollution Control Board (IPCB). However, by comparison, the levels of COCs in soil and groundwater may pose threat to the indoor air and will be likely to be concern for this facility and surrounding areas. The proposed regulations are being drafted at this time and the draft regulations to be included in TACO is expected to be available in the near future. As such, it is highly recommended that the facility should initiate the remedial option for the facility and any affected off-site locations regarding this exposure route.

15. It was demonstrated that the soil contamination in the northeastern portion of LaMantia property and the southeastern portion of U.S. Postal Service is unlikely to be associated with the soil contamination identified in the Detrex facility. However, the groundwater contamination in the vicinity of this area maybe associated to the contamination from Detrex.

16. The Illinois EPA cannot concur with the facility interpretation of the horizontal extent of groundwater contamination, as depicted on Figure 4 of the Additional Information dated

October 2, 2008. The facility must define the extent of groundwater contamination with actual data points where contaminants of concern (COCs) are not exceeding 35 Ill. Adm. Code, Part 620, Class II Groundwater Quality Standards (GQSs), instead of modeling or estimating the extent of the plume.

17. The following additional sampling locations are required to better define the extent of groundwater contamination:

    a. A minimum of three (3) groundwater samples are required to determine the actual extent of current groundwater contamination north of SWMU 3. Groundwater samples must be collected north of the railway at the following locations: (1) northwest of MW-1; (2) near BH-44; and (3) northeast of MW-2.

    b. A current sample southeast of SWMU 3, collected at or near BH-38.

    c. If current conditions indicate the groundwater levels exceed Class II GQSs at any of the locations required by Conditions 17.a and 17.b above, more investigation locations may be necessary to determine the extent of contamination.

    d. The samples required by Conditions 17.a and 17.b above must be obtained before the facility can further pursue excluding the groundwater pathway. The groundwater sampling locations may be collected from temporary piezometers; however, once the extent of groundwater has been defined, permanent monitoring wells may be required.

18. The Illinois EPA concurs that there are likely off-site sources of contamination that are not attributable to Detrex, and the groundwater contaminant plumes cannot be differentiated based on available data. Therefore, groundwater contamination has been delineated for all COCs at the following locations:

    a. Groundwater has been defined to the extent practicable to the south with monitoring wells MW-03, MW-04, and MW-07.

    b. Monitoring well MW-8 defines the extent of groundwater contamination to the east.

    c. Monitoring well MW-10 is adequate to define the extent of contamination to the west.

19. The Illinois considers the vertical extent of contamination defined to the extent practicable. This decision is based on: (1) the hydrogeologic properties of the Silt and Clay Unit; (2) the boring logs included within Appendix G, which indicate the unit becomes stiff and dry with depths of approximately 17 feet bgs and deeper; and (3) the uppermost aquifer is up to 48 feet thick within the investigation area.

20. The facility must maintain monitoring wells MW-1 through MW-10 to allow for collection of groundwater samples from the uppermost aquifer. The facility must implement a routine groundwater monitoring program, and report all monitoring and analytical data in accordance with the schedule listed below:

a.

Samples to be Collected During the Months of	Results Submitted to the Illinois EPA by the Following
Second Quarter	July 15
Fourth Quarter	January 15

b. The Illinois EPA concurs with the proposed site-specific COCs: benzene; chloroethane; chloroform; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; tetrachloroethene; 1,1,1-trichloroethane; trichloroethene; and vinyl chloride. All groundwater samples must be analyzed and compared to the approved Class II GQSs. An isoconcentration map must be created based on the results of the groundwater analysis.

c. The facility must determine the groundwater surface elevations at each well at the time groundwater is sampled in accordance with Condition 20.a. A potentiometric groundwater surface map must be created based on the groundwater elevations collected.

d. The facility must submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by this letter for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the facility must submit one (1) original and (excluding the groundwater monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is included as Attachment B.

e. Information required by Conditions 20.a through 20.d must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this letter, in accordance with the schedule found in Condition 20.a above. Additional guidance regarding the submittal of the information in an electronic format can be found at www.epa.state.il.us/land/regulatory-programs/permits-and-management/index.html.

f. The facility must report the information required by Conditions 20.a through 20.e in accordance with the schedule listed in Condition 20.a above, to the address listed below:

Stephen F. Nightingale, P.E.
Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276

21. Groundwater monitoring must continue at a minimum until such time that remediation of soils has been achieved below C_{sat} levels. The facility must have Illinois EPA approval before the monitoring program can cease.

22. If free product is encountered during sampling or remediation activities, corrective action must be proposed, for Illinois EPA review and approval, for the removal of free product and contaminated groundwater.

23. Once the vertical and horizontal extent of contamination have been defined, as reviewed and approved by the Illinois EPA, the facility must establish a Groundwater Management Zone in accordance with 35 Ill. Adm. Code 620.250, and the Illinois EPA guidance document, "Establishing a Groundwater Management Zone at RCRA Facilities" (October 12, 2001). This guidance can be found electronically at the following Illinois EPA's website; http://www.epa.state.il.us/land/regulatory-programs/permits-and-management/establishing-groundwater-management-zone.html.

24. Based on an average of slug test values provided on Table 5 in Volume 1 of the subject submittal dated May 6, 2008, the average hydraulic conductivity value of 5.29E-07 cm/sec must be used when applicable.

25. The groundwater requirements of the May 22, 2007 Illinois EPA letter (Log No. B-113-CA-6 & 7) have been satisfied.

26. As indicated by Mr. Stan Miles of Detrex during August 2008, the facility is in process of collecting the soil-gas samples at Outback property, located just west of the Detrex property. For any future field activity, it is recommended that the facility should submit a workplan for Illinois EPA's review and approval. Any field activities and investigation must be conducted an accordance with the technical guidance provided by USEPA, ASTM, ITRC or other acceptable professional organizations. All soil gas samples must be analyzed using a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory.

27. In general, when collecting soil gas samples, at a minimum, the followings should be followed during sample collection:

    a. Use rigid-wall tubing made of nylon or Teflon (or other equivalent material);

    b. Use gas-tight, insert containers to hold the sample;

    c. Purge three volumes before obtaining each discrete soil gas sample;

    d. Use a tracer of isopropyl alcohol or other equivalent leak compound;

    e. Limit the flow rate to 200 ml/min; and

    f. Soil gas sample shall be collected at a depth of 5 feet below ground surface.

28. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies (a total of **three complete** sets) must be submitted to Illinois EPA.

29. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

30. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all required sampling/analysis efforts. In addition, sample collection, handling, preservation, preparation and analysis must be conducted in accordance with the procedures set forth in SW-846 and the requirements set forth in this letter.

31. All Corrective Action activities at this facility must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.

32. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 Ill. Adm. Code 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.

33. A completed and original RCRA Corrective Action Certification form must accompany all submittals associated with this project. To allow for proper review and distribution of all information submitted to Illinois EPA, the original document and two copies must be submitted to Illinois EPA.

This action shall constitute Illinois EPA's final action on the subject submittal. Within 35 days after the date of mailing of Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal(s) or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

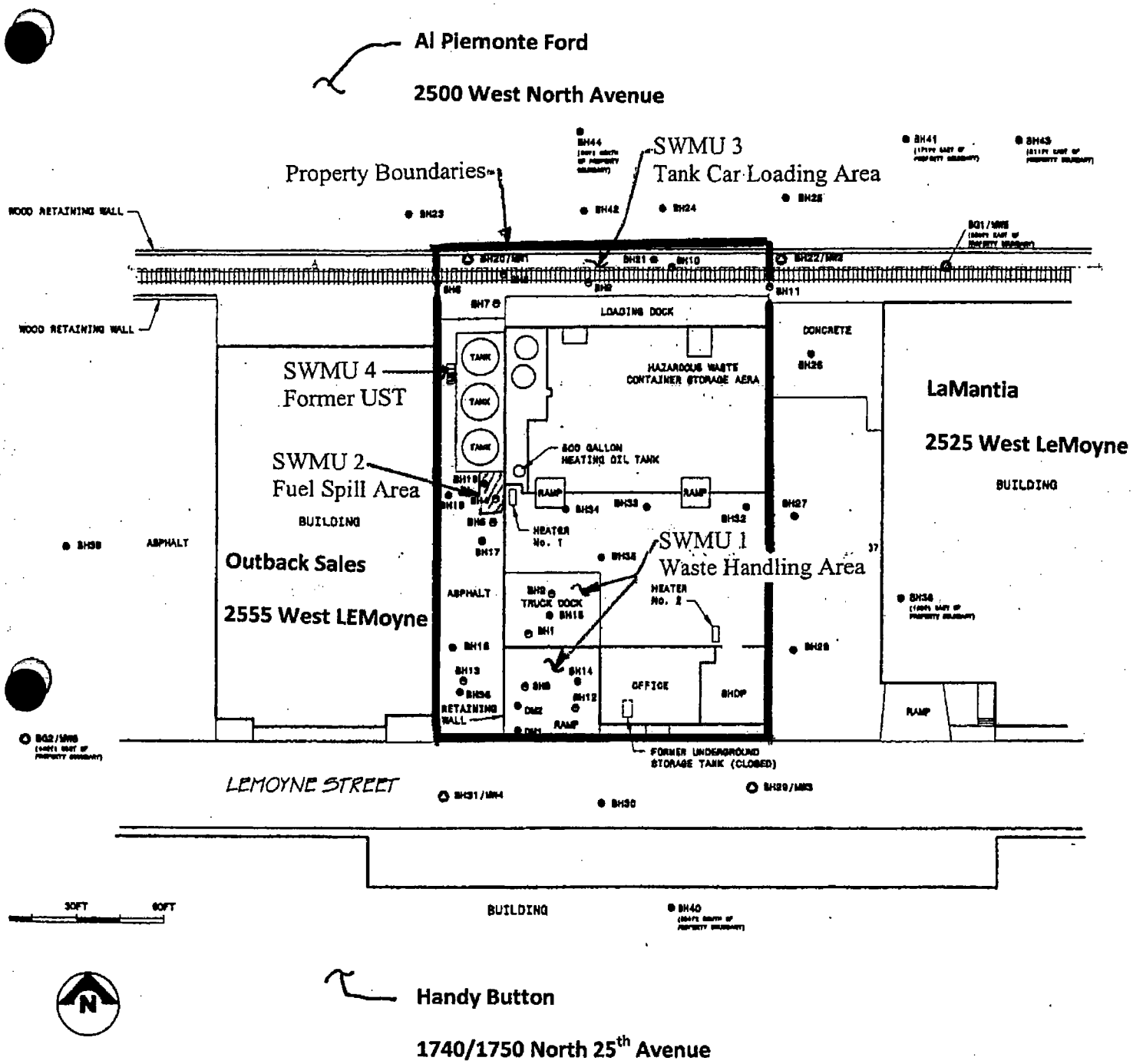
Should you have any questions regarding the groundwater aspects of this project, please contact Amy Boley at 217/558-4716; questions regarding other aspects of this project should be directed to Takako Halteman at 217/524-3274.

Sincerely,

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land

SFN:TNH/mls/092024s.doc
JKM AMB TPM

Attachment: A -- Site Map
B -- RCRA Facility Groundwater, Leachate and Gas Reporting Form (LPC-952)
C -- Electronic Reporting Form
D -- Soil TCE Contamination Distribution Map at 620'



Handy Button

1740/1750 North 25th Avenue

Detrex Corp. Facility

2537 West LeMoyne

Attachment A

Site Layout Map

Detrex Corp Facility

B-113R

Attachment B

RCRA Facility Groundwater, Leachate, and Gas Reporting Form (LPC 592)

Illinois
Environmental
Protection Agency

Bureau of Land
1021 North Grand Avenue East
Box 19276
Springfield, IL 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: _____ Site ID #: _____
Facility Address: _____ Fed ID #: _____

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

___ LPC-160 Forms

Groundwater	Leachate
___ Quarterly – Indicate one: 1 2 3 4	___ Quarterly – Indicate one: 1 2 3 4
___ Semi-Annual	___ Semi-Annual
___ Annual	___ Annual
___ Biennial	___ Biennial

___ Groundwater Data (without LPC-160 Forms)
___ Quarterly – Indicate one: 1 2 3 4
___ Annual ___ Semi-Annual ___ Biennial

___ Well Construction Information
___ Well Construction Forms, Boring Logs and/or Abandonment Forms
___ Well Survey Data (e.g., Stick-up Elevation Data)

___ Notice of Statistically Significant Evidence of Groundwater Contamination (35 Ill. Adm. Code 724.198)

___ Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))

___ Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 Ill. Adm. Code 724.199(i))

___ Gas Monitoring Reports

___ Other (identify) _____

Attachment C

Electronic Reporting Form

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE | L | P | C | S | M | 0 | 1 | (1–7)

TRANS CODE | A | (8)

REPORT DUE DATE __/__/__ (36 M D Y 41)

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ (9–18)

MONITOR POINT NUMBER _____ (see Instructions) (19–22)

REGION _____ CO. _____

DATE COLLECTED __/__/__ (23 M D Y 28)

FACILITY NAME _____

FOR IEPA USE ONLY

LAB _____ (29)

DATE RECEIVED __/__/__ (42 M D Y 47)

BACKGROUND SAMPLE (X) _____ (54)

TIME COLLECTED __:__ (24 Hr. Clock) (55 11 M 58)

UNABLE TO COLLECT SAMPLE _____ (see Instructions) (59)

MONITOR POINT SAMPLED BY _____ (see Instructions) (60)

OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ (61) ORGANICS (X) _____ (62)

SAMPLE APPEARANCE _____ (63–102)

COLLECTOR COMMENTS _____ (103–142)

LAB COMMENTS _____ (158–199)

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

Formatting Requirements for the 02 Record of the Electronically Submitted Groundwater and Leachate Data (the 02 Record portion of the LPC-160 is included for example purposes)

RECORD CODE | L | P | C | S | M | 0 | 2 | (1–7) TRANS CODE | A | (8) (COLUMNS 9-29 FROM ABOVE)

	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER (30–34)	Remarks See Inst. (35)	Replicate (36)	< or > (37)	VALUE (38–47)
Q	TEMP OF WATER (unfiltered °F)	00011				
Q	SPEC COND (unfiltered umhos)	00094				
Q	pH (unfilted units)	00400				
Q	ELEV OF GW SURF (ft ref MSL)	71993				
Q	DEPTH OF WATER (ft below LS)	72019				
A	BTM WELL ELEV (ft ref MSL)	72020				
Q	DEPTH TO WATER FR MEA PT (ft)	72109				

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ¼, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000 for each day the failure continues a fine up to $1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

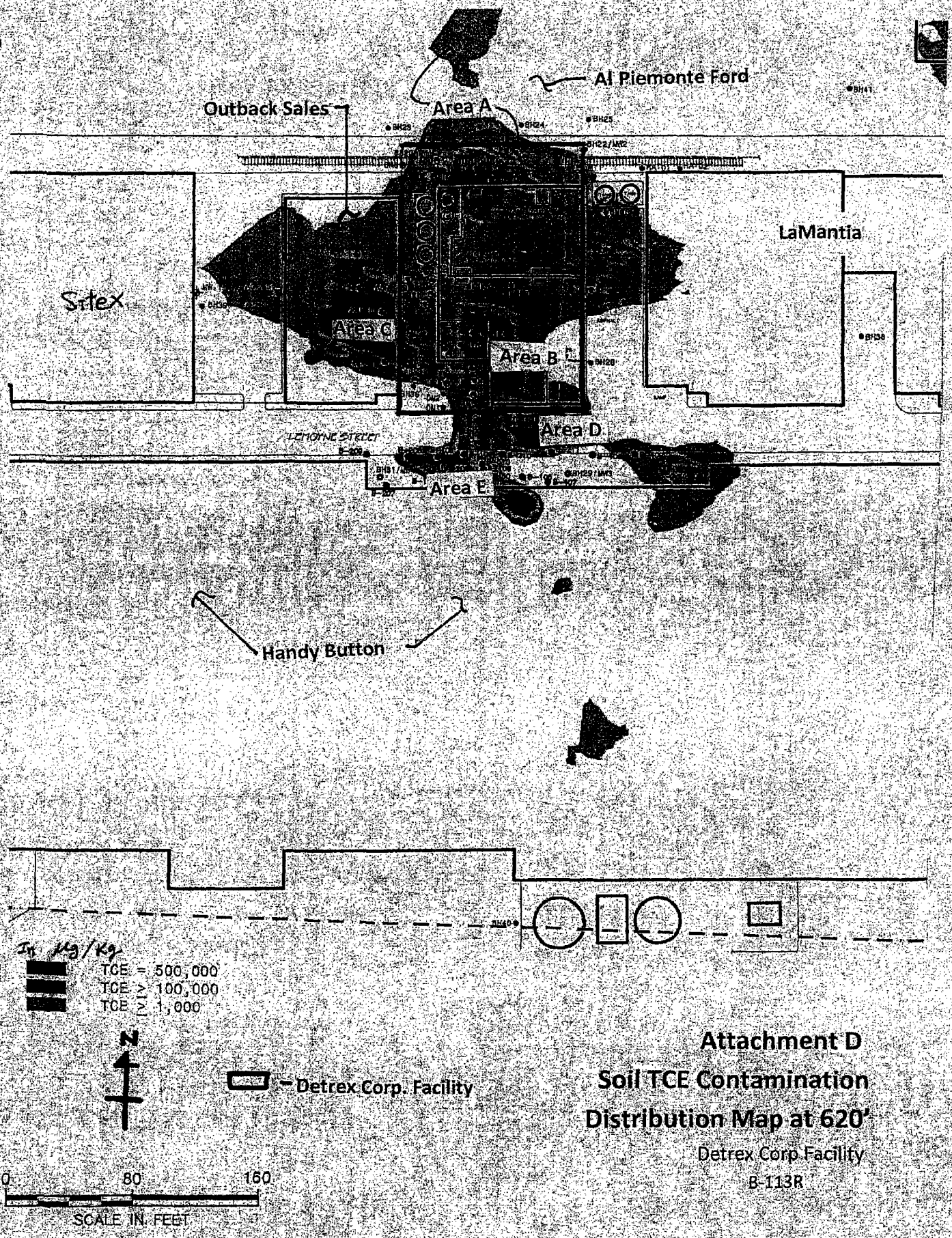
*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

Spaces Numbered	Description	Format
Spaces 1-7	Record Code	LPCSM02
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	
Spaces 23-28	Date Collected	
Space 29	Lab	
Spaces 30-34	STORET Number	
Space 35	Remarks	
Space 36	Replicate	
Space 37	< or >	
Space 38-47	Value	

Attachment D

Soil TCE Contamination Distribution Map at 620'



Attachment D

Soil TCE Contamination Distribution Map at 620'

Detrex Corp Facility

B-113R

K-7
GW Sampling Methodology

4.2.3 Water Level Measurements

Well water level measurements will be recorded for each groundwater sampling event. The measurements will be taken before the wells are purged and the samples are collected. The well caps will be removed and the well will be allowed to equilibrate to atmospheric pressure for a minimum of 15 minutes before measurements are taken. The measurements will be taken with an electronic probe, to the nearest 0.01-foot. The water level measurement will be recorded from a predetermined mark on the well casing or the north side of the well.

The depth to water level measuring equipment will be decontaminated between wells using an Alconox-water solution, followed by a methanol rinse, followed by a final rinse with distilled water.

4.2.4 Monitoring Well Sampling

A minimum of three well-volumes of groundwater will be purged from each monitoring well before sampling using an individual, disposable bailer for each well. Wells which purge dry prior to the three well-volume minimum will be allowed to recharge and sampled, noting any discrepancy. One or more groundwater quality parameters will measured, including temperature, pH, specific conductivity, ORP, odor, and color/relative turbidity. The groundwater sample collected for analytical analysis will be placed directly in laboratory provided/preserved glassware.

Prior to mobilization to the site, the appropriate management practice for purge water will be determined. The purge water from bailing will collected in buckets and placed in appropriately labeled 55-gallon drums for offsite disposal.

4.2.5 QA/QC Samples

Field QA/QC may include the collection and/or designation of equipment blanks, field blanks, trip blanks, and field duplicates. The number of QA/QC samples collected will depend on the regulatory program and agreed upon sampling plans. A common collection schedule is as follows:

- One field blank will be collected each day of soil sampling;
- One trip blank will be included with each day's shipment;
- One duplicate will be collected for every 10 samples analyzed.

4.2.6 Sample Preservation

Containers. Soil and groundwater samples will be placed in containers provided by the laboratory. The soil and groundwater containers will meet the minimum quality requirements set forth in USEPA "OSWER Directive No. 9240.0-05A, Specifications and Guidance for Contaminant-Free Sample Containers."

Additives. Samples will be preserved with chemical additives, as required by the analytical method. Correct preservatives will be provided by the laboratory in the sample container.

Temperature Control. Samples will be stored in coolers with ice. Samples will be placed in the coolers as soon as possible after sample collection and will remain in the coolers during transport from the field to the laboratory. Ice within the cooler will be replaced as needed to ensure the samples arrive at the laboratory at or below the required temperature.

K-8
MW Boring Logs and Well Completion Reports

Illinois Environmental Protection Agency — Well Completion Report

SITE #: 0311860003 COUNTY: Cook WELL #: MW-1 BOREHOLE #: BH20

SITE NAME: Detrex Corporation WELL POSITION – UPGRAD, DNGRAD, UNKN (CIRCLE ONE)

STATE PLANE COORDINATE: X _____ Y _____ (or) LATITUDE: 41 ° 54 ' 23 " LONGITUDE: 87 ° 52 ' 0

SURVEYED BY: ESE I.L. REGISTRATION #: _____

DRILLING CONTRACTOR: Rock & Soil Drilling Corp. DRILLER: Scott Matheny

GEOLOGIST: Robert Lint FIRM: ESE

DRILLING METHOD: HSA DRILLING FLUIDS (TYPE): None

DATE STARTED: 10/3/95 DATE FINISHED: 10/3/95

REPORT FORM COMPLETED BY: Robert Lint DATE: 10/4/95

ANNULAR SPACE DETAILS

TYPE OF SURFACE SEAL: Cement

TYPE OF ANNULAR SEALANT: Bentonite

INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF BENTONITE SEAL – GRANULAR, PELLET, SLURRY (CIRCLE ONE)

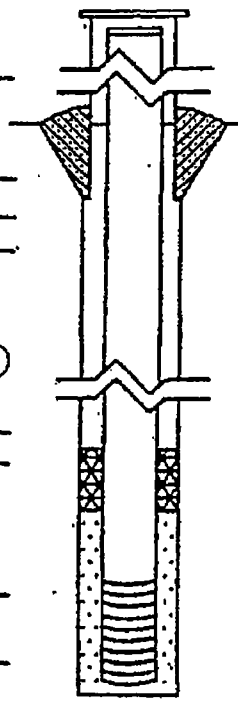
INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF SAND PACK: Quartz

GRAIN SIZE: #5 (SIEVE SIZE)

INSTALLATION METHOD: _____



ELEVATIONS (MSL)*	DEPTHS (BGS) (.01 ft)	
NA	NA	TOP OF PROTECTIVE CASING
631.67	0.28	TOP OF RISER PIPE
631.95	0.00	GROUND SURFACE
631.95	0.00	TOP OF ANNULAR SEALANT
Dry	Dry	DEPTH TO WATER
631.95	0.00	TOP OF SEAL
627.95	4.0	TOP OF SANDPACK
626.95	5.0	TOP OF SCREEN
616.95	15.0	BOTTOM OF SCREEN
616.45	15.5	BOTTOM OF WELL
605.95	26.0	BOTTOM OF BOREHOLE

* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM

MEASUREMENTS

DIAMETER OF BOREHOLE (in)	6.5
ID OF RISER PIPE (in)	2 in.
PROTECTIVE CASING LENGTH (ft)	NA
RISER PIPE LENGTH (ft)	5.0 ft.
BOTTOM OF SCREEN TO END CAP(ft)	0.5 ft.
SCREEN LENGTH (1st SLOT TO LAST SLOT)	10 ft.
TOTAL LENGTH OF CASING (ft)	15 ft
SCREEN SLOT SIZE **	0.010 in

WELL CONSTRUCTION MATERIALS

(CIRCLE ONE)

PROTECTIVE CASING	SS304, SS316, PTFE, PVC OR OTHER:
RISER PIPE ABOVE W.T.	SS304, SS316, PTFE, PVC OR OTHER:
RISER PIPE BELOW W.T.	SS304, SS316, PTFE, PVC OR OTHER:
SCREEN	SS304, SS316, PTFE, PVC OR OTHER:

** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

(940325)

Environmental Science & Engineering, Inc.

5440 N. CUMBERLAND AVE.
SUITE 111
CHICAGO, IL 60656

TEST BORING RECORD

CLIENT ▸ DETREX CORP.	SITE ▸ 2537 LEMOYNE AVE. MELROSE PARK, ILLINOIS
BORING NO. ▸ BH20	
DATE ▸ 10/3/95	LOCATION ▸ SEE SITE MAP
LOGGED BY ▸ R. LINT	DRILLED BY ▸ ROCK & SOIL DRILLING CORP.
DRILLING METHOD ▸ HSA	SAMPLING METHOD ▸ SPLIT SPOON
	HOLE DIA. ▸ 6.5"
ESE PROJECT NUMBER ▸ 559-5160	ESE DRAWING NUMBER ▸ B95-BH20 / TOTAL DEPTH ▸ 26.0 FT.

DEPTH	SAMPLE NO.	SAMPLE RECOVERY	PENETRATION RESISTENCE	PID READING	MOISTURE	LITHOLOGY	REMARKS (WELL DIAGRAM)
0						Railway gravel bed	
1	1					Fat clay, medium plasticity, light olive brown	
2							
3							
4							
5	2						
6				65			
7							
8					Moist	Fat clay, high plasticity, grey, soft, trace of gravel	
9	3						
10							
11							
12				3	Moist	Lense of silt/clay, firm	
13	4				Moist	Sandy fat clay, mostly clay (70%) with some medium grain sand (30%), firm	
14							
15							
16				0			
17					Moist	Fat clay, hard	
18				0	Dry	- Very hard, trace of silt	
19	5						
20							
21							
22							
23							
24							
25	6						
26						Boring terminated at 26.0 ft	

Illinois Environmental Protection Agency — Well Completion Report

SITE #: 0311860003 COUNTY: Cook WELL #: MW-2 BOREHOLE #: BH22

SITE NAME: Detrex Corporation WELL POSITION – UPGRAD, DNGRAD, (UNION) (CIRCLE ONE)

STATE PLANE COORDINATE: X _____ Y _____ (or) LATITUDE: 41 ° 54 ' 23 " LONGITUDE: 87 ° 52 ' 02 "

SURVEYED BY: ESE P.L. REGISTRATION #: _____

DRILLING CONTRACTOR: Rock & Soil Drilling Corp. DRILLER: Scott Matheny

GEOLOGIST: Robert Lint FIRM: ESE

DRILLING METHOD: HSA DRILLING FLUIDS (TYPE): None

DATE STARTED: 10/3/95 DATE FINISHED: 10/3/95

REPORT FORM COMPLETED BY: Robert Line DATE: 10/4/95

ANNULAR SPACE DETAILS

TYPE OF SURFACE SEAL: Cement

TYPE OF ANNULAR SEALANT: Bentonite

INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF BENTONITE SEAL – GRANULAR, PELLET, (SLURRY) (CIRCLE ONE)

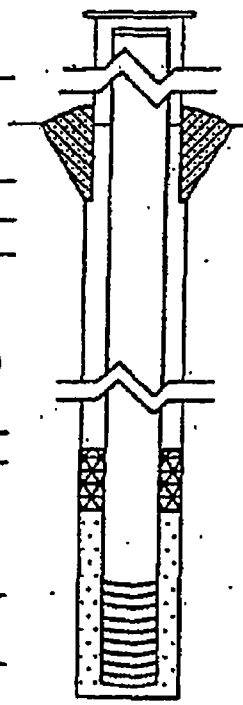
INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF SAND PACK: Quartz

GRAIN SIZE: #5 (SIEVE SIZE)

INSTALLATION METHOD: _____



ELEVATIONS (MSL)*	DEPTHS (BGS) (.01 ft)	
NA	NA	TOP OF PROTECTIVE CASING
631.76	0.28	TOP OF RISER PIPE
632.04	0.00	GROUND SURFACE
632.04	0.00	TOP OF ANNULAR SEALANT
Dry	Dry	DEPTH TO WATER
632.05	0.00	TOP OF SEAL
628.04	4.0	TOP OF SANDPACK
627.04	5.0	TOP OF SCREEN
617.04	15.0	BOTTOM OF SCREEN
616.54	15.5	BOTTOM OF WELL
606.04	26.0	BOTTOM OF BOREHOLE

* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM

WELL CONSTRUCTION MATERIALS (CIRCLE ONE)

PROTECTIVE CASING	(SS304), SS316, PTFE, PVC OR OTHER:
RISER PIPE ABOVE W.T.	(SS304), SS316, PTFE, PVC OR OTHER:
RISER PIPE BELOW W.T.	SS304, SS316, PTFE, PVC OR OTHER:
SCREEN	(SS304), SS316, PTFE, PVC OR OTHER:

MEASUREMENTS

DIAMETER OF BOREHOLE (in)	6.5 in
ID OF RISER PIPE (in)	2 in.
PROTECTIVE CASING LENGTH (ft)	NA
RISER PIPE LENGTH (ft)	5 ft.
BOTTOM OF SCREEN TO END CAP (ft)	0.5 ft.
SCREEN LENGTH (1st SLOT TO LAST SLOT)	10 ft.
TOTAL LENGTH OF CASING (ft)	15 ft.
SCREEN SLOT SIZE **	0.010 in

** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

(840328)

Environmental Science & Engineering, Inc.

5440 N. CUMBERLAND AVE.
SUITE 111
CHICAGO, IL 60656

TEST BORING RECORD

CLIENT ▸ DETREX CORP.	SITE ▸ 2537 LEMOYNE AVE.
BORING NO. ▸ BH22	MELROSE PARK, ILLINOIS
DATE ▸ 10/2/95	LOCATION ▸ SEE SITE MAP
LOGGED BY ▸ R. LINT	DRILLED BY ▸ ROCK & SOIL DRILLING CORP.
DRILLING METHOD ▸ HSA	SAMPLING METHOD ▸ SPLIT SPOON
	HOLE DIA. ▸ 6.5"
ESE PROJECT NUMBER ▸ 559-5160 / ESE DRAWING NUMBER ▸ B95-BH22	TOTAL DEPTH ▸ 26.0 FT.

DEPTH	SAMPLE NO.	SAMPLE RECOVERY	PENETRATION RESISTENCE	PID READING	MOISTURE	LITHOLOGY	REMARKS (WELL DIAGRAM)
0	1					Railway gravel bed	
1					Moist	Fat clay, high plasticity, light olive brown, hard	
2							
3							
4							
5	2						
6							
7							
8				1107			
9	3				Moist	Fat clay, high plasticity, grey, hard, solvent odor	
10							
11							
12				9			
13	4						
14							
15							
16				5			
17							
18				5	Dry	- Very hard	
19	5						
20							
21							
22				8			
23							
24							
25	6						
26						Boring terminated at 26.0 ft	

Illinois Environmental Protection Agency — Well Completion Report

SITE #: 0311860003 COUNTY: Cook WELL #: MW-5 BOREHOLE #: BG1

SITE NAME: Detrex Corporation WELL POSITION – UPGRAD, DNGRAD, (UNKN) (CIRCLE ONE)

STATE PLANE COORDINATE: X _____ Y _____ (or) LATITUDE: 41 ° 54 ' 23 " LONGITUDE: 87 ° 52 ' 02

SURVEYED BY: ESE ILL. REGISTRATION #: _____

DRILLING CONTRACTOR: Rock & Soil Drilling Corp. DRILLER: Scott Matheny

GEOLOGIST: Robert Lint FIRM: ESE

DRILLING METHOD: HSA DRILLING FLUIDS (TYPE): None

DATE STARTED: 10/3/95 DATE FINISHED: 10/3/95

REPORT FORM COMPLETED BY: Robert Lint DATE: 10/4/95

ANNULAR SPACE DETAILS

TYPE OF SURFACE SEAL: Cement

TYPE OF ANNULAR SEALANT: Bentonite

INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF BENTONITE SEAL – GRANULAR, PELLET, (SLURRY) (CIRCLE ONE)

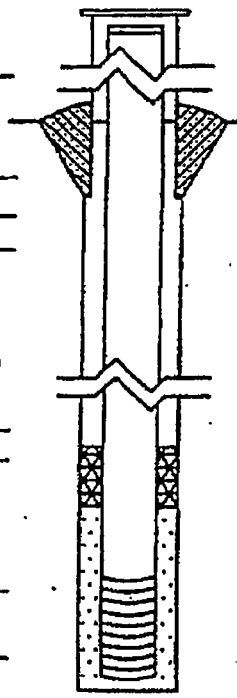
INSTALLATION METHOD: Tremie

SETTING TIME: _____

TYPE OF SAND PACK: Quartz

GRAIN SIZE: #5 (SIEVE SIZE)

INSTALLATION METHOD: _____



ELEVATIONS (MSL)*	DEPTHS (BGS) (.01 ft)	
NA	NA	TOP OF PROTECTIVE CASING
630.62	0.39	TOP OF RISER PIPE
631.01	0.00	GROUND SURFACE
631.01	0.00	TOP OF ANNULAR SEALANT
Dry	Dry	DEPTH TO WATER
631.01	0.00	TOP OF SEAL
627.01	4.0	TOP OF SANDPACK
626.01	5.0	TOP OF SCREEN
616.01	15.0	BOTTOM OF SCREEN
615.51	15.5	BOTTOM OF WELL
605.01	26.0	BOTTOM OF BOREHOLE

* REFERENCED TO A NATIONAL GEODETIC VERTICAL DATUM

WELL CONSTRUCTION MATERIALS (CIRCLE ONE)

PROTECTIVE CASING	(SS304), SS316, PTFE, PVC OR OTHER:
RISER PIPE ABOVE W.T.	(SS304), SS316, PTFE, PVC OR OTHER:
RISER PIPE BELOW W.T.	SS304, SS316, PTFE, PVC OR OTHER:
SCREEN	(SS304), SS316, PTFE, PVC OR OTHER:

MEASUREMENTS

DIAMETER OF BOREHOLE (in)	10.5 in.
ID OF RISER PIPE (in)	2 in.
PROTECTIVE CASING LENGTH (ft)	NA
RISER PIPE LENGTH (ft)	5 ft.
BOTTOM OF SCREEN TO END CAP (ft)	0.5 ft.
SCREEN LENGTH (1st SLOT TO LAST SLOT)	10 ft.
TOTAL LENGTH OF CASING (ft)	15 ft.
SCREEN SLOT SIZE **	0.010 in.

** HAND-SLOTTED WELL SCREENS ARE UNACCEPTABLE

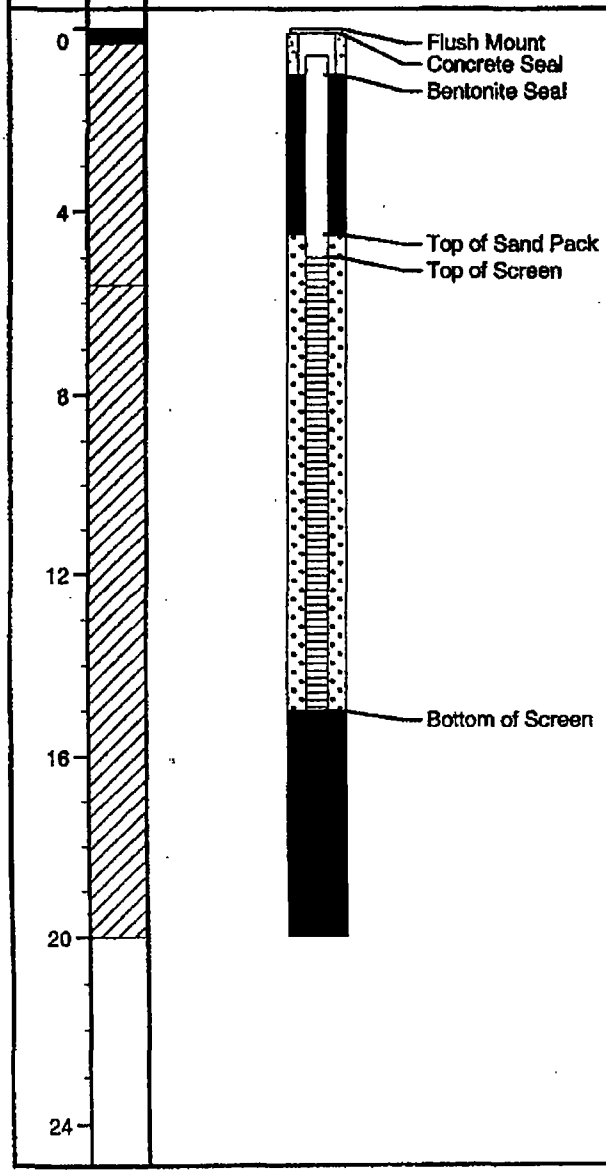
(040125)

ARCADIS

Well Construction Log: MW-8

Project Name:	Detrex	Date Started:	01/03/07	Logger:	Stephen Vasas
Project Number:	SFE04017.0002	Date Completed:	01/03/07	Editor:	Vince Eckert

Depth (feet)	Graphic Log	Well Construction Diagram	Well Construction Details



PROTECTIVE COVER TYPE:
Flush Mount

SURFACE SEAL
Type:
Total Depth:

CASING
Inside Diameter: Schedule 40
Length:
Material: PVC

SEAL
Type:
Top Depth: 1.0
Bottom Depth: 4.5

SCREEN
Type Schedule 40
Inside Diameter: PVC - 2"
Slot Size: 0.010
Top Depth: 5
Bottom Depth: 15

FILTER PACK
Material:
Top Depth:
Bottom Depth:

Drilling Co.:	Drilling Unlimited, Inc.	Filter Placement Method:	Surface
Driller:	Mike and Josh	Seal Placement Method:	Surface
Drilling Method:	Direct Push	Drilling Fluid:	None

ARCADIS

Boring Log: MW-8

Project Name:	Detrex	Date Started:	01/03/07	Logger:	Stephen Vasas
Project Number:	SFE04017.0002	Date Completed:	01/03/07	Editor:	Vince Eckert

Depth (feet)	Blows (/6 in.)	Recovery (Inches)	Sample	PID (PPM)	Graphic Log	Soil Class.	Description
0				0		FILL	ASPHALT and GRAVEL
				0		CL	CLAY, some silt, trace sand, brown, moderate hard, moist
4				0			
				0		CL	CLAY, some silt, gray, very stiff, wet
8				0			
				0			
12				0			
				0			
16				0			
				0			
20							End of Boring
24							

☒ Composite Sample to Lab ■ Grab Sample to Lab ⊞ Sample Not Analyzed

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Josh
Drilling Method: Direct Push
Sampling Method: Geoprobe - MacroCore
Sampling Interval: 2'
Drilling Fluid: None

ARCADIS

Boring Log: MW-9

Project Name: Detrex | Date Started: 04/05/07 | Logger: Stephen Vasas

Project Number: SFE04017.0002 | Date Completed: 04/05/07 | Editor: Keith Thompson

Depth (feet)	Blows (/6 in.)	Recovery (Inches)	Sample	PID (PPM)	Graphic Log	Soil Class.	Description
0		60					Asphalt.
						FILL	FILL, gravel, gray, dry.
						FILL	FILL, asphalt material, dry.
				30		CL	CLAY, some silt, trace sand and gravel, brown, dry, moderate soft, heavy organic debris odor from plant material.
4				30		CL	CLAY, some silt, trace sand and gravel, brown with gray mottles, very stiff, dry, organic debris odor from plant material.
		60		340		CL	CLAY, some silt, trace sand and gravel, increasing brown with gray mottles with depth, very stiff, moist, organic debris odor fro, plant material.
8				570			
		60		1300			Very Soft
12				207			
				180		CL	CLAY, some silt, trace gravel, gray, stiff, wet.
		60				CL	CLAY, some silt, trace gravel, gray, soft at 16' to 16.4', stiff the rest of the length, wet.
16				0			
				0			
20							End of boring.
24							

☒ Composite Sample to Lab ■ Grab Sample to Lab ▥ Sample Not Analyzed

Drilling Co.: Drilling Unlimited, Inc.

Driller: Mike and Josh

Drilling Method: Direct Push

Sampling Method: Geoprobe - MacroCore

Sampling Interval: 2'

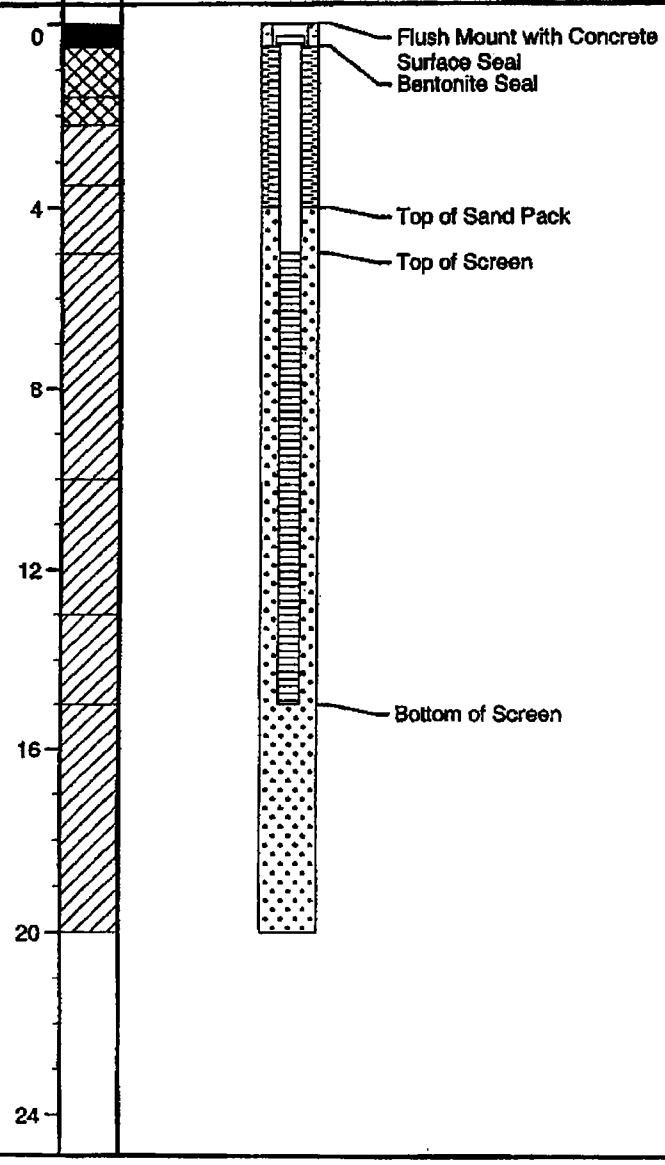
Drilling Fluid: None

ARCADIS

Well Construction Log: MW-9

Project Name:	Detrex	Date Started:	04/05/07	Logger:	Stephen Vasas
Project Number:	SFE04017.0002	Date Completed:	04/05/07	Editor:	Keith Thompson

Depth (feet)	Graphic Log	Well Construction Diagram	Well Construction Details



PROTECTIVE COVER TYPE:
Flush Mount

SURFACE SEAL
Type: Concrete
Total Depth: 0.5'

CASING
Inside Diameter: 2"
Length: 10'
Material: PVC

SEAL
Type: Bentonite
Top Depth: 0.5'
Bottom Depth: 4'

SCREEN
Type PVC
Inside Diameter: 2"
Slot Size: 0.010
Top Depth: 5'
Bottom Depth: 15'

FILTER PACK
Material: Sand
Top Depth: 4'
Bottom Depth: 15'

Drilling Co.:	Drilling Unlimited, Inc.	Filter Placement Method:	
Driller:	Mike and Josh	Seal Placement Method:	
Drilling Method:	Hollow stem auger.	Drilling Fluid:	None

ARCADIS

Boring Log: MW-10

Project Name: Detrex | Date Started: 04/05/07 | Logger: Stephen Vasas

Project Number: SFE04017.0002 | Date Completed: 04/05/07 | Editor: Keith Thompson

Depth (feet)	Blows (/6 in.)	Recovery (inches)	Sample	PID (PPM)	Graphic Log	Soil Class.	Description
0		60		0		FILL	Asphalt.
						FILL	FILL, asphalt rubble.
				1.8			FILL, clay, some silt, little sand, gray-brown, soft, moist.
						FILL	FILL, slag, charcoal rubble, no odor.
4				2		CL	CLAY, some silt, little sand, trace gravel, roots, black , moderate soft, dry.
		60		140		CL	CLAY, some silt, trace sand, trace gravel, brown with gray mottles, moderate stiff, moist.
8				138		ML	SILT, some clay, trace sand, brown with gray mottles, moderate stiff, wet.
		60		1336		ML	SILT, some clay, trace sand, brown with gray mottles, moderate stiff, wet, odor present.
12				226		CL	CLAY, some silt, trace sand, brown with gray mottles, moderate soft, wet.
				40			
		60				CL	CLAY, some silt, trace sand and gravel, gray, stiff, wet.
16				0			
				0			
20							End of boring.
24							

☒ Composite Sample to Lab ■ Grab Sample to Lab ▥ Sample Not Analyzed

Drilling Co.: Drilling Unlimited, Inc.

Driller: Mike and Josh

Drilling Method: Direct Push

Sampling Method: Geoprobe - MacroCore

Sampling Interval: 2'

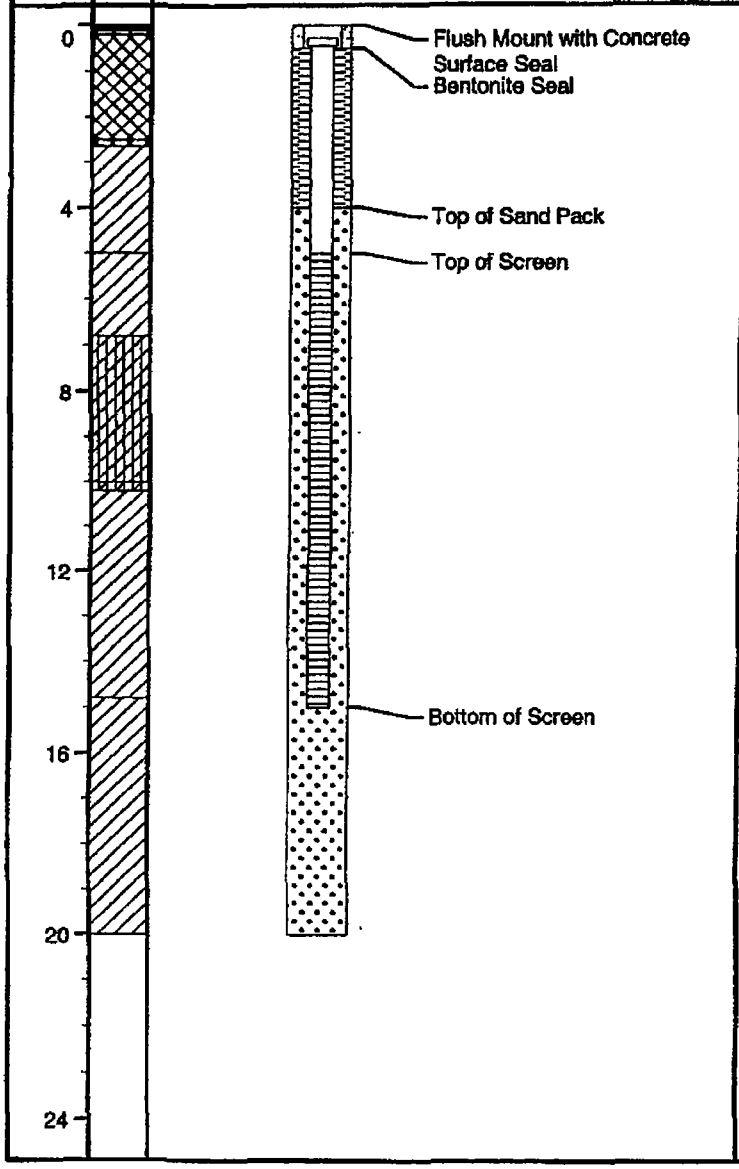
Drilling Fluid: None

ARCADIS

Well Construction Log: MW-10

Project Name:	Detrex	Date Started:	04/05/07	Logger:	Stephen Vasas
Project Number:	SFE04017.0002	Date Completed:	04/05/07	Editor:	Keith Thompson

Depth (feet)	Graphic Log	Well Construction Diagram	Well Construction Details



PROTECTIVE COVER TYPE:
Flush Mount

SURFACE SEAL
Type: Concrete
Total Depth: 0.5'

CASING
Inside Diameter: 2"
Length: 10'
Material: PVC

SEAL
Type: Bentonite
Top Depth: 0.5'
Bottom Depth: 4'

SCREEN
Type PVC
Inside Diameter: 2"
Slot Size: 0.010
Top Depth: 5'
Bottom Depth: 15'

FILTER PACK
Material: Sand
Top Depth: 4'
Bottom Depth: 15'

Drilling Co.:	Drilling Unlimited, Inc.	Filter Placement Method:	Surface
Driller:	Mike and Josh	Seal Placement Method:	Surface
Drilling Method:	Hollow stem auger.	Drilling Fluid:	None

ARCADIS

Soil Boring Log

Boring No.: MW-11

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/14/2010
Date Completed: 06/14/2010

Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Air knife, no recovery.	
6			49.2		0		CLAY, trace silt, little pebble; light brown; trace gray mottling; no plasticity; dry; stiff. (Fill)	
							SILT, trace pebble, little clay; light brown; moist; soft to medium stiff. (Fill)	
7							SAND, trace pebble, trace clay; poorly sorted; brown; moist. (Fill)	
8, 9, 10							SAND, fine to coarse, little to some pebble, little clay; poorly sorted; light brown; no plasticity; moist to wet. (Fill)	
11			60		0		CLAY and SAND, little to some pebble; poorly sorted; light yellowish brown; no plasticity; soft to medium stiff; wet. (Fill)	
12, 13, 14, 15							SAND and PEBBLE, coarse, some clay; poorly sorted; gray; moist. (Fill)	
16			56.4		0		SAND and PEBBLE, coarse, some clay; poorly sorted; brownish gray; wet. (Fill)	
17, 18, 19, 20							CLAY, some silt; gray; high plasticity; very stiff; moist.	
							End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Screened 5 to 15 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOG BORING LOGS.GPJ ARCADIS.GDT 7/20/10

ARCADIS

Soil Boring Log

Boring No.: MW-12

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/14/2010
Date Completed: 06/14/2010
Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Air knife, no recovery.	
6, 7, 8, 9, 10			55.2		0		CLAY, little pebble; orangish brown; trace gray mottling; low plasticity; medium stiff; moist.	
							CLAY, little pebble; orangish brown; trace gray mottling; low plasticity; soft to medium stiff; moist to wet.	
							CLAY, little pebble; orangish brown; trace gray mottling; low plasticity; stiff to very stiff; slightly moist.	
11, 12, 13, 14, 15			57.6		0		CLAY, light brown; low plasticity; soft to medium hard; wet.	
							CLAY, trace pebble; light brown grading to gray with depth; medium plasticity; stiff to very stiff; slightly moist.	
16, 17, 18, 19, 20			56.4		0		CLAY, trace pebble; gray; medium plasticity; stiff to very stiff; slightly moist.	
							End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Screened 5 to 15 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOGS.GPJ ARCADIS.GDT 7/20/10

ARCADIS

Soil Boring Log

Boring No.: MW-13

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/14/2010
Date Completed: 06/14/2010
Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Air knife, no recovery.	
6, 7, 8, 9, 10			57.6		0		CLAY, trace pebble; grayish brown; trace mottling; little plasticity; medium stiff to stiff; moist to wet.	
11, 12, 13, 14, 15			60		0		CLAY, trace coarse sand; light brown; medium plasticity; soft; wet .	
							CLAY, trace pebble; gray; medium plasticity; very stiff; moist.	
16, 17, 18, 19, 20			60		0		CLAY, trace pebble; gray; medium plasticity; medium stiff to stiff; moist to wet.	
							End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Temporary well screened 10 to 20 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOG BORING LOGS.GPJ ARCADIS.GDT 7/20/10

ARCADIS

Soil Boring Log

Boring No.: MW-14

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/14/2010
Date Completed: 06/14/2010
Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Air knife, no recovery.	
6, 7, 8			54		0		CLAY, little pebble, trace wood and rootlets; light brown; trace gray mottling; low plasticity; stiff; slightly moist.	
9, 10							CLAY, little pebble, trace wood and rootlets; light brown; trace gray mottling; low plasticity; medium stiff; moist to wet.	
11			58.8		0		CLAY, little silt, trace pebble; light brown; low plasticity; soft to medium stiff; moist to wet.	
12, 13, 14, 15							CLAY, trace pebble, trace brown shale; gray; medium plasticity; medium stiff to stiff; moist.	
16, 17, 18, 19, 20			57.6		0		CLAY, trace pebble, trace brown shale; gray; medium plasticity; medium stiff to stiff; moist. Note: moisture content decreasing from 17.7 to 19.8 feet. End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Temporary well screened 10 to 20 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOGS.GPJ ARCADIS.GDT 7/20/10

ARCADIS

Soil Boring Log

Boring No.: MW-15

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/15/2010
Date Completed: 06/15/2010

Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Hand auger, no recovery.	
6, 7, 8, 9, 10			57.6		0		CLAY, trace to little pebble; light brown; low plasticity; medium stiff to stiff; moist to wet. Note: trace rock fragments at 8.8 feet.	
11, 12, 13, 14, 15			57.6		0		CLAY, little silt, trace to little pebble; no plasticity; medium stiff to stiff; moist to wet. CLAY, trace pebble; gray; low to medium plasticity; slightly moist to moist.	
16, 17, 18, 19, 20			56.4		0		CLAY, trace pebble; gray; medium plasticity; stiff; slightly moist to moist. End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Temporary well screened 5 to 15 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOG BORING LOGS.GPJ ARCADIS.GDT 7/20/10

ARCADIS

Soil Boring Log

Boring No.: MW-16

Sheet: 1 of 1

Project Name: Detrex Corporation
Project Number: SFE04017.0007.00001
Project Location: Melrose Park, Illinois

Date Started: 06/15/2010
Date Completed: 06/15/2010
Logger: J. Read
Editor: A. Peckens
Weather Conditions:

Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1, 2, 3, 4, 5					0		Hand auger, no recovery.	
6, 7, 8, 9, 10			57.6		0		CLAY, trace pebble; light brown; medium plasticity; moist to wet. Note: soil cracked in dry zones.	
							CLAY, little silt, trace pebble; gray; low to medium plasticity; stiff to very stiff; moist.	
11, 12, 13, 14, 15			60		0		CLAY, trace pebble; gray; medium to high plasticity; soft to stiff; wet to moist.	
16, 17, 18, 19, 20			55.2		0		CLAY, little pebble; gray; no plasticity; very stiff to hard; moist.	
							End boring at 20.0 feet.	

Drilling Co.: Drilling Unlimited, Inc.
Driller: Mike and Sal
Drilling Method: Geoprobe/HSA
Drilling Fluid: None
Remarks: Temporary well screened 10 to 20 feet.

Sampling Method: Direct push
Sampling Interval: 5 feet
Water Level Start:
Water Level Finish:
Converted to Well: ☒ Yes ☐ No
Surface Elev.:
North Coor:
East Coor:

SOIL BORING LOGS.GPJ ARCADIS.GDT 7/20/10

K-9
Melrose Park Ordinances 321 and 509

Municipality: Melrose Park

County: Cook

LPC Number:

OC: 00050801

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

CERTIFICATION OF ORDINANCE #321

I, Barbara Jasinski, the undersigned, do hereby certify that I am duly elected and qualified Village Clerk of the Village of Melrose Park, County of Cook, State of Illinois (the "Village"), and as such official I am the keeper of the records and files of the Village and of the President and Board of Trustees thereof (the "Village Board").

I do further certify that Ordinance #321 was adopted by the President and Board of Trustees of the Village of Melrose Park at a public meeting of the Village Board held November 24, 1997, at the hour of 7:30 p.m., in the First Floor meeting Room of the Police Department, One North Broadway Avenue (Broadway & Main Street), Melrose Park, Illinois 60160.

IN WITNESS WHEREOF, I hereunto affix my official signature and the seal of the Village, this 1rst day of May 2000.

Barbara Jasinski

Barbara Jasinski, Village Clerk

VILLAGE OF MELROSE PARK
COOK COUNTY, ILLINOIS

ORDINANCE NO. 321

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD, FOR THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS.

ADOPTED BY THE
PRESIDENT AND BOARD OF TRUSTEES
OF THE
VILLAGE OF MELROSE PARK

THIS 24TH DAY OF NOVEMBER, 1997

RONALD M. SERPICO, Village President
BARBARA JASINSKI, Village Clerk

Board Of Trustees

CARLOTTA "LOLLIE" ARIOLA
JOHN S. CONTEDUCA
CATHLEEN ITALIA
FRED LAMB
RUBEN LOMELI
JOSEPH McMILLAN

Published by authority of the
President and Board of Trustees
Of the Village of Melrose Park,
Cook County, Illinois on
This 24TH day of November, 1997.

ORDINANCE NO. 321

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD, FOR THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS .

* * * * *

Article I. In General, Sections 01-09

Section 01. Incorporation Clause.
Section 02. Purpose.
Section 03. Invocation of Authority.
Section 04. State Law Adopted.
Section 05-09. Reserved.

Article II. Ground Water As A Potable Water Supply.

Section 10. Use of Groundwater As a Potable Water Supply Prohibited.
Section 11. Exception(s).
Section 12. Penalties.
Section 13. Definitions.

Article III. Savings Clauses, Publication, Effective Date.

Section 14. Headings.
Section 15. Severability.
Section 16. Superseder.
Section 17. Publication.
Section 18. Effective Date.

ORDINANCE NO. 321

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD, FOR THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS.

* * * * *

WHEREAS, the Village of Melrose Park, Cook County, State of Illinois (the "Village") is a duly organized and existing Village created under the provisions of the laws of the State of Illinois, and is now operating under the provisions of the Illinois Municipal Code, and all laws amendatory thereof and supplementary thereto with full powers to enact ordinances for the benefit of the residents of the Village.

WHEREAS, The President and the Board of Trustees (the "Corporate Authorities") of the Village of Melrose Park, County of Cook, State of Illinois, have determined that it is advisable, necessary and in the best interest of the Village to prohibit the use of groundwater as a potable water supply by the installation or use of potable water supply wells or by any other method.

NOW THEREFORE, BE IT ORDAINED by the Village President and the Board of Trustees of the Village of Melrose Park, Cook County Illinois:

ARTICLE I.
IN GENERAL

Section 01. Incorporation Clause.

The parties agree that the above information, contained in the preamble, is hereby incorporated into this ordinance by reference.

Section 02. Purpose.

The purpose of this ordinance is to prohibit the use of groundwater as a potable water supply by the installation or use of potable water supply wells or by any other method.

Section 03. Invocation of authority.

This ordinance is enacted pursuant to the authority granted to this Village by Constitution of the State of Illinois and the Illinois Compiled Statutes.

Section 04. State Law Adopted.

All applicable provisions of the Illinois Compiled Statutes, including the Illinois Municipal Code, as may be amended from time to time, relating to the purposes of this ordinance are hereby incorporated herein by reference.

Sections 05-09. Reserved.

ARTICLE II.
GROUND WATER AS A POTABLE WATER SUPPLY

Section 10. Use of Groundwater as a Potable Water Supply Prohibited.

The use or attempt to use as a potable water supply groundwater from within the corporate limits of the Village of Melrose Park by the installation or drilling of wells or by any other method is hereby prohibited.

Section 11. Exception(s).

After a determination by the Village President, the Village of Melrose Park may use as a potable water supply groundwater from within the corporate limits of the Village of Melrose Park by the installation or drilling of wells or by any other method. This exception only applies for uses that are determined, by the Village President, to be in the best interest of the citizens of the Village of Melrose Park.

Section 12. Penalties.

Any person violating the provisions of this ordinance shall be subject to a fine of up to $ 1,000.00, for each violation.

Section 13. Definitions.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, or any other legal entity, or their legal representatives, agents or assigns.

"Potable water" is any water used for human or domestic consumption, including, but not limited to, water used for drinking, bathing, washing dishes, or preparing foods.

ARTICLE III.
SAVINGS CLAUSES, PUBLICATION, EFFECTIVE DATE

Section 14. Headings.

The headings for the articles, sections, paragraphs and sub-paragraphs of this ordinance are inserted solely for the convenience of reference and form no substantive part of this ordinance nor should they be used in any interpretation or construction of any substantive provisions of this ordinance.

Section 15. Severability.

The provisions of this ordinance are hereby declared to be severable and should any provision, clause, sentence, paragraph, sub-paragraph, section, or part of this ordinance be determined to be in conflict with any law, statute or regulation by a court of competent jurisdiction, said provision shall be excluded and deemed inoperative,

unenforceable, and as though not provided for herein, and all other provisions shall remain unaffected, unimpaired, valid and in full force and effect. It is hereby declared to be the legislative intent of the Board of Trustees that this ordinance would have been adopted had not such unconstitutional or invalid provision, clause, sentence, paragraph, sub-paragraph, section, or part thereof had not been included.

Section 16. Superseder.

All code provisions, ordinances, resolutions and orders, or parts thereof, in conflict herewith, are to the extent of such conflict hereby superseded.

Section 17. Publication.

A full, true and complete copy of this ordinance shall be published in pamphlet form or in a newspaper published and of general circulation within the Village as provided by the Illinois Municipal Code, as amended.

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Section 18. Effective date

This ordinance shall be in full force and effect upon passage, approval and ten (10) days after the publication hereof, as provided by law.

On The Individual Poll And Voice Vote Of The Board Of Trustees:

AYE VOTES:	5
NAY VOTES:	0
ABSTAIN:	0
ABSENT:	1

SO PASSED, ADOPTED, APPROVED AND ENACTED IN AND AT THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS, THIS 24th DAY OF NOVEMBER, 1997 A.D.

APPROVED:

RONALD M. SERPICO,
VILLAGE PRESIDENT

ATTEST:

BARBARA JASINSKI,
VILLAGE CLERK

VILLAGE OF MELROSE PARK CORPORATE SEAL COOK COUNTY, ILL.

Recorded in the Municipal Records: November 24, 1997

Published in pamphlet form on November 25, 1997

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

CERTIFICATION OF ORDINANCE #509

I, Barbara Jasinski, the undersigned, do hereby certify that I am duly elected and qualified Village Clerk of the Village of Melrose Park, County of Cook, State of Illinois (the "Village"), and as such official I am the keeper of the records and files of the Village and of the President and Board of Trustees thereof (the "Village Board").

I do further certify that Ordinance #509 was adopted by the President and Board of Trustees of the Village of Melrose Park at a public meeting of the Village Board held April 24, 2000, at the hour of 7:30 p.m., in the First Floor meeting Room of the Police Department, One North Broadway Avenue (Broadway & Main Street), Melrose Park, Illinois 60160.

IN WITNESS WHEREOF, I hereunto affix my official signature and the seal of the Village, this 27th day of April 2000.

Barbara Jasinski

Barbara Jasinski, Village Clerk

VILLAGE OF MELROSE PARK
COOK COUNTY, ILLINOIS

ORDINANCE NO. 509

AN ORDINANCE AUTHORIZING AND APPROVING THE ADOPTION OF A MEMORANDUM OF UNDERSTANDING BETWEEN THE VILLAGE OF MELROSE PARK AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY IN CONNECTION WITH ESTABLISHING INSTITUTIONAL CONTROLS FOR THE USE OF GROUND WATER AS A POTABLE WATER SUPPLY IN THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS.

ADOPTED BY THE
PRESIDENT AND BOARD OF TRUSTEES
OF THE
VILLAGE OF MELROSE PARK

THIS 24TH DAY OF APRIL, 2000

RONALD M. SERPICO, Village President
BARBARA JASINSKI, Village Clerk

Board Of Trustees

CARLOTTA "LOLLIE" ARIOLA
JOHN S. CONTEDUCA
CATHLEEN COSSIDENT ITALIA
THOMAS KLEIN
FRED LAMB
RUBEN LOMELI

Published by authority of the
President and Board of Trustees
Of the Village of Melrose Park,
Cook County, Illinois on
This 25th day of April, 2000.

ORDINANCE NO. 509

AN ORDINANCE AUTHORIZING AND APPROVING THE ADOPTION OF A MEMORANDUM OF UNDERSTANDING BETWEEN THE VILLAGE OF MELROSE PARK AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY IN CONNECTION WITH ESTABLISHING INSTITUTIONAL CONTROLS FOR THE USE OF GROUND WATER AS A POTABLE WATER SUPPLY IN THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS.

* * * * *

WHEREAS, the Village of Melrose Park, Cook County, State of Illinois ("the Village") is a duly organized and existing Village created under the provisions of the laws of the State of Illinois, and is now operating under the provisions of the Illinois Municipal Code, and all laws amendatory thereof and supplementary thereto with full powers to enact ordinances for the benefit of the residents of the Village; and

WHEREAS, the Village President, the Honorable Ronald M. Serpico, the Village Clerk, the Honorable Barbara Jasinski, having taken office on May 1, 1997 and the Village Board of Trustees, the Honorable Carlotta "Lollie" Ariola, John S. Conteduca, Cathleen Cossident Italia, Fred Lamb, and Ruben Lomeli, having taken office on May 1, 1999, and Trustee Thomas Klein, having been appointed and sworn into office on March 27, 2000, respectively, constitute the duly elected, appointed, qualified and acting officials of the Village; and

WHEREAS, at the President and Board of Trustees Meeting of November 24, 1997, the Corporate Authorities of the Village of Melrose Park adopted Ordinance No. 321, entitled "An Ordinance Prohibiting the Use of Groundwater as a Potable Water Supply by the Installation or Use of Potable Water Supply Wells or by any other Method..."; and

WHEREAS, the effect of Ordinance No. 321 was to prohibit the use of groundwater as a potable water supply within the Village of Melrose Park, with the only exception being that the Village of Melrose Park may utilize groundwater as a potable water supply should certain emergency circumstances arise; and

WHEREAS, in order to ensure the long-term integrity of Ordinance No. 321 as an environmental institutional control and to minimize any risk to human health and the environment from contamination, the Village of Melrose Park desires to enter into a Memorandum of Understanding (hereinafter "MOU") with the Illinois Environmental Protection Agency (hereinafter "IEPA"); and

WHEREAS, pursuant to said MOU, the Village shall assume certain responsibilities, pursuant to 35 Ill.Adm. Code 742.1015(i), with respect to monitoring and siting public water supply wells, the specific responsibilities of the Village are more particularly described in said MOU, a copy of which is attached hereto as Exhibit A; and

WHEREAS, the President and the Board of Trustees (the "Corporate Authorities") of the Village of Melrose Park, County of Cook, State of Illinois, have determined that the adoption of the Memorandum of Understanding between the Village and the Illinois Environmental Protection Agency is necessary, advisable and in the best interest of the Village and its residents;

NOW THEREFORE, BE IT ORDAINED by the Village President and the Board of Trustees of the Village of Melrose Park, Cook County, Illinois:

ARTICLE I.
IN GENERAL

Section 01. Incorporation Clause.

The President and Board of Trustees of the Village (the "Village Board") hereby find that all of the recitals hereinbefore stated as contained in the preambles to this Ordinance are full, true and correct and does hereby, by reference, incorporate and make them part of the Ordinance as legislative findings.

Section 02. Purpose.

The purpose of this Ordinance is to authorize and approve the adoption and execution of a Memorandum of Understanding between the Village and the Illinois Environmental Protection Agency, regarding the use of Ordinance No. 321 as an environmental institutional control.

Section 03. Invocation of authority.

This ordinance is enacted pursuant to the authority granted to this Village by Constitution of the State of Illinois and the Illinois Compiled Statutes.

Section 04. State Law Adopted.

All applicable provisions of the Illinois Compiled Statutes, including the Illinois Municipal Code, as may be amended from time to time, relating to the purposes of this ordinance are hereby incorporated herein by reference.

Sections 05-09. Reserved.

ARTICLE II.
AUTHORIZATION OF MEMORANDUM OF UNDERSTANDING

Section 10.00 Approval & Adoption of Memorandum of Understanding.

That the terms and provisions of the Memorandum of Understanding between the Village and the Illinois Environmental Protection Agency, regarding the use of Ordinance No. 321 as an environmental institutional control, are hereby approved in substantially the same form as attached hereto as Exhibit A, with such insertions, omissions and changes as shall be approved by the Village President and the Village Attorney or other members of the governing body of the Village executing the same.

Section 11.00 Authorization for Execution of MOU.

The Village President is hereby authorized and directed to execute, and the Village Clerk, if necessary, is hereby authorized and directed to attest and countersign the Memorandum of Understanding and any related exhibits attached thereto, whether or not such documents are attached to this Ordinance, and the Village Clerk, if necessary, is also authorized to affix the seal of the Village to such documents.

Section 12.00 Other Actions Authorized.

The Village Clerk is hereby authorized and directed to prepare and certify the documents referenced in Section III of the MOU and the officers, employees and/or agents of the Village shall take all action necessary or reasonably required to carry out, give effect to and consummate the transactions contemplated by this Ordinance and to take all action necessary in conformity therewith, including, without limitation, the execution and delivery of any documents required to be delivered in connection with this Ordinance and the MOU.

ARTICLE III.
SAVINGS CLAUSES,
PUBLICATION, EFFECTIVE DATE

Section 13.00 Headings.

The headings for the articles, sections, paragraphs and sub-paragraphs of this Ordinance are inserted solely for the convenience of reference and form no substantive part of this Ordinance nor should they be used in any interpretation or construction of any substantive provisions of this Ordinance.

Section 14.00 Severability.

The provisions of this Ordinance are hereby declared to be severable and should any provision, clause, sentence, paragraph, sub-paragraph, section, or part of this Ordinance be determined to be in conflict with any law, statute or regulation by a court of competent jurisdiction, said provision shall be excluded and deemed inoperative, unenforceable, and as though not provided for herein, and all other provisions shall remain unaffected, unimpaired, valid and in full force and effect. It is hereby declared to be the legislative intent of the Board of Trustees that this Ordinance would have been adopted had not such unconstitutional or invalid provision, clause, sentence, paragraph, sub-paragraph, section, or part thereof had not been included.

Section 15.00 Superseder.

All code provisions, ordinances, resolutions and orders, or parts thereof, in conflict herewith, are to the extent of such conflict hereby superseded.

Section 16.00 Publication.

A full, true and complete copy of this Ordinance shall be published in pamphlet form or in a newspaper published and of general circulation within the Village as provided by the Illinois Municipal Code, as amended.

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Section 17.00 Effective date

This Ordinance shall be in full force and effect upon passage and approval, as provided by the Illinois Municipal Code, as amended.

On The Individual Poll And Voice Vote Of The Board Of Trustees:

AYE VOTES: Trustee Ariola, Trustee Conteduca, Trustee Lamb, Trustee Lomeli, Trustee Klein

NAY VOTES:

ABSTAIN:

ABSENT: Trustee Italia

SO PASSED, ADOPTED, APPROVED AND ENACTED IN AND AT THE VILLAGE OF MELROSE PARK, COUNTY OF COOK, STATE OF ILLINOIS, THIS TWENTY-FOURTH DAY OF APRIL, 2000 A.D.

APPROVED:

RONALD M. SERPICO,
VILLAGE PRESIDENT

ATTEST: Barbara Jasinski
Barbara Jasinski
Village Clerk

(SEAL)

Recorded in the Municipal Records: April 24, 2000

Published in pamphlet form: April 25, 2000

MEMORANDUM OF UNDERSTANDING BETWEEN THE VILLAGE OF MELROSE PARK AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY REGARDING THE USE OF A LOCAL GROUNDWATER/WATER WELL ORDINANCE AS AN ENVIRONMENTAL INSTITUTIONAL CONTROL

I. PURPOSE AND INTENT

A. This Memorandum of Understanding (hereinafter "MOU") entered into by and between the Village of Melrose Park and the Illinois Environmental Protection Agency (hereinafter "Illinois EPA") is entered into for the purpose of satisfying the requirements of 35 Ill.Adm. Code 742.1015 for the use of groundwater or water well ordinances as environmental institutional controls. The Illinois EPA has reviewed the groundwater or water well ordinance of the Village of Melrose Park (a copy of which is attached hereto as "Exhibit A") and determined that the Ordinance prohibits the use of groundwater for potable purposes and the installation and use of new potable water supply wells by private entities but does not expressly prohibit those activities by the Village of Melrose Park itself. In such cases, 35 Ill.Adm. Code 742.1015(a) provides that the unit of local government may enter into an MOU with the Illinois EPA to allow the use of the Ordinance as an institutional control.

B. The intent of this Memorandum of Understanding is to specify the responsibilities that must be assumed by the Village of Melrose Park to satisfy the requirements for MOUs as set forth at 35 Ill.Adm. Code 742.1015(i).

II. DECLARATIONS AND ASSUMPTION OF RESPONSIBILITY

In order to ensure the long-term integrity of the groundwater/water well ordinance as an environmental institutional control and that risk to human health and the environment from contamination left in place in reliance on the groundwater/ water well ordinance is effectively managed; the Village of Melrose Park hereby assumes the following responsibilities pursuant to 35 Ill.Adm. Code 742.1015(i):

A. The Village of Melrose Park will notify the Illinois EPA Bureau of Land of any proposed ordinance changes, in connection with its well ordinance or this MOU, and notify the Illinois EPA Bureau of Land of any requests for variance that would impact or otherwise affect the intent of the Village's well ordinance and/or this MOU, at least thirty (30) days prior to the date the Village of Melrose Park is scheduled to take action on the proposed change or request (35 Ill.Adm. Code 742.1015(i)(4));

B. The Village of Melrose Park will maintain a registry of all sites within its Corporate Limits that have received "No Further Remediation" determinations from the Illinois EPA (35 Ill.Adm. Code 742.1015(i)(5)). In an effort to assist the Village of Melrose Park with maintaining said registry, the Illinois EPA shall forward to the Village of Melrose Park copies of any and all Illinois EPA letters, communications, or the like in which a "No Further Remediation" determination has been made by the Illinois EPA with respect to any real estate within the Corporate Limits of the Village of Melrose Park.

C. The Village of Melrose Park will review the registry of sites established under paragraph II. B prior to siting public potable water supply wells within the Corporate Limits of the Village of Melrose Park (35 Ill.Adm. Code 742.1015(i)(6)(A));

D. Prior to siting public potable water supply wells and/or using potable water from any such well, the Village of Melrose Park will determine whether the potential source of potable water has been or may be affected by contamination left in place at the sites tracked and reviewed under paragraphs II.B. and C (35 Ill.Adm. Code 742.1015(i)(6)(B)); and

E. The Village of Melrose Park will take action as necessary to ensure that the potential source of potable water is protected from contamination or treated before it is used as a potable water supply (35 Ill.Adm. Code 742.1015(i)(6)(C)).

NOTE: Notification under paragraphs II A and II B above or other communications concerning this MOU should be directed to:

If to the Illinois EPA:

Manager, Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62794-9276

If to the Village of Melrose Park:

Village Attorney
Village of Melrose Park
1000 N. 25th Avenue
Melrose Park, Illinois 60160

III. SUPPORTING DOCUMENTATION

The following documentation is required by 35 Ill.Adm. Code 742.1015(i) and is attached to this MOU:

A. Attachment A: A copy of Village of Melrose Park Ordinance No. 321, entitled "An Ordinance Prohibiting the Use of Groundwater as a Potable Water Supply by the Installation or Use of Potable Water Supply Wells or by any Other Method, for the Village of Melrose Park, County of Cook, State of Illinois." A certificate of the Village Clerk is attached thereto certifying that said Ordinance, at the time of the adoption of this MOU, is a valid legislative enactment and is in full force and effect in the Village of Melrose Park. (35 Ill.Adm. Code 742.1015(i)(3));

B. Attachment B: Certificate of the Village Clerk certifying that said Ordinance No. 321 is applicable everywhere within the Corporate Limits of the Village of Melrose Park (35 Ill.Adm. Code 742.1015(i)(2));

C. Attachment C: A Certified Copy of Village of Melrose Park Ordinance No. 509, entitled "An Ordinance Authorizing and Approving the Adoption of a Memorandum of Understanding between the Village of Melrose Park and the Illinois Environmental Protection Agency In Connection with Establishing Institutional Controls for the Use of Ground Water as a Potable Water Supply in the Village of Melrose Park, County of Cook, State of Illinois."

IN WITNESS WHEREOF, the lawful representatives of the parties hereto have caused this MOU to be signed, in counterpart, as follows:

FOR: THE VILLAGE OF MELROSE PARK

BY: _____ DATE: 5/1 -2000

Ronald M. Serpico
Village President

FOR: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY:

BY: _____ DATE: 5/22 -2000

(Name and title of signatory)
Mgr, DRM

ARCADIS

ARCADIS
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248.994.2240
Fax 248.994.2241

MEMO

To:
Ms. Amy Boley
Environmental Geologist
Illinois Environmental Protection Agency
Amy.boley@illinois.gov
(217) 558-4716

Copies:
Ms. Takako Halteman, Illinois Environmental Protection Agency
Mr. David Craig, Detrex Corporation

From:
Stephen Vasas, P.G.
Betty Locey, PhD, DABT

Date:
May 12, 2009

ARCADIS Project No.:
SFE04017.04.01

Subject:
Updated Water Well Survey Text, Table and Figure

Ms. Boley,

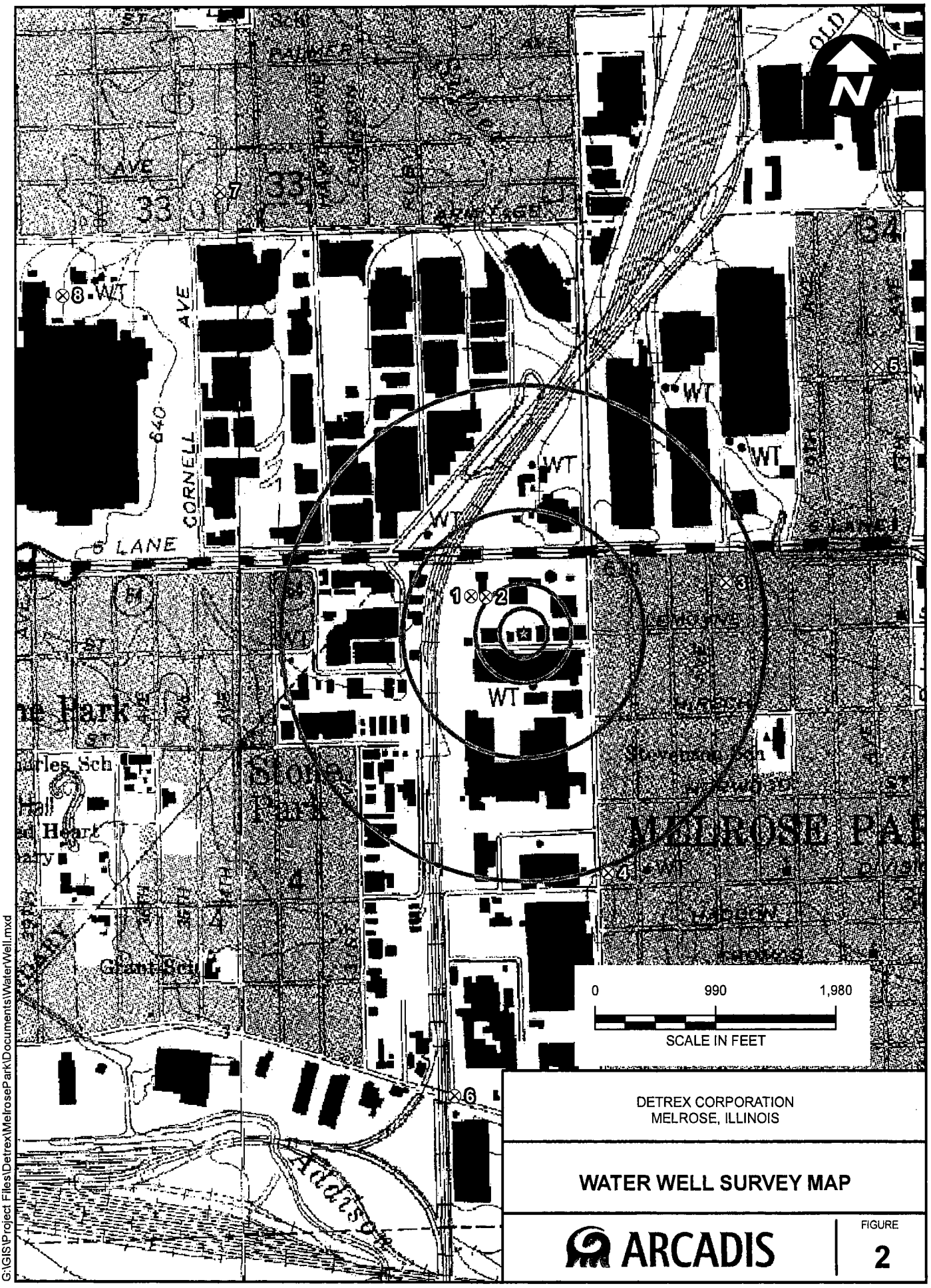
The following text replaces second bullet of Section 2.4 on page 10 of ARCADIS' May 5, 2008 *Phase III Summary of Environmental Conditions Report for Detrex Corporation Facility Located in Melrose Park, Illinois*. The attached Table and Figure replace the Table and Figure from Appendix C of the same report.

- A water well survey completed by ARCADIS performed in 2003 and confirmed in 2009 identified four private wells within approximately 2,500 feet of the site. One well, identified as IHB RR #4 is approximately 600 feet from the site, another well, which the Illinois State Well Survey (ISWS) identified as IHB #4, is located approximately 400 feet from the site, and is a re-reporting of the IHB RR#4 well in a different location. The IHB RR#4 and IHB#4 wells are both reported as being used for industrial purposes and are not potable wells. A third well, identified as Amlings Flowerland, is located approximately 1,500 feet away and is not used for potable purposes. The fourth well is located about 2,050 feet away from the site and is a City of Melrose Park Well that is no longer in use and is not likely to be used in the future. The Table and Figure include four wells that were identified in the survey that are located more than 2,500 feet from the site for completeness. These wells are not addressed further because of their distance from the site. The well survey details are provided in Appendix C.

If you have any questions, please feel free to contact Betty Locey at (248) 994-2263.

Table C-1. Water Production Well Table
Detrex Corporation
Melrose Park, Illinois

Number	Owner	Depth (feet)	Approximate Distance from Site (feet)	Set Back Zone (feet)
1	Indiana Harbor Belt RR	2007	600	200
2	I.H.B. #4	2007	400	200
3	Amlings Flowerland	225	1,500	200
4	Melrose Park (inactive)	2117	2,050	200-1000
5	Orlando Pasqual	166	3,379	200
6	Richardson Co	1960	3,643	200



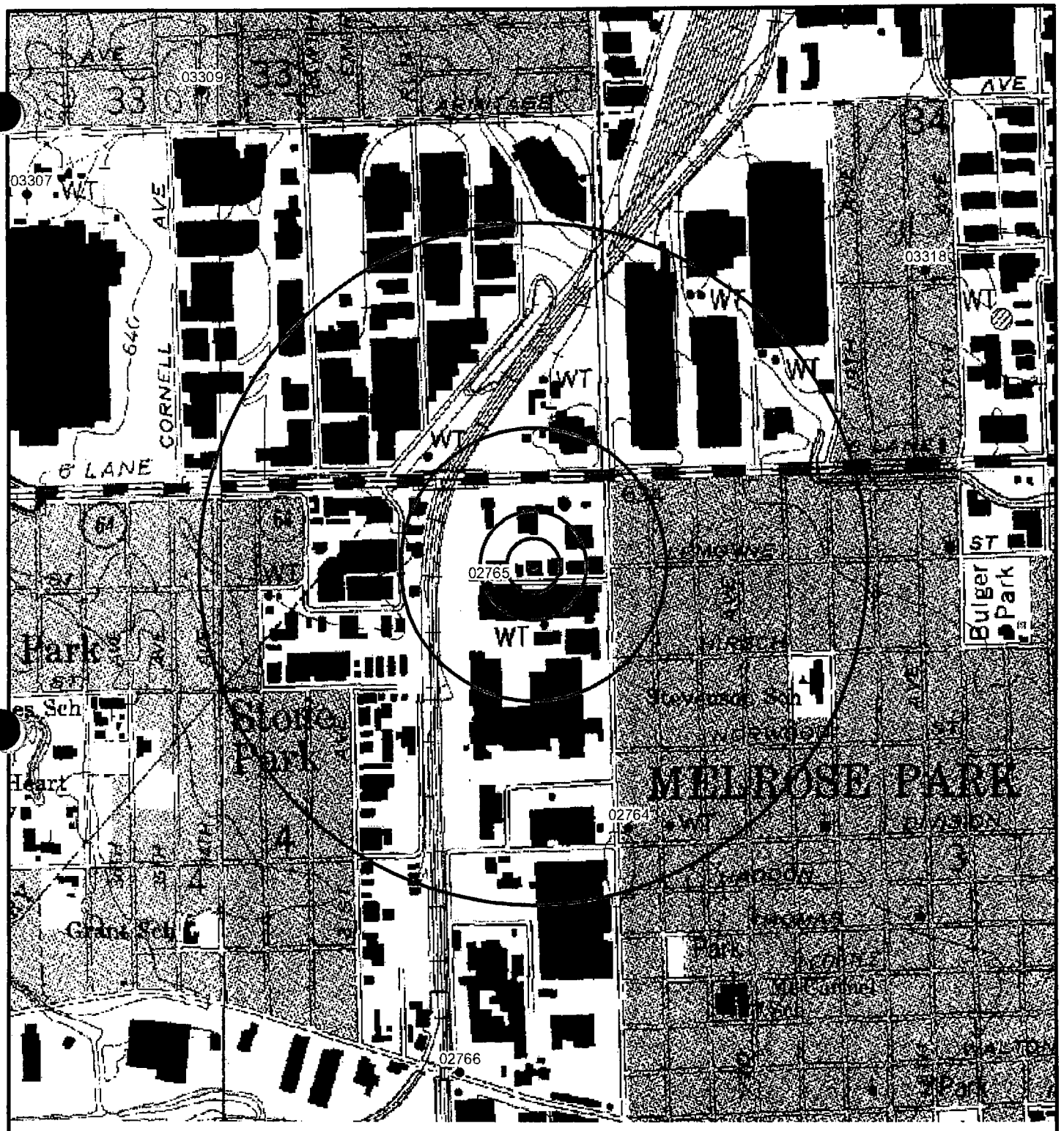
DETREX CORPORATION
MELROSE, ILLINOIS

WATER WELL SURVEY MAP

ARCADIS

FIGURE
2

CITY:NOVI GROUP:ENV DB: PIC: PM: TM: TR:
PROJECT NUMBER:
G:\GIS\Project Files\Detrex\MelrosePark\Documents\WaterWell.mxd



1,000 500 0 1,000 2,000 Feet

Topographical Map Source: United States Geological Survey 7.5 minute Digital Raster Graphics. Quadrangles used: Elmhurst, IL; 1993, and River Forest, IL; 1993.

N

Legend

- Site Location
- ISGS Wells

Source: Source Water Assessment Program (SWAP) for Illinois website. Information provided by USGS, ISGS, and IEPA. http://il.water.usgs/factsheets

ArcGIS - Arcinfo 8.3

copyright © 2003

ARCADIS
35 East Wacker Drive, Suite 1000
Chicago, IL 60601
Tel (312)263-6703 Fax (312)263-7897

Map Date:	File Name:	File Location:	Produced By:	Checked By:	Project Manager:
03/15/2004	WaterWells.mxd	G:/GIS/Projects/Detrex/MelrosePark/	M. Elsaman	S. Vasas	PM

Detrex Corporation

Water Well Survey Map

Melrose Park, Illinois

Dept. Manager:	Geodatabase:
DM	Detrex.mdb
Project Number:	Figure:
SF003040.0001	2

Table C-1. Water Production Well Table
Detrex
Melrose Park, Illinois

Number	Well ID	Owner	Depth (feet)	Approximate Distance from Site (feet)	Set Back Zone (feet)
1	02765	Indiana Harbor Belt RR	2007	898	200
2	02764	Melrose Park (inactive)	2117	1,742	200-1000
3	03318	Orlando Pasqual	166	3,379	200
4	02766	Richardson Co	1960	3,643	200

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois State Water Survey

Main Office • 2204 Griffith Drive • Champaign, IL 61820-7495 • Tel (217) 333-2210 • Fax (217) 333-6540
Peoria Office • P.O. Box 697 • Peoria, IL 61652-0697 • Tel (309) 671-3196 • Fax (309) 671-3106
Groundwater Section • Tel (217) 333-4300 • Fax (217) 244-0777

SWS

March 9, 2004

RECEIVED
MAR 2 2 2004
ARCADIS

Mr. Mark Eiseman
ARCADIS Geraghty & Miller
35 E. Wacker Drive, Suite 1000
Chicago, IL 60601

RE: SF003040.1

Dear Mr. Eiseman:

As you requested during our telephone conversation on March 8, we are enclosing printouts from our Private Well Database and Public, Industrial, Commercial Survey (PICS) Database for the following locations in Cook County:

Township	Range	Sections
39 North	12 East	3, 4
40 North	12 East	33, 34

No available information is indicated on the printout by the statement "0 records were found for the specified locations." Also enclosed are explanations of the Illinois State Water Survey Private Well and PICS Databases.

The data included in the Private Well Database are those non-municipal wells which are known to the Illinois State Water Survey, and the PICS Database is an inventory of municipal well information and large industrial groundwater users. We may not have a copy of well records for these groundwater users.

The enclosed statement reflects the charges for this request which include a $35.00 query fee for private well information, a $35.00 query fee for PICS information, and a $0.10 per page charge for 13 pages, plus a $5.00 shipping and handling fee, totaling $76.30.

If you have any questions or if we can be of further assistance, please call.

Sincerely,

Susie Casey

Susie Dodd-Casey
Associate Supportive Scientist
Groundwater Section
Phone: (217) 333-9043

sdc/psl
Enclosures as stated

Printed on recycled paper

ILLINOIS STATE WATER SURVEY
2204 Griffith Drive
Champaign, IL 61820-7495
(217) 333-4300
Fax: (217) 244-0777

INVOICE/ STATEMENT

SOLD TO:
Mark Eiseman
ARCADIS Geraghty & Miller
35 E. Wacker Drive, Suite 1000
Chicago, IL 60601l

INVOICE NUMBER: GW04-345
INVOICE DATE: March 16, 2004
CUSTOMER REF. NO.: SF003040.1

SALES PERSON: sdc

SHIP TO:

DESCRIPTION	AMOUNT
Private Well Database Query	$35.00
PICS Database Query	$35.00
Page charge for 13 pages @ $0.10	$1.30
PAID	
SUBTOTAL	$71.30
S & H	$5.00
TOTAL DUE	**$76.30**

MAKE CHECK PAYABLE TO: UNIVERSITY OF ILLINOIS -- IL State Water Survey
Attention: Administration
NET 30 DAYS
Please return *COPY* with payment

For Accounting Use Only: Credit Acct. #1-3-60977-002, Dept. G (Fund 301750 740005 740018 A02)

ILLINOIS STATE WATER SURVEY
PICS DATABASE EXPLANATION

SWS ID	ISWS Facility ID Number
NAME	Facility Name
WELL #	ISWS Point Source Well/Intake Number
STATUS	Point Source Status of Well/Intake A = Abandoned - no longer in existence, no affidavit on file, or do not know if it has been filled in C = Capped - cap attached to top D = Disconnected - disconnected from system E = Emergency - available for standby use I = In Use - produces major portion of water O = Observation - used for water level measurements S = Sealed - filled in U = Unused - exists but not used
FIPS	County Code Number
TWN	Civil Township
RNG	Range
SEC	Section
PLOT	10-acre Plot Location within the Section
DEPTH	Depth (well to nearest ft)
TYPE LOG	D = Driller's log O = Other X = Chemical C = Correlated log S = Sample study log - = Log not available
YEAR	Year Point Source Initially Constructed
DRILLER	Well Drilling Contractor of Well

May 2002

Tuesday, March 9, 2004

County: COOK

Township: 39n

Range: 12e

Sections: 03,04

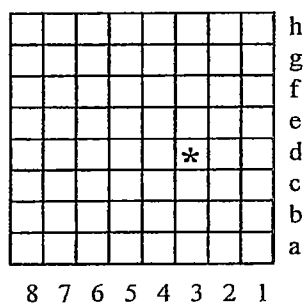
Records found: 4

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey(ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

Tuesday, March 9, 2004

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
33734	031					RICHARDSON PLASTIC CO #2	GEIGER	08/00/1940	1960	ORG	IC		BR			
33735	031					RICHARDSON PLASTIC CO #1		00/00/0000	400	CO	IC		BR			
33719	031					I.H.B. #4		00/00/1925	2007	OG	IC		BR			
33738	031					SACRED HEART SEMINARY	FEUERBORN	00/00/1940	250	CO	SC		BR			

Tuesday, March 9, 2004

County: COOK

Township: 39n

Range: 12e

Sections: 03,04

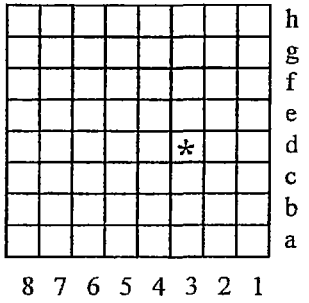
Records found: 2

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: Please cite the Illinois State Water Survey's PICS (Public-Industrial-Commercial) Database in all publications based wholly or partially on this information.

Note: The data in the PICS Database is a listing of municipal and commercial wells which are known to the Illinois State Water Survey(ISWS). This information was initially entered from public water supply data and supplemented with the Illinois Water Inventory Project data. This database is updated as additional information is received and verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

Tuesday, March 9, 2004

SWS ID		WELL #	STATUS	FIPS	TWN	RNG	PLOT	DEPTH	YEAR SEALED	TYPE LOG	YEAR	DRILLER
03191860	MELROSE PARK	3	A	031						D	1928	WM H. CATER & CO
03193030	STONE PARK	1	A	031						O	1942	W. J. WENTY

Tuesday, March 9, 2004

County: COOK

Township: 40n

Range: 12e

Sections: 33,34

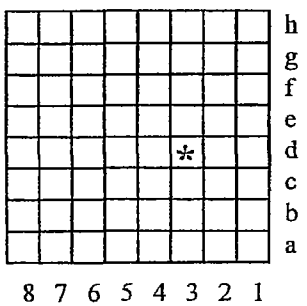
Records found: 98

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

Publication: Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey(ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.

This data cannot be resold or redistributed. The Illinois State Water Survey must be acknowledged in any use of this material.



Location of a 10-acre-plot within a section:

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Tuesday, March 9, 2004

WID	FLG	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
33974	031					C GEFELLER	ITEN	04/00/1940	157	OG	DO		BR			
33975	031					FRED STAEHLE	ITEN	09/00/1940	148	OG	DO		BR			
33976	031					J BOKSA	ITEN	06/15/1940	154	OG	DO		BR			
33977	031					GIFFOIL	ITEN	05/13/1940	191	OG	DO		BR			
33978	031					C DETTLING	ITEN	11/00/1940	185	OG	DO		BR			
33979	031					L K GRANT	SMITH	10/00/1940	151	OG	DO		BR			
33980	031					R S HOUSTON	SMITH	05/00/1941	145	OG	DO		BR			
33981	031					JOHN T AMOUR	SMITH	09/01/1940	135	OG	DO		BR			
33982	031					STEVENS	SMITH	07/00/1940	225	OG	DO		BR			
33983	031					J SENUK & JOS SCZELALDKO	MARSALEK	00/00/1940	144	OG	DO		BR			
33984	031					MAX SHUKA	MARSALEK	00/00/1940	145	OG	DO		BR			
33985	031					PEDERSON	MARSALEK	00/00/1940	90	OG	DO		BR			
33986	031					AMUNDSEN	MARX	00/00/1941	110	OG	DO		BR			
33987	031					B CROWE	MARX	02/02/1940	106	OG	DO		BR			
33988	031					KORNPOINTER	MORRIS	08/08/1941	220	OG	DO		BR			

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
33989	031					DAVIS & MOORE	MORRIS	07/08/1940	175	OG	DO		BR			
33990	031					A HEITMAN		00/00/1840	90	OG	DO		BR			
33991	031					DR WITT	HOFFMAN	10/25/1941	148	OG	DO		BR			
33992	031					J AIKENS	HARTMAN	12/00/1940	200	OG	DO		BR			
33993	031					W PARIZEK	MARX	08/00/1941	142	OG	DO		BR			
33994	031					E MOWER	HOETZER	00/00/1939	145	OG	DO		BR			
33995	031					HENERY PLASS	ITEN	00/00/0000		O	DO		BR			
33996	031					L FORBES	HARTMAN	05/00/1940	185	OG	DO		BR			
33997	031					GEO A MOLDENHAUER		00/00/1910	125	OG	DO		BR			
33998	031					GEORGE VECKERT	EITEN	05/00/1939	168	OG	DO		BR			
33999	031					THATCHER	MORRISS	00/00/1916	180	OG	DO		BR			
34000	031					NICK COLOMBO	MORRISS	00/00/1940	160	OG	DO		BR			
34001	031					T.CONLIN	MORRISS	05/31/1940	145	OG	DO		BR			
34002	031					DRETSCHNERDER	MORISS	09/05/1940	135	OG	DO		BR			
34003	031					J WILCOX	STRONG	00/00/0000		OG	DO		BR			

Tuesday, March 9, 2004

WID	Fm	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
34004	031					MUELLER	STRONG	00/00/1938		OG	DO		BR			
34005	031					BOWERMAN	MORRISS	00/00/1938	135	OG	DO		BR			
34006	031					REGIS	MORRISS	00/00/1938	135	OG	DO		BR			
34007	031					HENDERSON	MORISS	08/13/1940	148	OG	DO		BR			
34008	031					LUCKOW	MORRIS	08/28/1940	145	OG	DO		BR			
34009	031					FABIS	MORRISS	00/00/1938	135	OG	DO		BR			
34010	031					DR CHANT	MORRIS	05/12/1941	135	OG	DO		BR			
34011	031					DOMENICKI	MORRISS	00/00/1938	130	OG	DO		BR			
34012	031					WM VEBEL	HARTMAN	00/00/1941	191	OG	DO		BR			
34013	031					C RUPPERT	MARX	04/00/1940	195	OG	DO		BR			
34014	031					M SEIGEL	HARTMAN	06/00/1940	197	OG	DO		BR			
34015	031					J DOHENY	HARTMAN	03/00/1941	180	OG	DO		BR			
34016	031					ANTHONY AMERISE	MORRIS	05/08/1940	183	OG	DO		BR			
34017	031					REAGAN	HARTMAN	00/00/1941	225	OG	DO		BR			
34018	031					J E TIERNEY	MARX	05/00/1940	146	OG	DO		BR			

Tuesday, March 9, 2004

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
34019	031					CONDRATH	SMITH	06/00/1941	179	OG	DO		BR			
34020	031					B BENDER	MORRIS	11/15/1940	193	OG	DO		BR			
34021	031					BYRD	MORRIS	09/16/1940	175	OG	DO		BR			
34022	031					RUTKAS	MORRIS	06/27/1941	150	OG	DO		BR			
34023	031					H MATHEUS	HARTMAN	10/00/1940	165	OG	DO		BR			
34024	031					S TRYBROS	MORRIS	03/00/1941	185	OG	DO		BR			
34025	031					W SCHOOTH	MORRIS	07/09/1941	155	OG	DO		BR			
34026	031					W H SPRIESTERSBACH	MORRIS	01/00/1941	236	OG	DO		BR			
34027	031					JOHN WEGBARZ	MORRIS	11/12/1941	164	OG	DO		BR			
34028	031					H A LANGE	MARX	00/00/1941	195	OG	DO		BR			
34029	031					R PETRIET	MARX	06/00/1940	142	OG	DO		BR			
34030	031					GEORGE HOFFMAN	MARX	08/00/1940	127	OG	DO		BR			
34031	031					R HAYDEN	MORRIS	09/21/1940	167	OG	DO		BR			
34032	031					J LOSTUTTER	MORRIS	07/00/1940	165	OG	DO		BR			
34033	031					KOWALSKI	HOFFMAN	07/18/1941	185	OG	DO		BR			

Tuesday, March 9, 2004

WID	[illegible]	TWN	RNG	SEC	PLOT	OWNER	DRILLER	[illegible]	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUM[illegible] LVL	[illegible]UMP GPM
34034	031					GEORGE GARR	MARX		00/00/1940	171	OG	DO		BR			
34035	031					WM BECKER	HOFFMAN		05/00/1941	183	OG	DO		BR			
34036	031					BELLCHAMGER	HARTMAN		00/00/1941	195	OG	DO		BR			
34037	031					CARL HOENEMANN	SMITH		06/00/1941	172	OG	DO		BR			
34038	031					GRRACCE	MORRIS		12/13/1942	202	OG	DO		BR			
34039	031					JOSEPH AKRE	HARTMAN		11/00/1940	140	OG	DO		BR			
34040	031					FRANK LEATH	LEATH		04/00/1941	20	OG	DO		UN			
34041	031					GLENN DROESE	MORRIS		08/00/1940	185	OG	DO		BR			
34042	031					RALPH KELLEY	HOFFMAN		09/00/1941	190	OG	DO		BR			
34043	031					W BURKE	MORRIS		08/00/1941	205	OG	DO		BR			
34044	031					MRS L B VINCENT	HARTMAN		01/00/1940	197	OG	DO		BR			
34045	031					WILLIAM WODRICH	MORRISS		11/00/1940	194	OG	DO		BR			
34046	031					PHILIP MISKE	HOFFMAN		05/19/1941	183	OG	DO		BR			
29665	031					LEYDEN GARDENS SUBD/PUBLIX WAT	J P MILLER		00/00/0000	330	RG	CS		BR			
23943	031					LEYDEN GARDENS SUBD/PUBLIX WAT	J P MILLER		00/00/0000	330	RG	CS		BR			

Tuesday, March 9, 2004

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUMP LVL	PUMP GPM
34128	031					CHARLIES MARKET	HOFFMAN	11/28/1941	151	OG	IC		BR			
33918	031					JOSEPH STEIN	MARX	00/00/1943	154	RG	DO		BR			
33917	031					DELBER TRUITT	MARX	00/00/1943	142	RG	DO		BR			
34134	031					INTERNATIONAL HARVESTER/BUICK	MILAEGER	03/00/1942	1601	OGC	IC		BR			
34135	031					INTERNATIONAL HARVESTER/BUICK	MILAEGER	00/00/1942	1600	RGC	IC		BR			
33972	031					ANTHONY AMERISE	MORRIS	05/00/1940	186	O	DO					
33973	031					C RUPPERT	MARX	04/00/1940	195	OG	DO		BR			
34133	031					WM SPANDIKOW & SONS CO		00/00/1952	240	CO	IC					
23944	031					PREMIER ROSE GARDENS		00/00/1955	240	O C	IC					
34127	031					ALBERT F AMLING CO		00/00/1956	175	CO	IC					
34047	031					SPANDIKOW	SNELTEN	10/00/1934	229	OG	DO		BR			
34132	031					PREMIER ROSE GARDENS		00/00/1917	306	CO	IC		BR			
358059	031					JEWEL FOODS DISTRIBUTION CTR #MW-1	C.S. DRILLING	10/10/2003	20	RG	MO	DL	UN	11		
358060	031					JEWEL FOODS DISTRIBUTION CTR #MW-2	C.S. DRILLING/FAROLA	10/10/2003	20	RG	MO	DL	UN	11		
358061	031					JEWEL FOODS DISTRIBUTION CTR #MW-3	C.S. DRILLING/J. FAVALA	10/10/2003	20	RG	MO	DL	UN	16		

Tuesday, March 9, 2004

WID	[illegible]	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE DRILLED	DEPTH	RECORD TYPE	USE	WELL TYPE	AQUIFER TYPE	STAT LVL	PUM LVL	PUMP GPM
358305	031					ALBERTSON'S/JEWEL DIST. #MW-2	C.S. DRILLING	00/00/2003 SEALED: 1/21/04	20	A	MO	DL				
358304	031					ALBERTSON'S/JEWEL DIST.#MW-1	C.S. DRILLING	00/00/2003 SEALED: 1/21/04	20	A	MO	DL				
358306	031					ALBERTSON'S/ JEWEL DIST. #MW-3	C.S. DRILLING	00/00/2003 SEALED: 1/21/04	20	A	MO	DL				
23945	031					AMLINGS FLOWERLAND		00/00/1914	225	OGC	IC					
34084	031					INDIANA HARBOR BELT RR #3	J P MILLER	11/15/1922	1938	OG	IC		BR			
34131	031					I.H.B.R.R. #3		00/00/1922	1838	OG	IC		BR			
34129	031					I.H.B.R.R. #1 - NORPAUL YARDS		00/00/1913	1146	OGC	IC		BR			
34130	031					I.H.B.R.R. #2		00/00/1918	1493	OGC	IC		BR			

Tuesday, March 9, 2004

County: COOK

Township: 40n

Range: 12e

Sections: 33,34

Records found: 0

Questions: Contact the Illinois State Water Survey's Ground Water Division @217-333-9043

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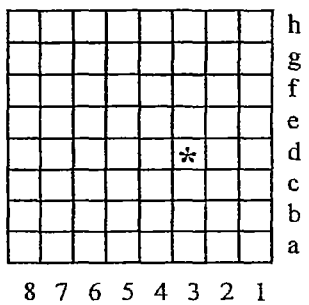

Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.